EXHIBIT 3

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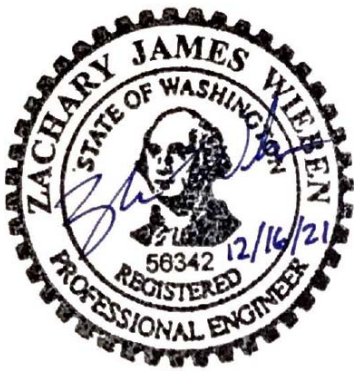
Queen Mountain
Traffic Impact Analysis

Jurisdiction: City of Bellingham
December 2021



GTC #21-019

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1. DEVELOPMENT IDENTIFICATION

The Queen Mountain development is located at the northern extents of Irongate Road, north of E Bakerview Road. A site vicinity map is shown in Figure 1. The development is proposed to consist of 96 residential units (48 single-family detached units, 48 attached townhomes). The site is currently undeveloped. The site will access Irongate Road via an extension to Richards Street. A 10-year horizon period to the year 2031 has been used to analyze the impacts of the development.

Zach Wieben, responsible for this report and traffic analysis, is a licensed professional engineer (Civil) in the State of Washington and member of the Washington State section of ITE.

2. METHODOLOGY

2.1 General

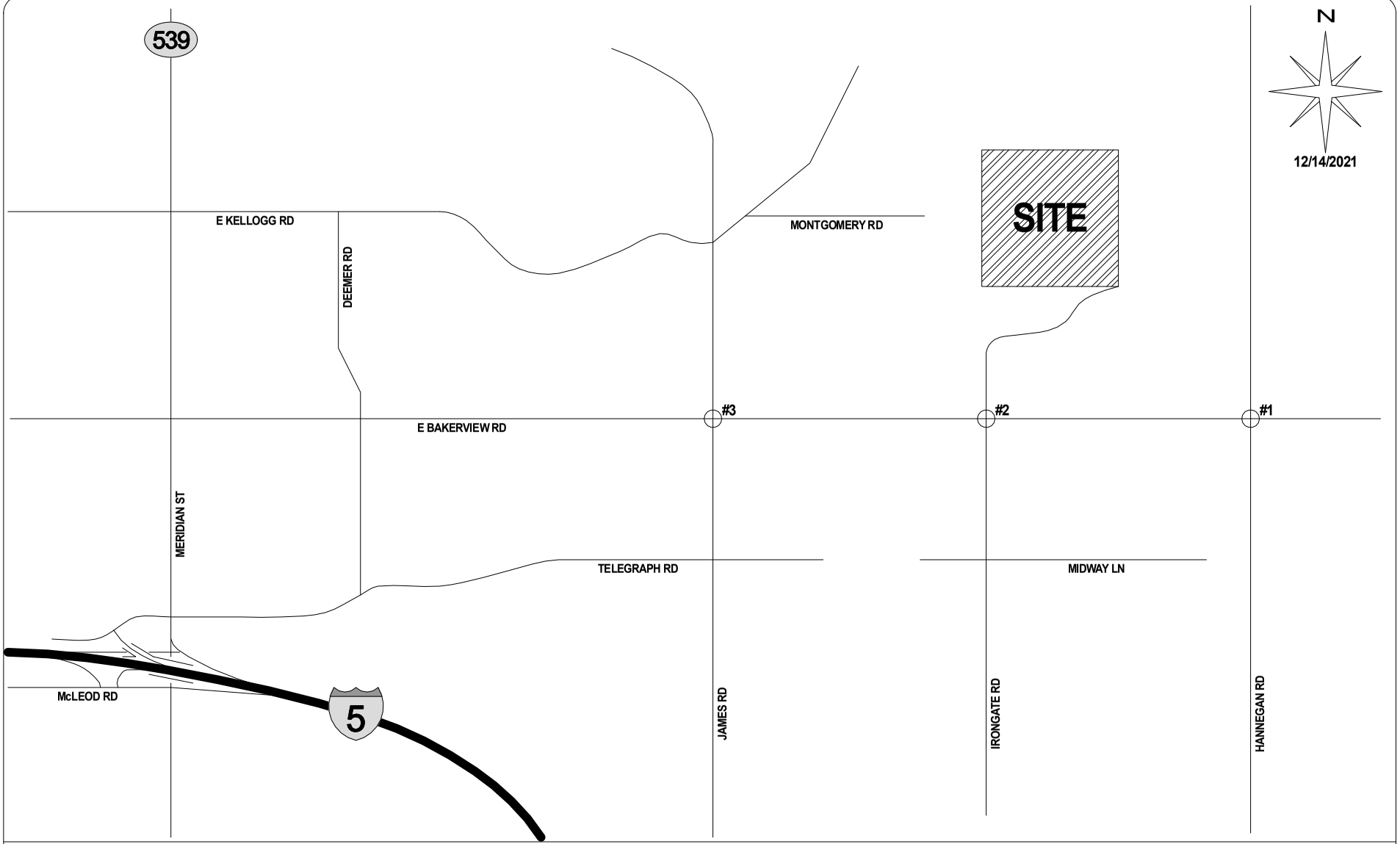
Trip generation for the Queen Mountain development is based on national data contained in *Trip Generation, 10th Edition + Supplement (2020)* by the Institute of Transportation Engineers (ITE). The average vehicle trip generation rates for Land Use Codes (LUC) 210, Single-Family Detached Housing, and LUC 220, Multifamily Housing (Low-Rise), were used in the analysis. The distribution of trips generated by the site is based on approved distributions for developments in the site vicinity and discussion with city staff.

2.2 Scope of Analysis

The intersection analysis required for the development is based on scoping conversations with City of Bellingham staff. The intersections required to be analyzed are:

1. E Bakerview Road at Hannegan Road
2. E Bakerview Road at Irongate Road
3. E Bakerview Road at James Street

Intersection analysis was performed for the 2021 existing, 2031 baseline (without development), and 2031 with development. Adjustments were made to the 2021 turning movement counts to account for any reduced traffic volumes as a result of Covid-19 closures and/or restrictions.



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TRAFFIC IMPACT STUDY
GTC #21-019

QUEEN MOUNTAIN
96 RESIDENTIAL UNITS

CITY OF BELLINGHAM

LEGEND

DEVELOPMENT SITE

STUDY INTERSECTION

FIGURE 1
SITE VICINITY MAP

Congestion is generally measured in terms of level of service (LOS). The *Highway Capacity Manual 6th Edition* by the Transportation Research Board rates road facilities and intersections between LOS A and LOS F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The level of service analysis for this report has been performed using the *Synchro 11.1, Build 1* software for signalized and unsignalized intersections. Analysis of the roundabouts was performed using *Sidra Intersection 9.0* software. It is important to note that the volumes included in the Sidra results printouts account for the peak-hour factor, the volumes in the printouts are not the input volumes. The results for the roundabout analysis have been evaluated based on volume-to-capacity (v/c) ratio and the level of service. WSDOT evaluates roundabouts on a pass/fail basis, with a v/c ratio of 0.92 on any approach being the threshold. The level of service at signalized, all-way stop-controlled and roundabout intersections is based on the average delay of all approaches. The level of service for two-way stop-controlled intersections is based on average delays for the critical stopped approach. Geometric characteristics and conflicting traffic movements are taken into consideration when determining level of service values.

The acceptable level of service for City of Bellingham intersections is LOS E. A summary of the level of service criteria is included in Table 1.

Table 1: Level of Service Criteria for Intersections

Level of Service[1]	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	**Signalized & Roundabout** Intersections
A	Little/No Delay	≤10	≤10
B	Short Delays	>10 and ≤15	>10 and ≤20
C	Average Delays	>15 and ≤25	>20 and ≤35
D	Long Delays	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>35 and ≤50	>55 and ≤80
F	Extreme Delays[2]	>50	>80

[1] **Source:** *Highway Capacity Manual 6th Edition.*

LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).
LOS B: Generally stable traffic flow conditions.
LOS C: Occasional back-ups may develop, but delay to vehicles is short term and still tolerable.
LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e. vehicles delayed one cycle or less at signal).
LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.
LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

[2] When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

3. TRIP GENERATION

The trip generation calculations for the Queen Mountain development are based on average trip generation rates contained in *Trip Generation Manual, 10th Edition + Supplement (2020)* by ITE. The average vehicle trip generation rates for the following Land Use Codes (LUC) were used in the analysis:

- LUC 210, Single-Family Detached
- LUC 220, Multifamily Housing, Low-Rise

LUC 210 was used for the 48 single-family detached units and LUC 220 was used for the 48 attached townhomes. The trip generation is summarized in Table 2.

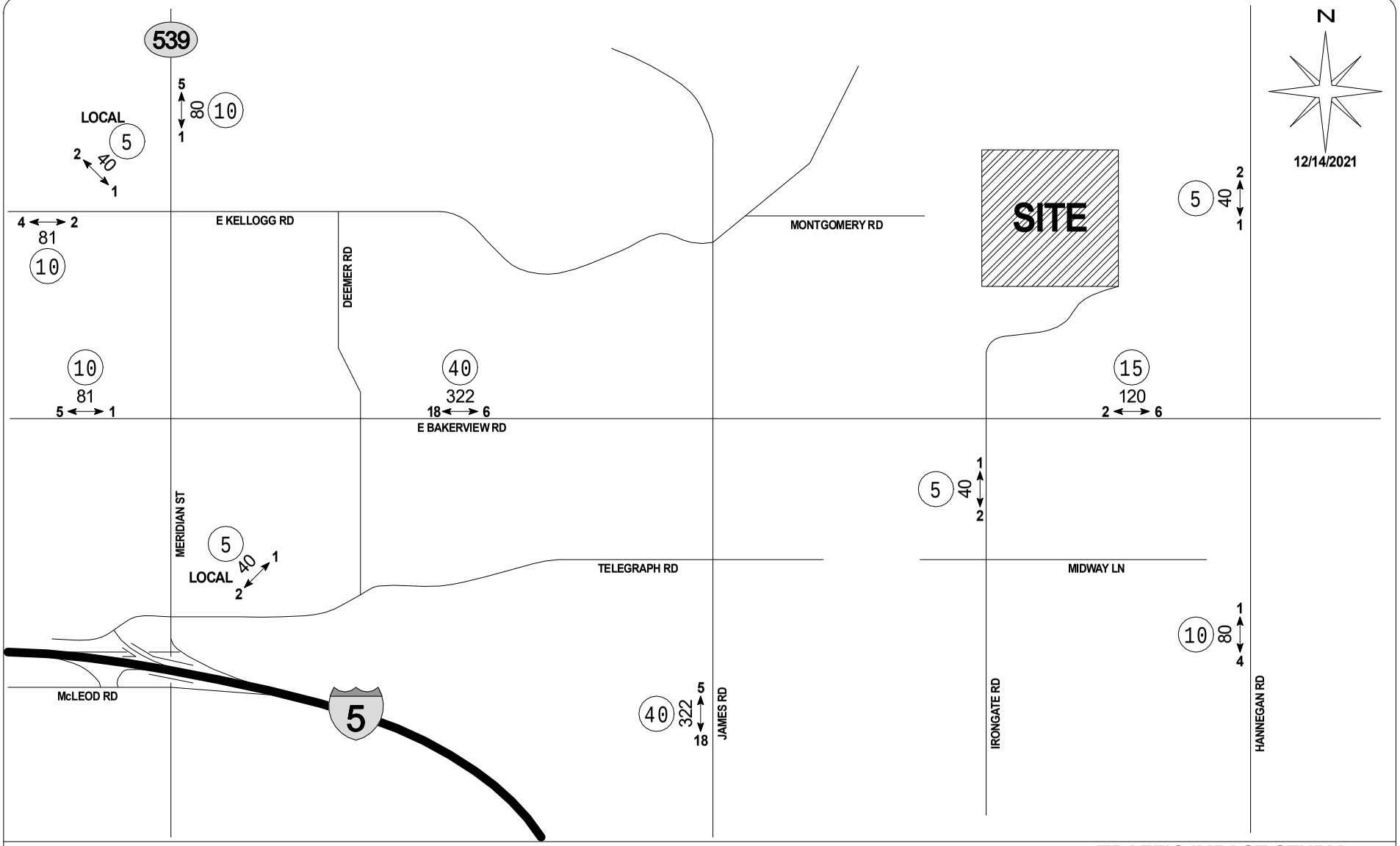
Table 2: Trip Generation Summary

Land Use	Units	ADT	AM Peak-Hour			PM Peak-Hour		
			In	Out	Total	In	Out	Total
LUC 210, Single-Family Detached	48	453	9	27	36	30	18	48
LUC 220, Multifamily (Low-Rise)	48	351	5	17	22	17	10	27
Total		**804**	**14**	**44**	**58**	**47**	**28**	**75**

The development is anticipated to generate 804 new average daily trips (ADT) with 58 new AM peak-hour trips and 75 new PM peak-hour trips. Detailed trip generation calculations are included in the attachments.

4. TRIP DISTRIBUTION

The distribution of trips generated by the Queen Mountain development is based on previously approved trip distributions for developments in the area as well as discussions with city staff. It is estimated that 55% of the development's trips will along E Bakerview Road—fifteen percent to and from the east and forty percent to and from the west. Approximately 40% of the development's trips are expected to travel to and from the south along James Street. The remaining 5% of the development's trips are anticipated to travel along Irongate Road to and from the south. Detailed distributions of the development's trips generated during the AM and PM peak-hours are shown in Figure 2 and Figure 3, respectively.



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QUEEN MOUNTAIN
96 RESIDENTIAL UNITS

CITY OF BELLINGHAM

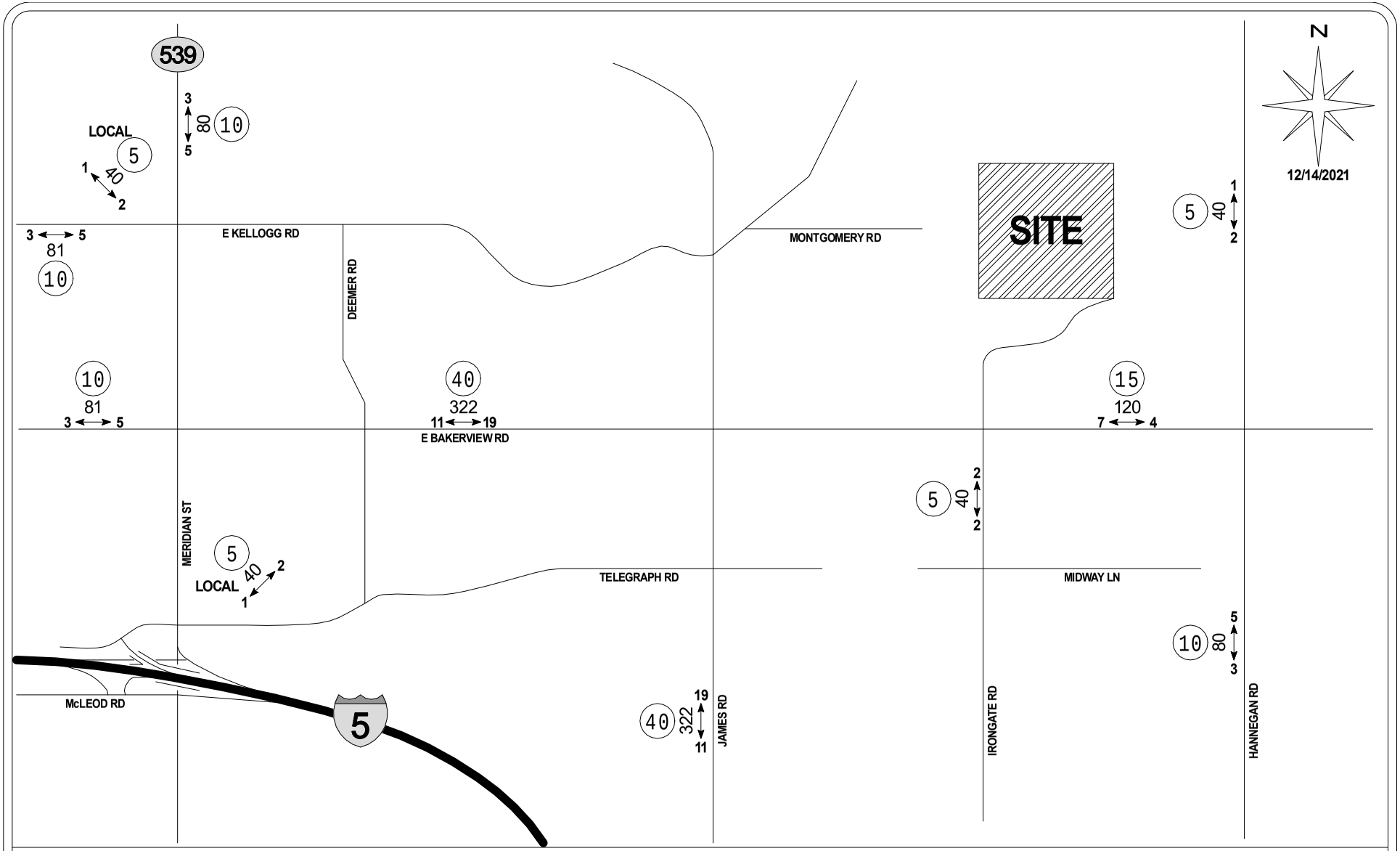
LEGEND

AWDT
AM ◄► PEAK — NEW DAILY TRIPS / NEW AM PEAK-HOUR TRIPS

(XX) — TRIP DISTRIBUTION %

FIGURE 2

DEVELOPMENT TRIP DISTRIBUTION AM PEAK-HOUR



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AWDT
PM ↔ PEAK — NEW DAILY TRIPS / NEW PM PEAK-HOUR TRIPS

(XX) — TRIP DISTRIBUTION %

FIGURE 3

DEVELOPMENT TRIP DISTRIBUTION PM PEAK-HOUR

5. ROAD NETWORK

The proposed Queen Mountain development does not have any frontage along existing roadways. A 575' extension of Richard Street will be constructed north of Irongate Road to provide access for the development. Other major streets in the area include E Bakerview Road—which is a 2-3 lane Principal Arterial—James Street—which is a 2-lane Secondary Arterial—and Hannegan Road—which is a 2-3 lane Principal Arterial.

6. TRANSIT SERVICE

Whatcom Transportation Authority's (WTA) has eastbound and westbound bus stops at the intersection of E Bakerview Road and Kamer Lane served by Route 48. However, Route 48 only has 3 daily runs between the WTA Office and Cordata Station. Cordata Station is approximately 2 miles away and is served by 11 routes with local and regional service. The WTA Office is located approximately 0.5 miles from the site and also serves Route 49. Route 49 only has 5 daily runs to downtown Bellingham—all in the afternoon. Route schedules and maps are included in the attachments.

7. LEVEL OF SERVICE ANALYSIS

The intersection level of service analysis was conducted for the peak hour during the 4-6 PM typical peak commuter period. The three intersections analyzed along with their existing intersection control are identified below:

1. E Bakerview Road at Hannegan Road - Signal
2. E Bakerview Road at Irongate Road - Signal
3. E Bakerview Road at James Street - Signal

Intersection turning movement counts were conducted by the independent data collection company Idax Data in February 2021. A follow up count was conducted at the Bakerview Road and James Street intersection in November 2021. The follow up count in November 2021 showed volumes had increased approximately 11% compared to the February 2021 count. It was assumed the increase in volume was a result of Covid-19 restrictions and closures being rolled back over the course of 2021 and the reopening of the US-Canada border. The other February 2021 turning movement counts were therefore increased by 11% as well. Count data is included in the attachments. Signal timings for the intersections along the E Bakerview Road corridor were obtained from City of Bellingham staff.

7.1 Future Improvements

The City of Bellingham has plans to replace the signal at E Bakerview Road with a roundabout. The roundabout will increase intersection capacity and safety for all users. Construction of the roundabout is expected to occur in 2023. Signal timings for the existing intersections were

optimized to balance v/c ratios and queue lengths where possible. Existing cycle lengths were maintained.

7.2 Existing Level of Service Analysis

The level of service analysis shows that the study intersections currently operate at LOS C or better for PM peak-hour. The existing level of service is summarized in Table 3 for the PM peak hour. Existing turning movement volumes at the study intersections are shown in Figure 4.

7.3 2031 Baseline Level of Service Analysis

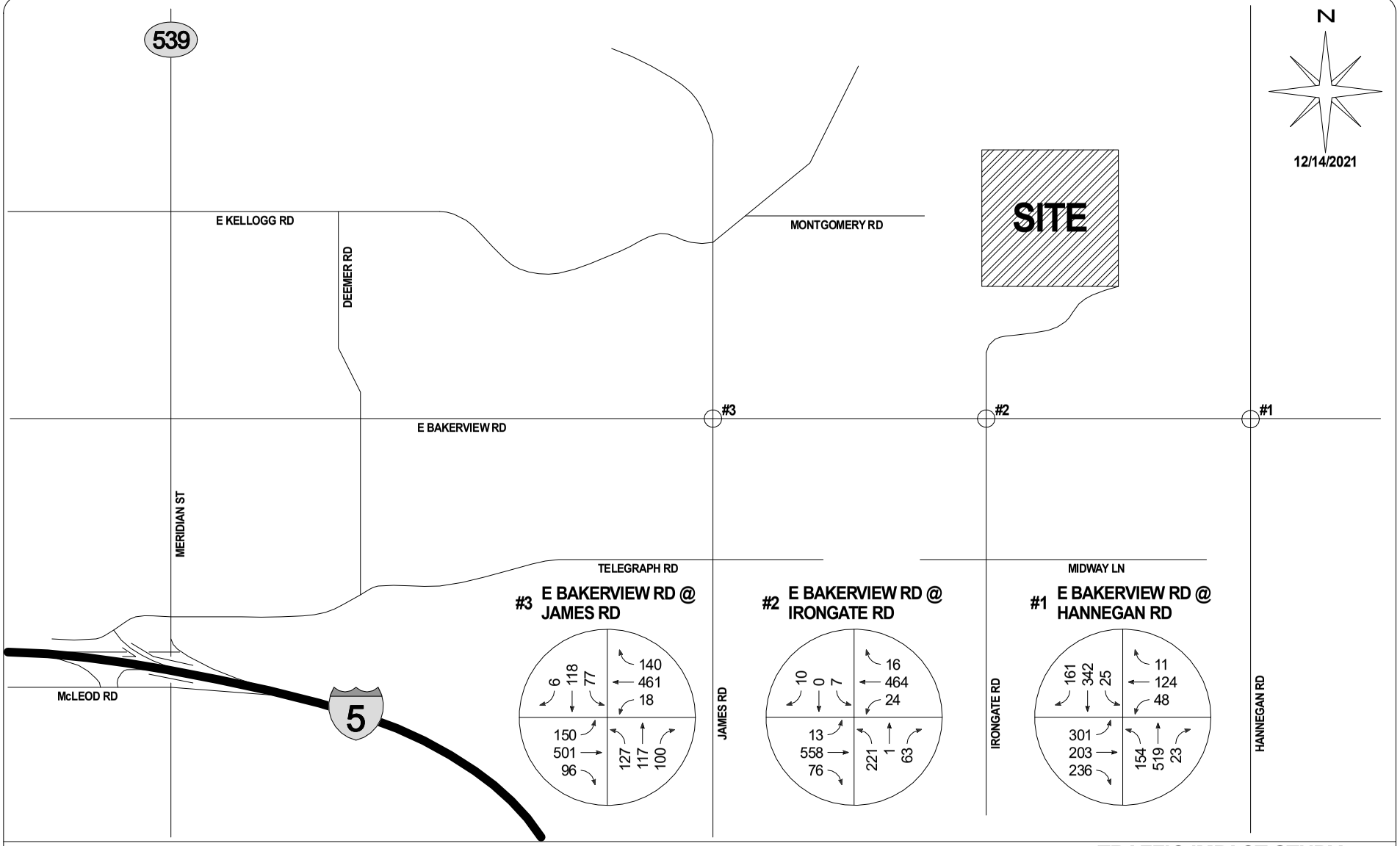
The 2031 baseline intersection volumes were calculated by applying a 2.0% annually compounding background growth rate to all movements and adding vehicle trips from three pipeline developments. The 2% annually compounding growth rate accounts for smaller development already approved and for potential long term development that may or may not occur within the 10-year horizon. WCOG's Whatcom Mobility 2040 plan identifies a 1.9% annually compounding growth rate for the E Bakerview Road corridor between James Street and Hannegan Road. Pipeline developments are larger near-term developments that have already received approval. The pipeline development names and uses are identified below:

- 561 E Kellogg Housing: Phase 1 (30 single-family units, 50 low-rise apartments) and Phase II (180 low-rise apartments)
- James Street Subdivision: 58 single-family units, 116 mid-rise apartment units
- The Village at King Mountain Phase 2: 205 multi-family units, 16 garden court apartments, 89 detached single-family homes

The level of service analysis shows that the study intersections will continue operating at LOS D or better for PM peak-hour except for the E Bakerview Road at James Street signal which is expected to operate at LOS F. The roundabout improvement identified by the City would improve the intersection to LOS A. The roundabout environmental factor was assumed to be 1.0 for the 2031 horizon year as it will have been operating for 8 years. The 2031 baseline level of service is summarized in Table 3 for the PM peak hour. Turning movement volumes at the study intersections for the 2031 baseline conditions are shown in Figure 5.

7.4 2031 Future with Development Level of Service Analysis

The 2031 future with development intersection volumes were calculated by adding development trips to the 2031 baseline volumes. Signal timings from the 2031 baseline conditions were maintained for the 2031 future with development conditions. The level of service analysis shows that the study intersections will continue operating at LOS D or better for PM peak-hour after improvements planned by the City are constructed. The 2031 future with development level of service is summarized in Table 3 for the PM peak hour. Turning movement volumes at the study intersections for the 2031 future with development conditions are shown in Figure 6.



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QUEEN MOUNTAIN
96 RESIDENTIAL UNITS

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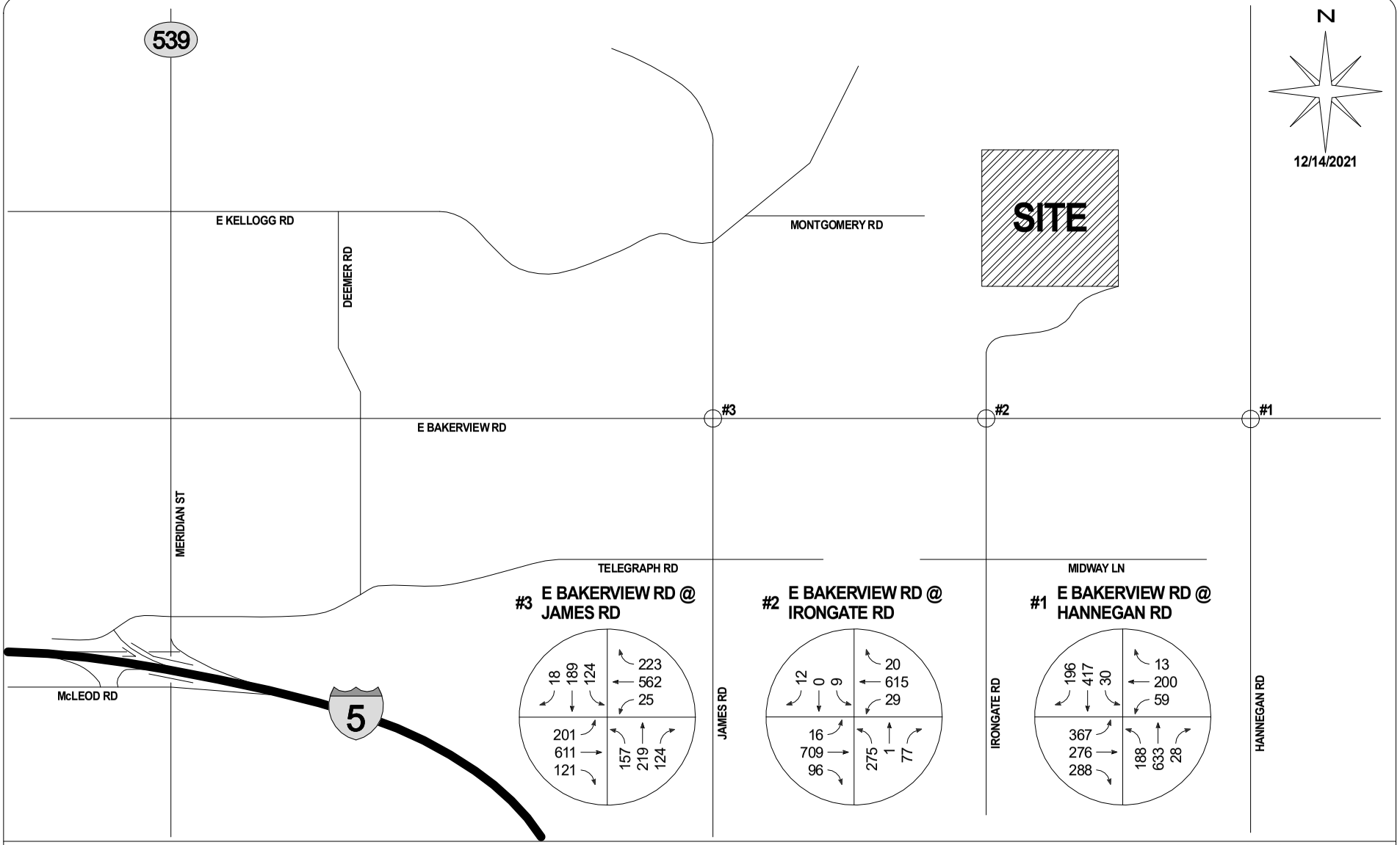
XXX → PM PEAK HOUR TURNING MOVEMENT VOLUMES ADJUSTED FOR COVID-19

FIGURE 4

2021 EXISTING PM PEAK-HOUR INTERSECTION VOLUMES



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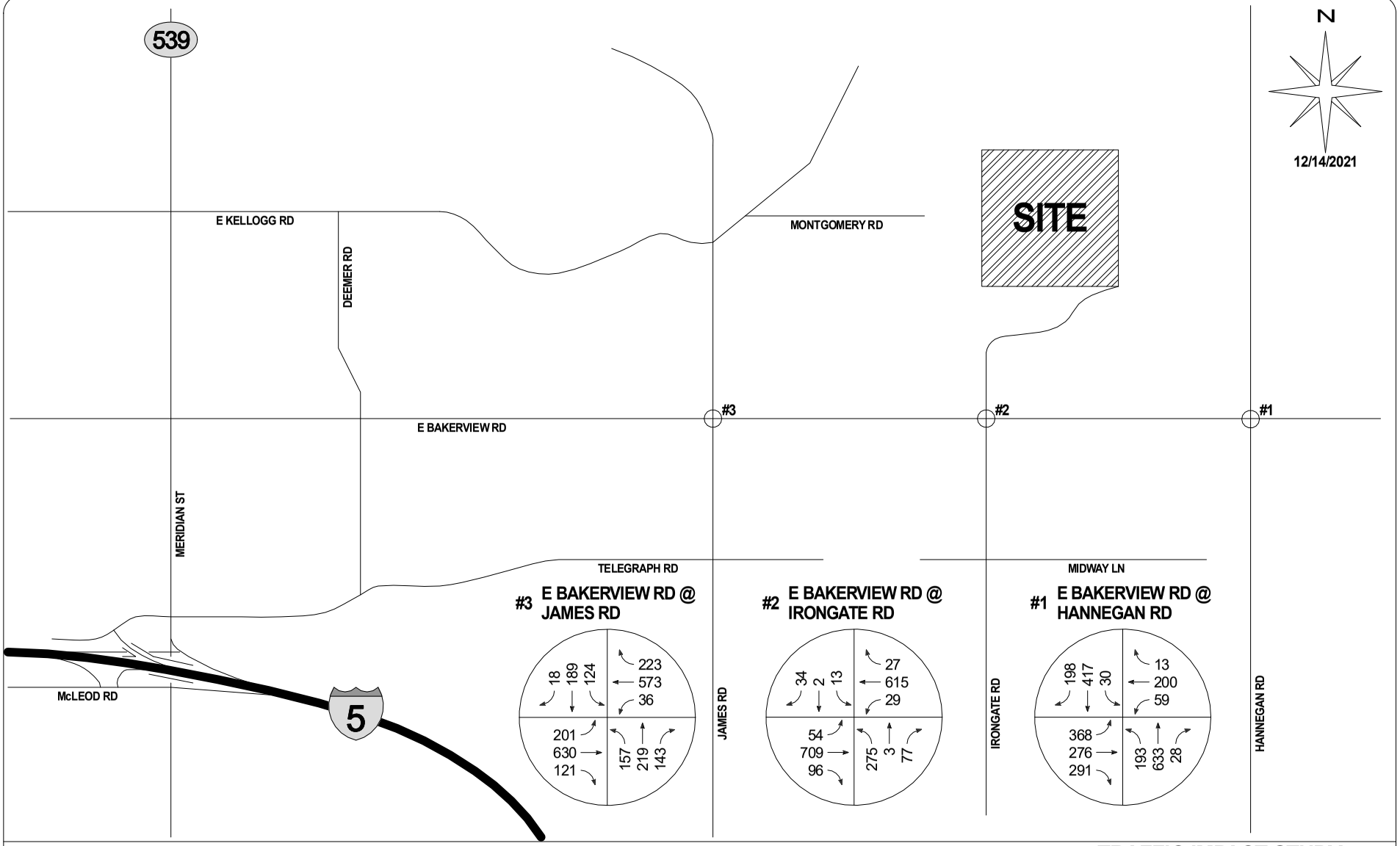
XXX → PM PEAK HOUR TURNING MOVEMENT VOLUMES

FIGURE 5

2031 BASELINE PM PEAK-HOUR INTERSECTION VOLUMES



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XXX → PM PEAK HOUR TURNING MOVEMENT VOLUMES

FIGURE 6

2031 FUTURE W/ DEV. PM PEAK-HOUR INTERSECTION VOLUMES

Table 3: Level of Service Summary – PM Peak-Hour

	Intersection	Int. Control	2021 Existing Conditions		2031 Baseline Conditions		2031 Future with Dev. Conditions	
			LOS	Delay	LOS	Delay	LOS	Delay
1	E Bakerview Rd @ Hannegan Rd	Signal	C	25.9 sec	D	44.1 sec	D	44.2 sec
2	E Bakerview Rd @ Irongate Rd	Signal	B	15.9 sec	C	30.5 sec	C	31.2 sec
3	E Bakerview Rd @ James Street	Signal	C	22.5 sec	F	139.7 sec	F	160.7 sec
		Roundabout	-	-	B	10.0 sec 0.63 v/c	B	10.2 sec 0.65 v/c

8. QUEUEING ANALYSIS

Queue diagrams and reports are included in the attachments for the 2031 future with development PM peak-hour. Table 4 summarizes the 2031 future with development 50th and 95th percentile queue lengths at the E Bakerview Road and Irongate Road signal where 100% of development trips will pass through. Storage capacities have been measured using turn pocket lengths or distance to the next public intersection. The only 95th-percentile queue that could potentially exceed its existing storage capacity is the eastbound through movement. The storage used for the table represents the distance between the Irongate Road and Kramer Lane intersections. While the eastbound queue exceeds this intersection spacing it will not affect the operations of any other signalized intersections.

Table 4: Queue Lengths

Movement	Storage Capacity [ft]	50th Percentile Queue Length [ft]	95th Percentile Queue Length [ft]
EBL	150	11	25
EBT-R	475	437	721
WBL	75	6	16
WBT-R	1,250	287	441
NBT	1,250	219	400
SBT	215	7	34

9. ACCESS ANALYSIS

The development will be constructing a 575’ extension of Richard Street from the northern extents of Irongate Road to provide access to the development site. No collisions were reported along Irongate Road from Bakerview Road to the development site.

10. COLLISION ANALYSIS

WSDOT collision data from 2016 through June 2021 (latest 5.5 years of data) was reviewed for the three study intersections. Intersection collision frequencies below 5 collisions per year for unsignalized intersections and 10 collisions per year for signalized/roundabout intersections are typically used to evaluate when additional collision analysis is justified. Additionally, a collision rate above 1.0 collision per million entering vehicles (MEV) is also used as a typical threshold for further safety analysis. No fatality collisions were reported in the collision data. All intersections have a collision frequency less than 5 collisions per year and all intersection have a collision rate less than 1.0 collision per million entering vehicles. Therefore, no additional safety analysis would typically be required. Collision data is included in the attachments. Table 5 summarizes the study intersection collision data.

Table 5: 5.5-Year Collision Rate – 2016-June 2021

	Intersection	Intersection Control	Estimated ADT	Total Collisions	Injury/Fatal Collisions	Collision Rate[3]	Collision Frequency[4]
1	E Bakerview Rd @ Hannegan Rd	Signal	21,470	26	6/0	0.60	4.73
2	E Bakerview Rd @ Irongate Rd	Signal	14,530	5	1/0	0.17	0.91
3	E Bakerview Rd @ James St	Signal	19,110	18	3/0	0.47	3.27

11. TRANSPORTATION IMPACT FEES

The City of Bellingham has established a transportation impact fee (TIF) to help fund transportation capacity improvements. The current 2021 transportation impact fee is $2,186 per new PM peak-hour person trip generated. The City of Bellingham has a 6-year phasing plan to increase the TIF to $2,830 by 2025. The City of Bellingham identifies person trip generation rates to be used in the TIF calculation. Table 6 summarizes the person trip generation calculation for the Queen Mountain development based on the methodology outlined by the City of Bellingham.

[3] Collisions Per Million Entering Vehicles (MEV)
[4] Collisions Per Year

Table 6: City of Bellingham TIF Calculation

Land Use	Units/SF	COB Person Trip Generation Rate	New Person Trips
Single-Family Detached (ITE LUC 210)	48 units	1.44/unit	69.22
Multifamily Low-Rise (ITE LUC 220)	48 units	0.81/unit	38.88
		Total Person Trips	108.10
		Per Trip TIF	x $2,186.00
		Total TIF	**$236,306.60**

The Queen Mountain development is anticipated to generate 108.10 new PM peak-hour person trips. The development's transportation impact fees should therefore total $236,306.60. City of Bellingham fees identified in this report are only good for the time at which the report is completed. Transportation impact fees may change in the future.

City staff also indicated the Queen Mountain development would be required to contribute a proportionate share towards costs for the future roundabout at Bakerview Road and James Street. The City's 2022-2027 TIP identifies $3.285 million of the $3.905 million total cost secured from Federal grant sources. The remaining $620,000 would come from local funding sources. If the City determines future growth is responsible for the remaining cost of the improvement project, the Queen Mountain development trips would equate to 8.3% of the future growth at the intersection (60 trips / 723 added trips). The Queen Mountain development would therefore have a proportional share of $51,452.28.

The TIF and proportionate share amounts combine to $287,758.88, equivalent to $2,997.49 per residential unit constructed.

12. CONCLUSIONS

The Queen Mountain development is proposed to consist of 96 residential units (48 single-family detached units, 48 attached townhomes). The development is located at the northern extents of Irongate Road, north of E Bakerview Road. The development is anticipated to generate 804 new average daily trips (ADT) with 58 new AM peak-hour trips and 75 new PM peak-hour trips.

Intersection counts conducted in February 2021 were increased to account for reduced traffic volumes as a result of Covid-19 closures and restrictions. These factored intersection volumes formed the basis for the 2031 baseline and 2031 future with development intersection volumes. The intersection level of service analysis shows all intersections are expected to operate at acceptable levels of service after construction of planned City improvements.

The City of Bellingham assesses transportation impact fees based on a per person-trip basis. The development is expected to generate 108.10 new PM peak hour person-trips that would travel in

the public right-of-way based on City of Bellingham methodology. The development would therefore have a standard TIF of $236,306.60. Additionally, the City has required the development to make a proportionate share payment towards future improvements at the E Bakerview Road and James Street intersection. The Queen Mountain development would have a proportionate share of $51,452.28 towards future improvements at the intersection. The TIF and proportionate share amounts combine to $287,758.88, equivalent to $2,997.49 per residential unit constructed.

Trip Generation

Queen Mountain
GTC #21-019

Trip Generation for: **Development Peak Weekday**
(a.k.a.): **Average Weekday Daily Trips (AWDT)**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detached Housing	48 Units	210	9.44	50%	50%	453	0%	0	453	0%	0	0%	0	453	0	0	0	0	227	226
Multifamily Housing (Low-Rise)	48 Units	220	7.32	50%	50%	351	0%	0	351	0%	0	0%	0	351	0	0	0	0	176	175
Total						804		0	804		0		0	804	0	0	0	0	403	401

Queen Mountain
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Trip Generation for: **Development Peak Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 7 and 9 AM**
(a.k.a.): **Weekday AM Peak Hour**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detached Housing	48 Units	210	0.74	25%	75%	36	0%	0	36	0%	0	0%	0	36	0	0	0	0	9	27
Multifamily Housing (Low-Rise)	48 Units	220	0.46	23%	77%	22	0%	0	22	0%	0	0%	0	22	0	0	0	0	5	17
Total						58		0	58		0		0	58	0	0	0	0	14	44

Queen Mountain
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Trip Generation for: **Development Peak Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 4 and 6 PM**
(a.k.a.): **Weekday PM Peak Hour**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detached Housing	48 Units	210	0.99	63%	37%	48	0%	0	48	0%	0	0%	0	48	0	0	0	0	30	18
Multifamily Housing (Low-Rise)	48 Units	220	0.56	63%	37%	27	0%	0	27	0%	0	0%	0	27	0	0	0	0	17	10
Total						75		0	75		0		0	75	0	0	0	0	47	28

Queen Mountain
GTC #21-019

AM Peak-Hour

%	New ADT	New AM Peak Hour Trips		
		In	Out	Total
100%	804	14	44	58
1%	8.04	0.14	0.44	0.58
2%	16.08	0.28	0.88	1.16
3%	24.12	0.42	1.32	1.74
4%	32.16	0.56	1.76	2.32
5%	**40.20**	**0.70**	**2.20**	**2.90**
6%	48.24	0.84	2.64	3.48
7%	56.28	0.98	3.08	4.06
8%	64.32	1.12	3.52	4.64
9%	72.36	1.26	3.96	5.22
10%	**80.40**	**1.40**	**4.40**	**5.80**
11%	88.44	1.54	4.84	6.38
12%	96.48	1.68	5.28	6.96
13%	104.52	1.82	5.72	7.54
14%	112.56	1.96	6.16	8.12
15%	**120.60**	**2.10**	**6.60**	**8.70**
16%	128.64	2.24	7.04	9.28
17%	136.68	2.38	7.48	9.86
18%	144.72	2.52	7.92	10.44
19%	152.76	2.66	8.36	11.02
20%	**160.80**	**2.80**	**8.80**	**11.60**
21%	168.84	2.94	9.24	12.18
22%	176.88	3.08	9.68	12.76
23%	184.92	3.22	10.12	13.34
24%	192.96	3.36	10.56	13.92
25%	**201.00**	**3.50**	**11.00**	**14.50**
26%	209.04	3.64	11.44	15.08
27%	217.08	3.78	11.88	15.66
28%	225.12	3.92	12.32	16.24
29%	233.16	4.06	12.76	16.82
30%	**241.20**	**4.20**	**13.20**	**17.40**
31%	249.24	4.34	13.64	17.98
32%	257.28	4.48	14.08	18.56
33%	265.32	4.62	14.52	19.14
34%	273.36	4.76	14.96	19.72
35%	**281.40**	**4.90**	**15.40**	**20.30**
36%	289.44	5.04	15.84	20.88
37%	297.48	5.18	16.28	21.46
38%	305.52	5.32	16.72	22.04
39%	313.56	5.46	17.16	22.62
40%	**321.60**	**5.60**	**17.60**	**23.20**
41%	329.64	5.74	18.04	23.78
42%	337.68	5.88	18.48	24.36
43%	345.72	6.02	18.92	24.94
44%	353.76	6.16	19.36	25.52
45%	**361.80**	**6.30**	**19.80**	**26.10**
46%	369.84	6.44	20.24	26.68
47%	377.88	6.58	20.68	27.26
48%	385.92	6.72	21.12	27.84
49%	393.96	6.86	21.56	28.42
50%	**402.00**	**7.00**	**22.00**	**29.00**

%	New ADT	New AM Peak Hour Trips		
		In	Out	Total
100%	804	14	44	58
51%	410.04	7.14	22.44	29.58
52%	418.08	7.28	22.88	30.16
53%	426.12	7.42	23.32	30.74
54%	434.16	7.56	23.76	31.32
55%	**442.20**	**7.70**	**24.20**	**31.90**
56%	450.24	7.84	24.64	32.48
57%	458.28	7.98	25.08	33.06
58%	466.32	8.12	25.52	33.64
59%	474.36	8.26	25.96	34.22
60%	**482.40**	**8.40**	**26.40**	**34.80**
61%	490.44	8.54	26.84	35.38
62%	498.48	8.68	27.28	35.96
63%	506.52	8.82	27.72	36.54
64%	514.56	8.96	28.16	37.12
65%	**522.60**	**9.10**	**28.60**	**37.70**
66%	530.64	9.24	29.04	38.28
67%	538.68	9.38	29.48	38.86
68%	546.72	9.52	29.92	39.44
69%	554.76	9.66	30.36	40.02
70%	**562.80**	**9.80**	**30.80**	**40.60**
71%	570.84	9.94	31.24	41.18
72%	578.88	10.08	31.68	41.76
73%	586.92	10.22	32.12	42.34
74%	594.96	10.36	32.56	42.92
75%	**603.00**	**10.50**	**33.00**	**43.50**
76%	611.04	10.64	33.44	44.08
77%	619.08	10.78	33.88	44.66
78%	627.12	10.92	34.32	45.24
79%	635.16	11.06	34.76	45.82
80%	**643.20**	**11.20**	**35.20**	**46.40**
81%	651.24	11.34	35.64	46.98
82%	659.28	11.48	36.08	47.56
83%	667.32	11.62	36.52	48.14
84%	675.36	11.76	36.96	48.72
85%	**683.40**	**11.90**	**37.40**	**49.30**
86%	691.44	12.04	37.84	49.88
87%	699.48	12.18	38.28	50.46
88%	707.52	12.32	38.72	51.04
89%	715.56	12.46	39.16	51.62
90%	**723.60**	**12.60**	**39.60**	**52.20**
91%	731.64	12.74	40.04	52.78
92%	739.68	12.88	40.48	53.36
93%	747.72	13.02	40.92	53.94
94%	755.76	13.16	41.36	54.52
95%	**763.80**	**13.30**	**41.80**	**55.10**
96%	771.84	13.44	42.24	55.68
97%	779.88	13.58	42.68	56.26
98%	787.92	13.72	43.12	56.84
99%	795.96	13.86	43.56	57.42
100%	**804.00**	**14.00**	**44.00**	**58.00**

Queen Mountain
GTC #21-019

PM Peak-Hour

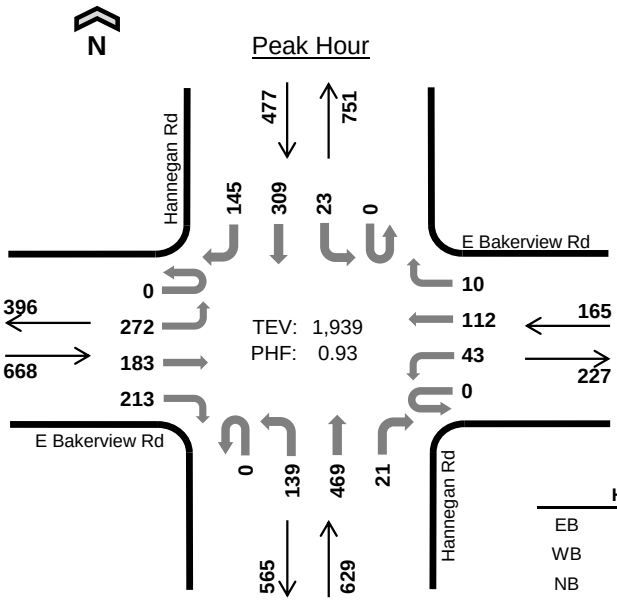
%	New ADT	New PM Peak Hour Trips		
		In	Out	Total
100%	804	47	28	75
1%	8.04	0.47	0.28	0.75
2%	16.08	0.94	0.56	1.50
3%	24.12	1.41	0.84	2.25
4%	32.16	1.88	1.12	3.00
5%	**40.20**	**2.35**	**1.40**	**3.75**
6%	48.24	2.82	1.68	4.50
7%	56.28	3.29	1.96	5.25
8%	64.32	3.76	2.24	6.00
9%	72.36	4.23	2.52	6.75
10%	**80.40**	**4.70**	**2.80**	**7.50**
11%	88.44	5.17	3.08	8.25
12%	96.48	5.64	3.36	9.00
13%	104.52	6.11	3.64	9.75
14%	112.56	6.58	3.92	10.50
15%	**120.60**	**7.05**	**4.20**	**11.25**
16%	128.64	7.52	4.48	12.00
17%	136.68	7.99	4.76	12.75
18%	144.72	8.46	5.04	13.50
19%	152.76	8.93	5.32	14.25
20%	**160.80**	**9.40**	**5.60**	**15.00**
21%	168.84	9.87	5.88	15.75
22%	176.88	10.34	6.16	16.50
23%	184.92	10.81	6.44	17.25
24%	192.96	11.28	6.72	18.00
25%	**201.00**	**11.75**	**7.00**	**18.75**
26%	209.04	12.22	7.28	19.50
27%	217.08	12.69	7.56	20.25
28%	225.12	13.16	7.84	21.00
29%	233.16	13.63	8.12	21.75
30%	**241.20**	**14.10**	**8.40**	**22.50**
31%	249.24	14.57	8.68	23.25
32%	257.28	15.04	8.96	24.00
33%	265.32	15.51	9.24	24.75
34%	273.36	15.98	9.52	25.50
35%	**281.40**	**16.45**	**9.80**	**26.25**
36%	289.44	16.92	10.08	27.00
37%	297.48	17.39	10.36	27.75
38%	305.52	17.86	10.64	28.50
39%	313.56	18.33	10.92	29.25
40%	**321.60**	**18.80**	**11.20**	**30.00**
41%	329.64	19.27	11.48	30.75
42%	337.68	19.74	11.76	31.50
43%	345.72	20.21	12.04	32.25
44%	353.76	20.68	12.32	33.00
45%	**361.80**	**21.15**	**12.60**	**33.75**
46%	369.84	21.62	12.88	34.50
47%	377.88	22.09	13.16	35.25
48%	385.92	22.56	13.44	36.00
49%	393.96	23.03	13.72	36.75
50%	**402.00**	**23.50**	**14.00**	**37.50**

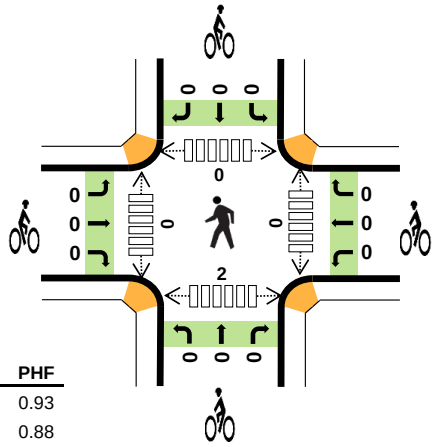
%	New ADT	New PM Peak Hour Trips		
		In	Out	Total
100%	804	47	28	75
51%	410.04	23.97	14.28	38.25
52%	418.08	24.44	14.56	39.00
53%	426.12	24.91	14.84	39.75
54%	434.16	25.38	15.12	40.50
55%	**442.20**	**25.85**	**15.40**	**41.25**
56%	450.24	26.32	15.68	42.00
57%	458.28	26.79	15.96	42.75
58%	466.32	27.26	16.24	43.50
59%	474.36	27.73	16.52	44.25
60%	**482.40**	**28.20**	**16.80**	**45.00**
61%	490.44	28.67	17.08	45.75
62%	498.48	29.14	17.36	46.50
63%	506.52	29.61	17.64	47.25
64%	514.56	30.08	17.92	48.00
65%	**522.60**	**30.55**	**18.20**	**48.75**
66%	530.64	31.02	18.48	49.50
67%	538.68	31.49	18.76	50.25
68%	546.72	31.96	19.04	51.00
69%	554.76	32.43	19.32	51.75
70%	**562.80**	**32.90**	**19.60**	**52.50**
71%	570.84	33.37	19.88	53.25
72%	578.88	33.84	20.16	54.00
73%	586.92	34.31	20.44	54.75
74%	594.96	34.78	20.72	55.50
75%	**603.00**	**35.25**	**21.00**	**56.25**
76%	611.04	35.72	21.28	57.00
77%	619.08	36.19	21.56	57.75
78%	627.12	36.66	21.84	58.50
79%	635.16	37.13	22.12	59.25
80%	**643.20**	**37.60**	**22.40**	**60.00**
81%	651.24	38.07	22.68	60.75
82%	659.28	38.54	22.96	61.50
83%	667.32	39.01	23.24	62.25
84%	675.36	39.48	23.52	63.00
85%	**683.40**	**39.95**	**23.80**	**63.75**
86%	691.44	40.42	24.08	64.50
87%	699.48	40.89	24.36	65.25
88%	707.52	41.36	24.64	66.00
89%	715.56	41.83	24.92	66.75
90%	**723.60**	**42.30**	**25.20**	**67.50**
91%	731.64	42.77	25.48	68.25
92%	739.68	43.24	25.76	69.00
93%	747.72	43.71	26.04	69.75
94%	755.76	44.18	26.32	70.50
95%	**763.80**	**44.65**	**26.60**	**71.25**
96%	771.84	45.12	26.88	72.00
97%	779.88	45.59	27.16	72.75
98%	787.92	46.06	27.44	73.50
99%	795.96	46.53	27.72	74.25
100%	**804.00**	**47.00**	**28.00**	**75.00**

Count Data

Hannegan Rd
E Bakerview Rd

Date: 02-24-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.1%	0.93
WB	1.8%	0.88
NB	1.7%	0.89
SB	3.8%	0.91
TOTAL	2.4%	0.93

Two-Hour Count Summaries

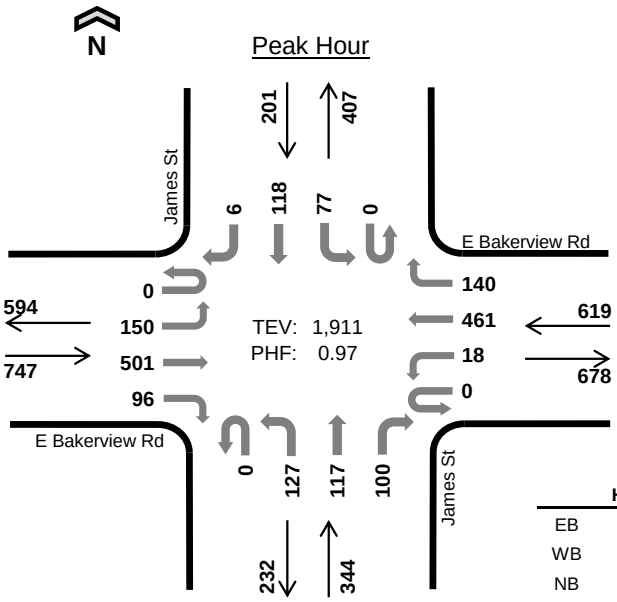
Interval Start		E Bakerview Rd Eastbound				E Bakerview Rd Westbound				Hannegan Rd Northbound				Hannegan Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	67	50	44	0	13	21	7	0	37	89	9	0	4	101	30	472	0
4:15 PM		0	60	37	47	0	8	19	1	0	38	107	4	0	4	80	26	431	0
4:30 PM		**0**	**70**	**47**	**61**	**0**	**11**	**31**	**3**	**0**	**36**	**114**	**5**	**0**	**5**	**82**	**36**	**501**	0
4:45 PM		**0**	**72**	**45**	**41**	**0**	**10**	**27**	**2**	**0**	**27**	**115**	**4**	**0**	**8**	**63**	**32**	**446**	1,850
5:00 PM		**0**	**75**	**46**	**58**	**0**	**12**	**30**	**5**	**0**	**44**	**127**	**6**	**0**	**6**	**76**	**38**	**523**	1,901
5:15 PM		**0**	**55**	**45**	**53**	**0**	**10**	**24**	**0**	**0**	**32**	**113**	**6**	**0**	**4**	**88**	**39**	**469**	**1,939**
5:30 PM		0	76	45	40	0	13	10	1	0	30	101	7	0	5	67	21	416	1,854
5:45 PM		0	47	32	43	0	4	25	2	0	21	88	4	0	3	64	21	354	1,762
Count Total		0	522	347	387	0	81	187	21	0	265	854	45	0	39	621	243	3,612	0
Peak Hour	**All**	**0**	**272**	**183**	**213**	**0**	**43**	**112**	**10**	**0**	**139**	**469**	**21**	**0**	**23**	**309**	**145**	**1,939**	**0**
	HV	**0**	**5**	**3**	**6**	**0**	**3**	**0**	**0**	**0**	**4**	**6**	**1**	**0**	**2**	**9**	**7**	**46**	**0**
	HV%	**-**	**2%**	**2%**	**3%**	**-**	**7%**	**0%**	**0%**	**-**	**3%**	**1%**	**5%**	**-**	**9%**	**3%**	**5%**	**2%**	**0**

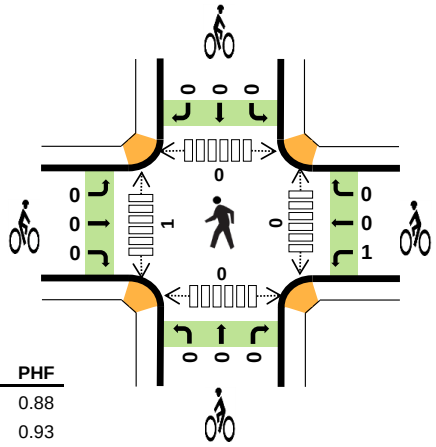
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	7	1	2	7	*17*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	2	1	9	3	*15*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**2**	**0**	**4**	**6**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**7**	**1**	**2**	**8**	***18***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	*2*
5:00 PM	**0**	**1**	**4**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**5**	**1**	**1**	**3**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	1	0	1	0	*2*	0	0	0	1	*1*	0	0	0	2	*2*
5:45 PM	2	2	4	4	*12*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	26	7	27	32	*92*	0	0	0	1	*1*	0	0	0	4	*4*
Peak Hour	**14**	**3**	**11**	**18**	***46***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	***2***

James St
E Bakerview Rd

Date: 11/10/2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	1.5%	0.88
WB	4.8%	0.93
NB	2.0%	0.95
SB	1.5%	0.88
TOTAL	2.7%	0.97

Two-Hour Count Summaries

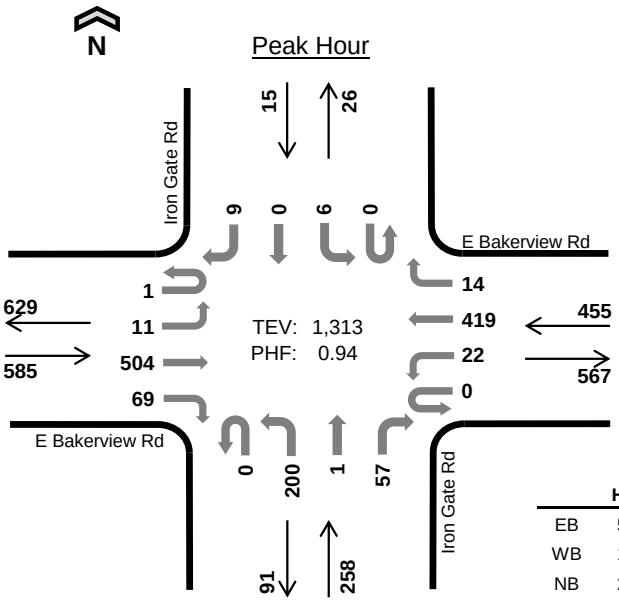
Interval Start		E Bakerview Rd Eastbound				E Bakerview Rd Westbound				James St Northbound				James St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	23	92	17	0	6	100	33	0	25	31	30	0	16	33	1	407	0
4:15 PM		**0**	**37**	**116**	**27**	**0**	**6**	**108**	**36**	**0**	**29**	**29**	**25**	**0**	**19**	**28**	**1**	**461**	0
4:30 PM		**0**	**36**	**123**	**31**	**0**	**3**	**110**	**37**	**0**	**38**	**23**	**29**	**0**	**20**	**33**	**4**	**487**	0
4:45 PM		**0**	**29**	**119**	**17**	**0**	**3**	**127**	**37**	**0**	**30**	**31**	**30**	**0**	**17**	**28**	**0**	**468**	1,823
5:00 PM		**0**	**48**	**143**	**21**	**0**	**6**	**116**	**30**	**0**	**30**	**34**	**16**	**0**	**21**	**29**	**1**	**495**	**1,911**
5:15 PM		0	39	111	26	0	4	114	27	0	25	27	26	0	24	27	3	453	1,903
5:30 PM		0	25	98	17	0	4	112	25	0	22	23	33	0	7	29	0	395	1,811
5:45 PM		0	20	68	15	0	4	87	35	0	24	32	17	0	21	22	5	350	1,693
Count Total		0	257	870	171	0	36	874	260	0	223	230	206	0	145	229	15	3,516	0
Peak Hour	**All**	**0**	**150**	**501**	**96**	**0**	**18**	**461**	**140**	**0**	**127**	**117**	**100**	**0**	**77**	**118**	**6**	**1,911**	**0**
	HV	**0**	**0**	**9**	**2**	**0**	**0**	**29**	**1**	**0**	**2**	**2**	**3**	**0**	**2**	**1**	**0**	**51**	**0**
	HV%	**-**	**0%**	**2%**	**2%**	**-**	**0%**	**6%**	**1%**	**-**	**2%**	**2%**	**3%**	**-**	**3%**	**1%**	**0%**	**3%**	**0**

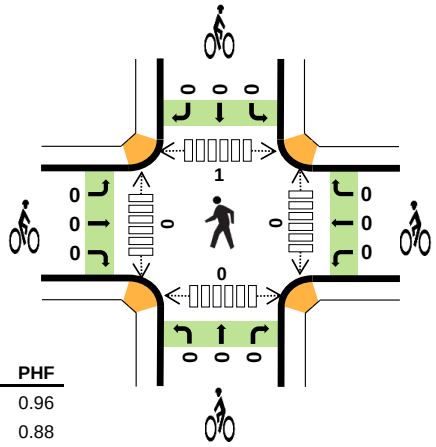
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	7	1	1	*11*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**3**	**8**	**0**	**0**	***11***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**4**	**6**	**3**	**1**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**1**	**7**	**3**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:00 PM	**3**	**9**	**1**	**1**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	2	3	1	2	*8*	1	0	0	0	*1*	0	0	0	0	*0*
5:30 PM	1	4	4	0	*9*	1	1	0	0	*2*	0	0	0	0	*0*
5:45 PM	4	11	0	1	*16*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	20	55	13	7	*95*	2	2	0	0	*4*	0	1	0	0	*1*
Peak Hour	**11**	**30**	**7**	**3**	***51***	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***

Iron Gate Rd
E Bakerview Rd

Date: 02-24-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	5.0%	0.96
WB	1.3%	0.88
NB	2.3%	0.83
SB	0.0%	0.54
TOTAL	3.1%	0.94

Two-Hour Count Summaries

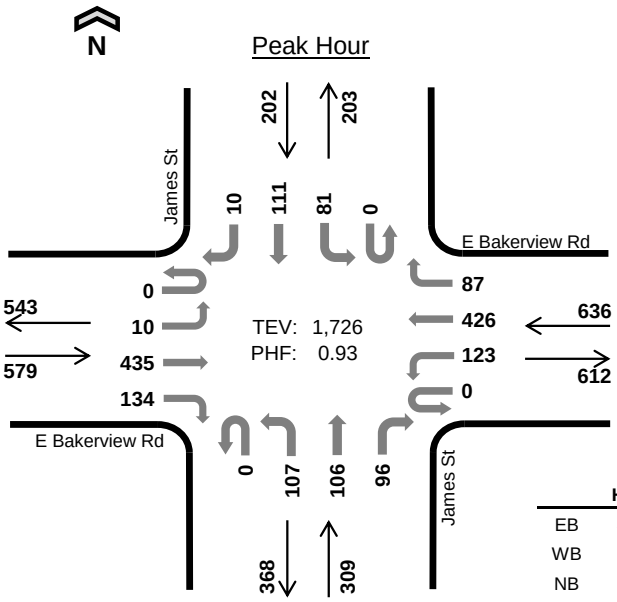
Interval Start		E Bakerview Rd Eastbound				E Bakerview Rd Westbound				Iron Gate Rd Northbound				Iron Gate Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	5	126	17	0	5	99	1	0	51	0	20	0	2	0	3	329	0
4:15 PM		0	3	132	19	0	3	88	3	0	33	0	14	0	4	0	1	300	0
4:30 PM		**0**	**3**	**124**	**16**	**0**	**5**	**109**	**3**	**0**	**54**	**0**	**10**	**0**	**2**	**0**	**2**	**328**	0
4:45 PM		**0**	**4**	**125**	**23**	**0**	**9**	**89**	**3**	**0**	**42**	**0**	**22**	**0**	**2**	**0**	**5**	**324**	1,281
5:00 PM		**0**	**2**	**121**	**14**	**0**	**4**	**124**	**2**	**0**	**61**	**1**	**16**	**0**	**1**	**0**	**2**	**348**	1,300
5:15 PM		**1**	**2**	**134**	**16**	**0**	**4**	**97**	**6**	**0**	**43**	**0**	**9**	**0**	**1**	**0**	**0**	**313**	**1,313**
5:30 PM		0	1	110	14	0	1	78	0	0	45	0	20	0	0	0	2	271	1,256
5:45 PM		0	4	109	5	0	0	71	0	0	18	1	5	0	1	0	0	214	1,146
Count Total		1	24	981	124	0	31	755	18	0	347	2	116	0	13	0	15	2,427	0
Peak Hour	**All**	**1**	**11**	**504**	**69**	**0**	**22**	**419**	**14**	**0**	**200**	**1**	**57**	**0**	**6**	**0**	**9**	**1,313**	**0**
	HV	**0**	**0**	**20**	**9**	**0**	**4**	**2**	**0**	**0**	**4**	**0**	**2**	**0**	**0**	**0**	**0**	**41**	**0**
	HV%	**0%**	**0%**	**4%**	**13%**	**-**	**18%**	**0%**	**0%**	**-**	**2%**	**0%**	**4%**	**-**	**0%**	**-**	**0%**	**3%**	**0**

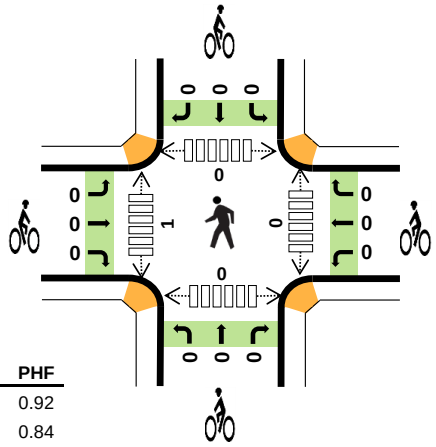
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	7	1	2	0	*10*	0	0	1	0	*1*	0	0	0	0	*0*
4:15 PM	6	3	1	1	*11*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**7**	**3**	**2**	**0**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**9**	**1**	**1**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**4**	**1**	**2**	**0**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**9**	**1**	**1**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***
5:30 PM	3	2	1	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	8	1	0	0	*9*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	53	13	10	1	*77*	0	0	1	0	*1*	0	0	1	0	*1*
Peak Hour	**29**	**6**	**6**	**0**	***41***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***

James St
E Bakerview Rd

Date: 02-24-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	4.1%	0.92
WB	0.9%	0.84
NB	1.0%	0.90
SB	2.5%	0.89
TOTAL	2.2%	0.93

Two-Hour Count Summaries

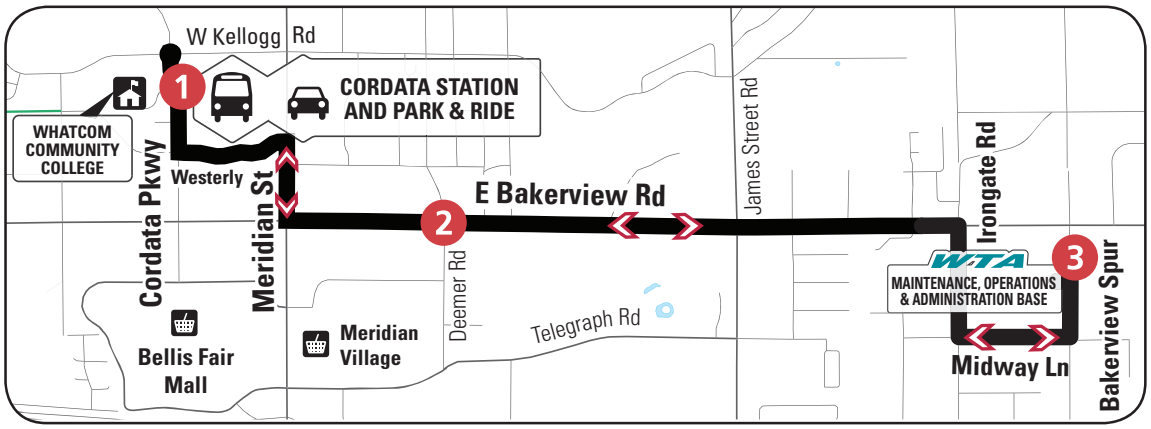
Interval Start		E Bakerview Rd Eastbound				E Bakerview Rd Westbound				James St Northbound				James St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	113	29	0	34	110	20	0	26	33	22	0	16	14	3	420	0
4:15 PM		0	5	118	22	0	28	73	21	0	17	26	20	0	21	27	1	379	0
4:30 PM		**0**	**3**	**124**	**30**	**0**	**32**	**119**	**18**	**0**	**29**	**33**	**24**	**0**	**17**	**31**	**4**	**464**	0
4:45 PM		**0**	**3**	**105**	**43**	**0**	**24**	**95**	**17**	**0**	**28**	**27**	**27**	**0**	**19**	**32**	**5**	**425**	1,688
5:00 PM		**0**	**2**	**92**	**29**	**0**	**42**	**122**	**25**	**0**	**21**	**26**	**22**	**0**	**25**	**31**	**1**	**438**	1,706
5:15 PM		**0**	**2**	**114**	**32**	**0**	**25**	**90**	**27**	**0**	**29**	**20**	**23**	**0**	**20**	**17**	**0**	**399**	**1,726**
5:30 PM		0	8	100	23	0	24	89	19	0	23	20	19	0	11	28	3	367	1,629
5:45 PM		0	1	97	29	0	18	63	16	0	18	19	14	0	13	23	2	313	1,517
Count Total		0	24	863	237	0	227	761	163	0	191	204	171	0	142	203	19	3,205	0
Peak Hour	**All**	**0**	**10**	**435**	**134**	**0**	**123**	**426**	**87**	**0**	**107**	**106**	**96**	**0**	**81**	**111**	**10**	**1,726**	**0**
	HV	**0**	**0**	**24**	**0**	**0**	**1**	**4**	**1**	**0**	**0**	**1**	**2**	**0**	**4**	**0**	**1**	**38**	**0**
	HV%	**-**	**0%**	**6%**	**0%**	**-**	**1%**	**1%**	**1%**	**-**	**0%**	**1%**	**2%**	**-**	**5%**	**0%**	**10%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	6	2	0	0	*8*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	8	2	0	1	*11*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**6**	**2**	**2**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
4:45 PM	**10**	**1**	**0**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**2**	**2**	**0**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**6**	**1**	**1**	**2**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	5	3	1	0	*9*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	8	1	1	0	*10*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	51	14	5	6	*76*	0	0	0	0	*0*	0	1	0	0	*1*
Peak Hour	**24**	**6**	**3**	**5**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***

Transit Data

48 BAKERVIEW SPUR CORDATA/WCC



This route uses platform B at Cordata Station.

WEEKDAYS

48 Bakerview Spur

LEAVE Cordata Station ①	Bakerview & Deemer ②	ARRIVE Bakerview Spur (WTA Office) ③	Bus Continues as Route
7:10	7:15	7:20	Out of Service
9:00	9:05	9:10	Out of Service
1:45	1:50	1:55	Out of Service
6:10	6:15	6:20	Out of Service
8:05	8:10	8:15	Out of Service

48 Cordata/WCC

LEAVE Bakerview Spur (WTA Office) ③	Bakerview & Deemer ②	ARRIVE Cordata Station ①	Bus Continues as Route
6:40	6:45	6:50	71X E/N/S
11:15	11:20	11:25	71X E/N/S
3:50	3:55	4:00	71X E/N/S

SATURDAYS

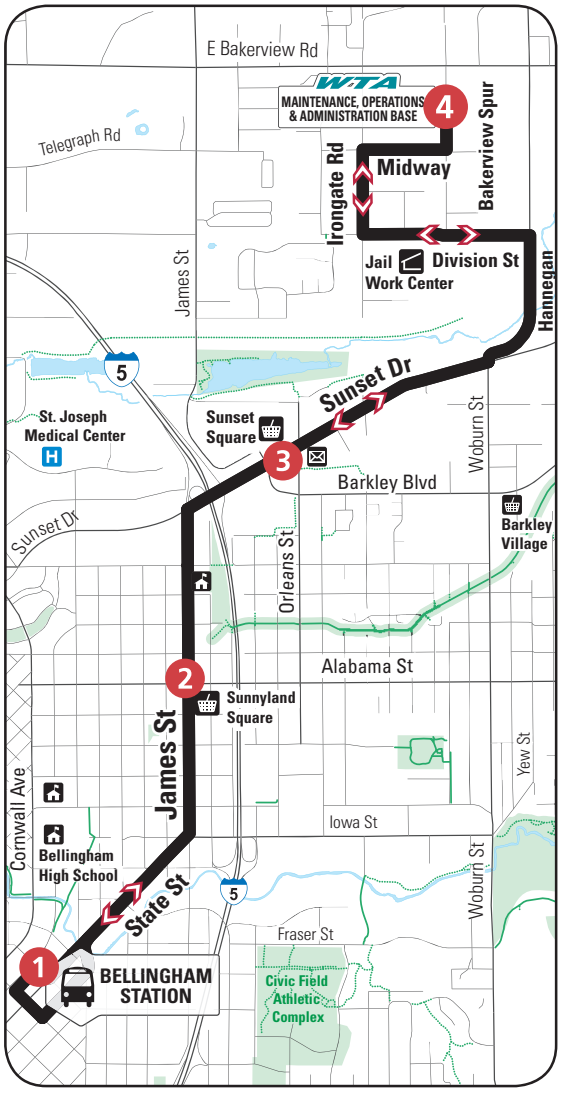
48 Bakerview Spur

LEAVE Cordata Station ①	Bakerview & Deemer ②	ARRIVE Bakerview Spur (WTA Office) ③	Bus Continues as Route
9:32	9:37	9:42	Out of Service
12:32	12:37	12:42	Out of Service
7:51	7:56	8:01	Out of Service

48 Cordata/WCC

LEAVE Bakerview Spur (WTA Office) ③	Bakerview & Deemer ②	ARRIVE Cordata Station ①	Bus Continues as Route
10:12	10:17	10:22	71X E/N/S
5:30	5:35	5:40	71X E/N/S

49 BAKERVIEW SPUR DOWNTOWN



This route uses gate 10 at B'ham Station.

WEEKDAYS

49 Bakerview Spur

LEAVE B'ham Station 1	James & Alabama 2	Sunset & Orleans 3	ARRIVE Bakerview Spur (WTA Office) 4	Bus Continues as Route
6:55	6:59	7:04	7:15	Out of Service
7:25	7:29	7:34	7:45	Out of Service
7:43	7:47	7:52	8:03	Out of Service
7:55	7:59	8:04	8:15	Out of Service
11:25	11:29	11:34	11:45	Out of Service
12:25	12:29	12:34	12:45	Out of Service

49 Downtown

LEAVE Bakerview Spur (WTA Office) 4	Sunset & Orleans 3	James & Alabama 2	ARRIVE B'ham Station 1	Bus Continues as Route
1:15	1:22	1:27	1:35	72X Kendall
3:00	3:07	3:12	3:20	75B Birch Bay
4:30	4:37	4:42	4:50	75A Blaine
5:00	5:07	5:12	5:20	75B Birch Bay
5:45	5:52	5:57	6:05	75A Blaine

SATURDAYS

49 Bakerview Spur

LEAVE B'ham Station 1	James & Alabama 2	Sunset & Orleans 3	ARRIVE Bakerview Spur (WTA Office) 4	Bus Continues as Route
8:55	8:59	9:06	9:13	Out of Service
12:25	12:29	12:36	12:43	Out of Service
4:25	4:29	4:36	4:43	Out of Service

49 Downtown

LEAVE Bakerview Spur (WTA Office) 4	Sunset & Orleans 3	James & Alabama 2	ARRIVE B'ham Station 1	Bus Continues as Route
9:47	9:54	9:59	10:05	72X Kendall
1:47	1:54	1:59	2:05	72X Kendall
5:47	5:54	5:59	6:05	72X Kendall

Pipeline Data

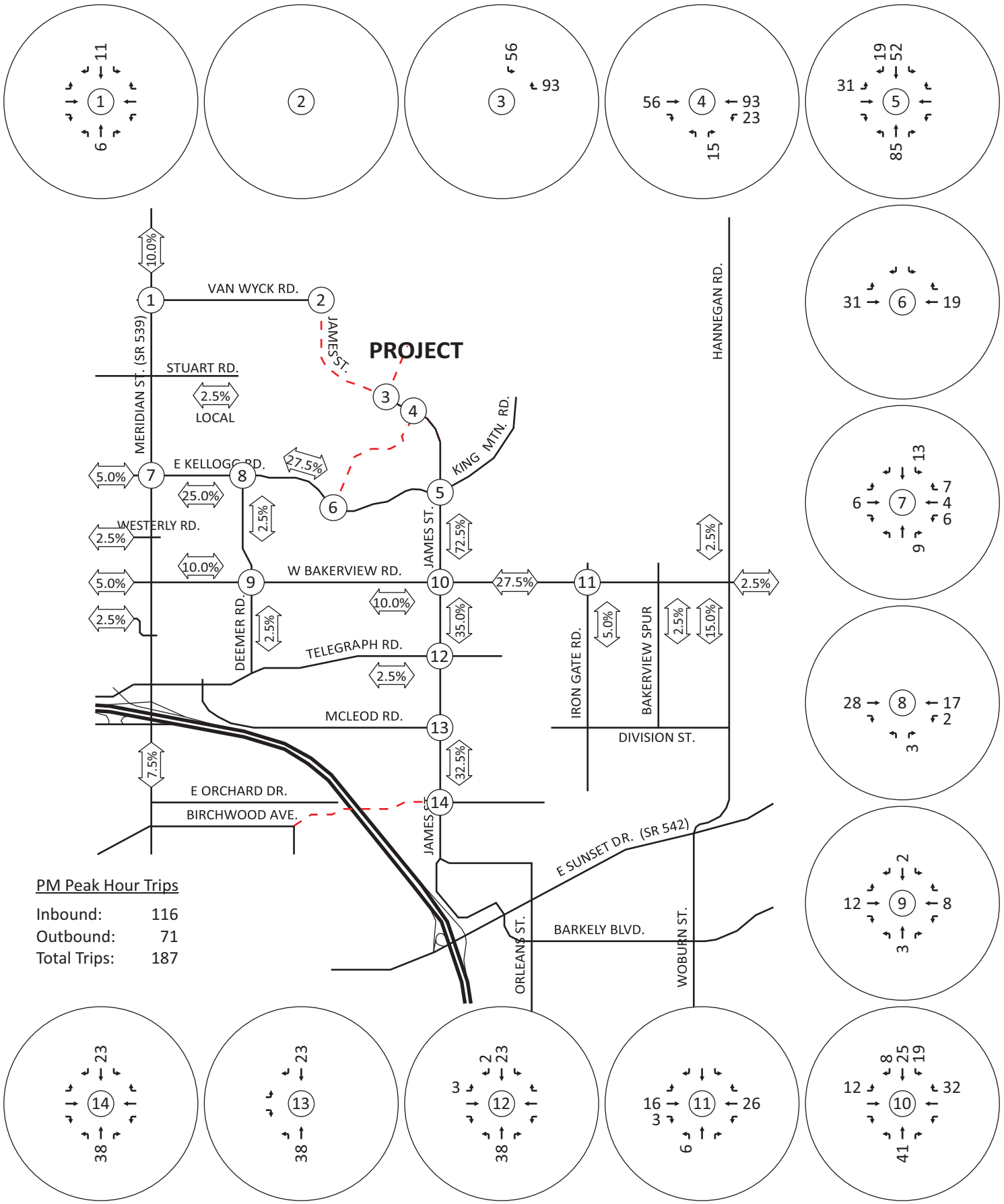
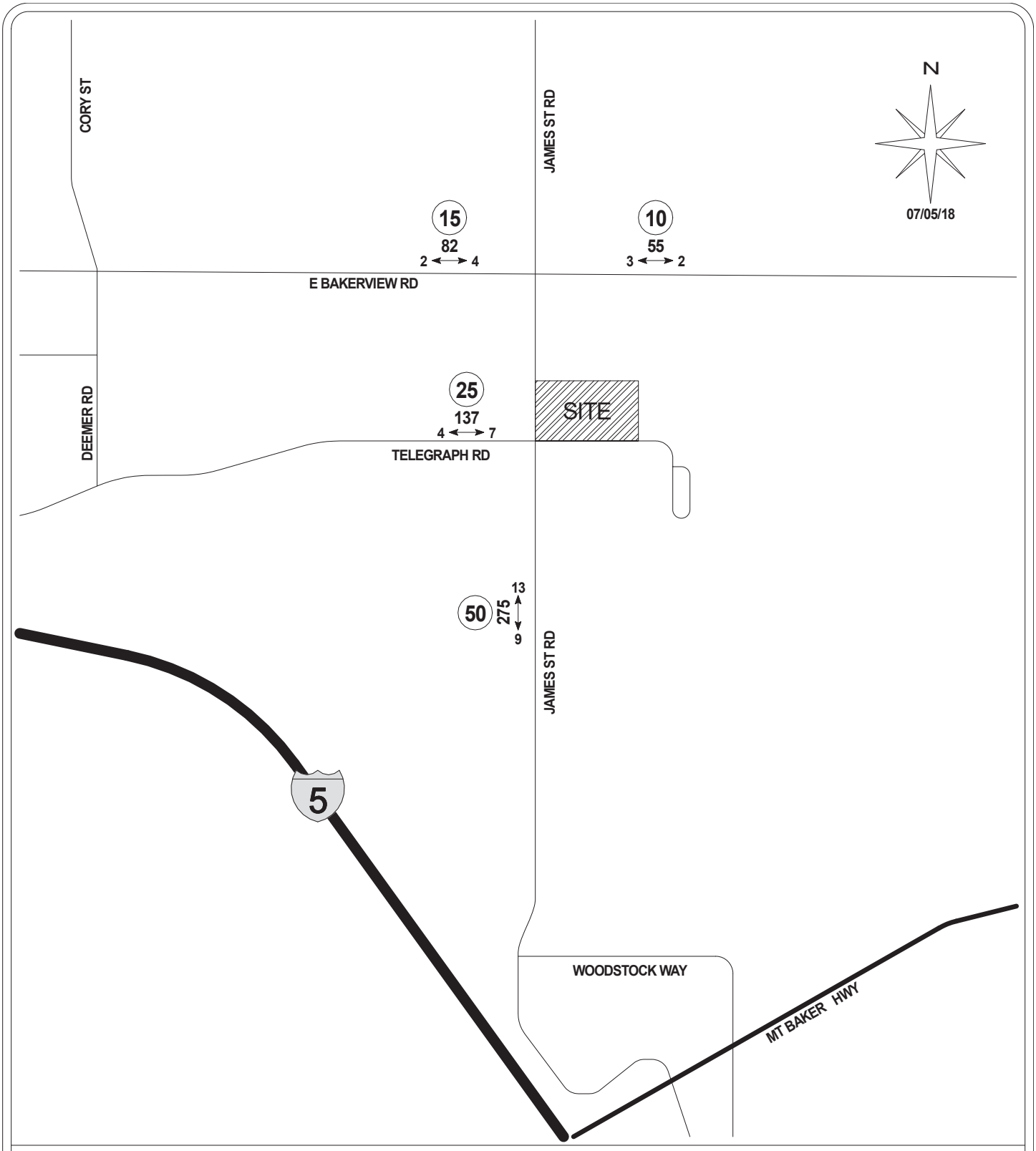


Figure 3:
PM Peak Hour Trip Distribution and Assignment, Applicant's Phase 2 Proposal



GIBSON TRAFFIC CONSULTANTS

TRAFFIC IMPACT STUDY
GTC #18-144

4020 JAMES STREET
DEVELOPMENT
101 APARTMENTS

CITY OF BELLINGHAM

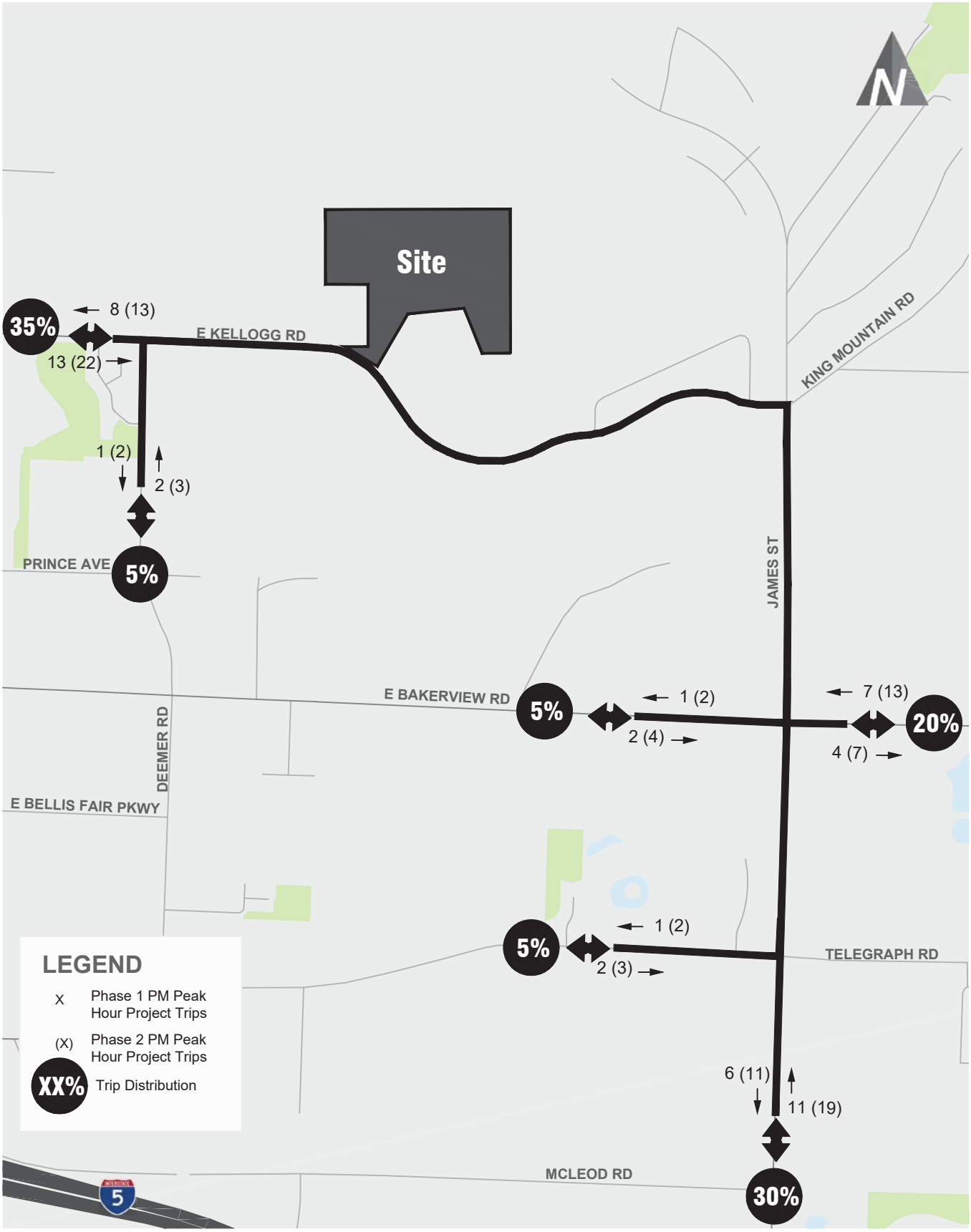
LEGEND

AWDT
PM ↔ PEAK — NEW DAILY TRIPS
NEW PM PEAK-HOUR TRIPS

(XX) — TRIP DISTRIBUTION %

FIGURE 2

PM PEAK-HOUR DEVELOPMENT TRIP DISTRIBUTION



Project Trip Distribution and Assignment

561 E Kellogg Housing

FIGURE 6

transpogroup

Mar 20, 2019 - 10:35am Francescal M:\18\1.18275.00 - 561 E Kellogg Housing\Graphics\DWG\1.18257.00_Graphics.dwg Layout: Distribution

Turning Movement Calculations

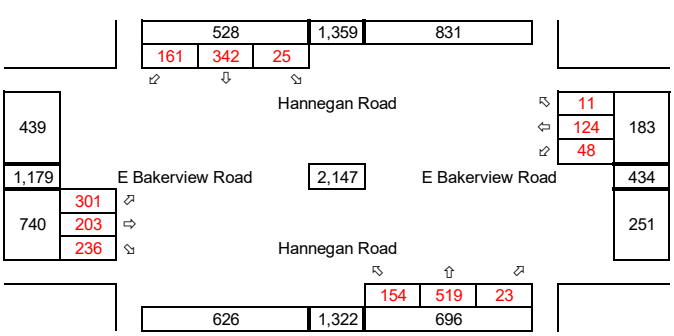
1 Bakerview Rd @ Hannegan Rd

Synchro ID: 1
Existing
Average Weekday
PM Peak Hour

Year: **2/24/2021**

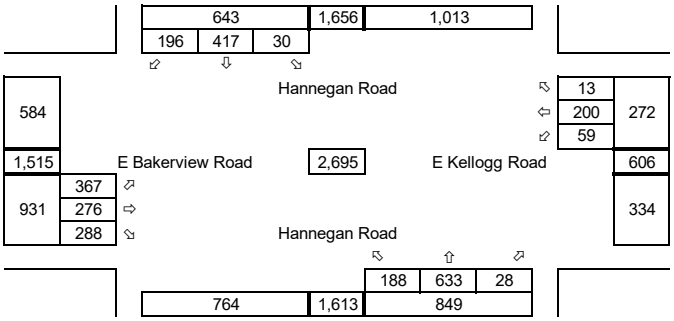
Data Source: **Idax**

Covid Adj **1.11**

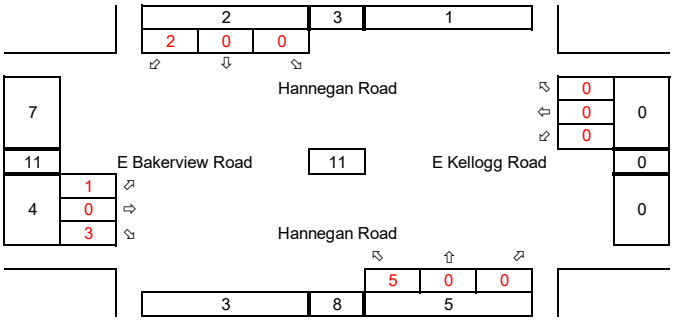


Future without Project
Average Weekday
PM Peak Hour

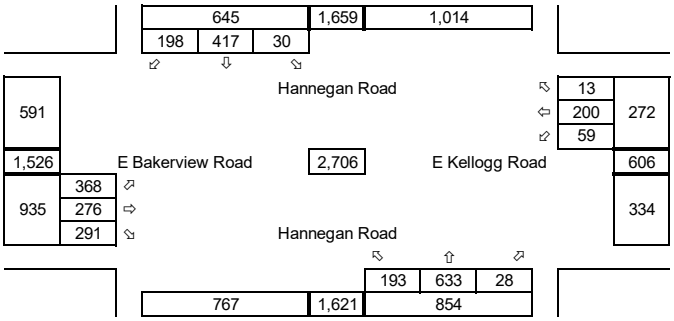
Year: 2031
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



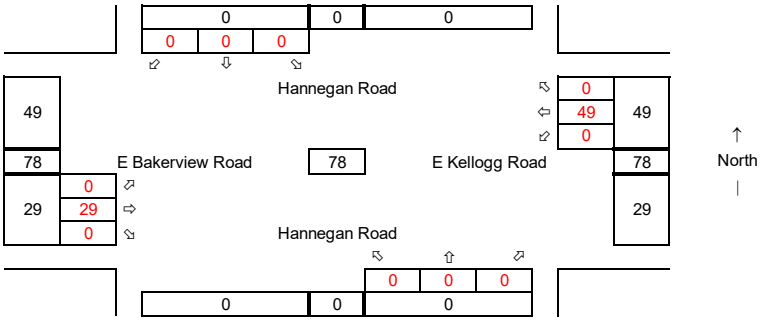
Total Project Trips
Average Weekday
PM Peak Hour



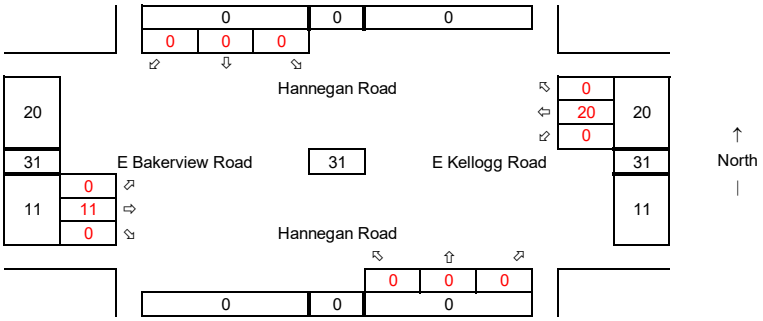
Future with Project
Average Weekday
PM Peak Hour



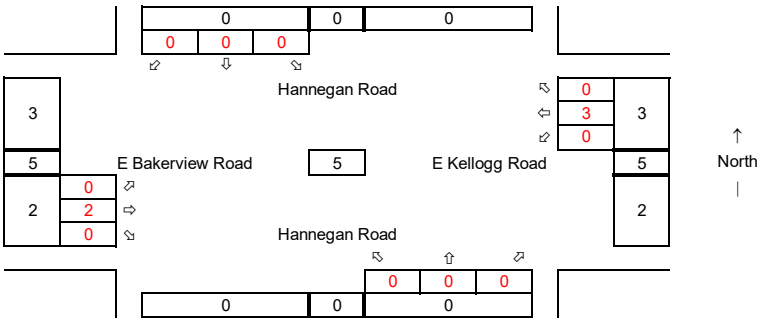
Total Pipeline Development
Average Weekday
PM Peak Hour



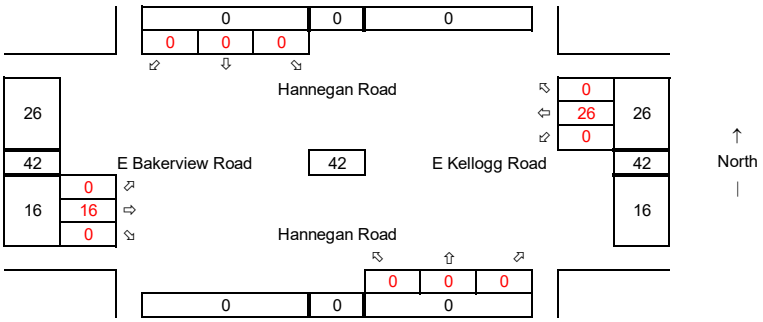
561 E Kellogg Housing
Average Weekday
PM Peak Hour



James St Subdivision
Average Weekday
PM Peak Hour



King Mountain Phase 2
Average Weekday
PM Peak Hour



2 Bakerview Rd @ Irongate Rd

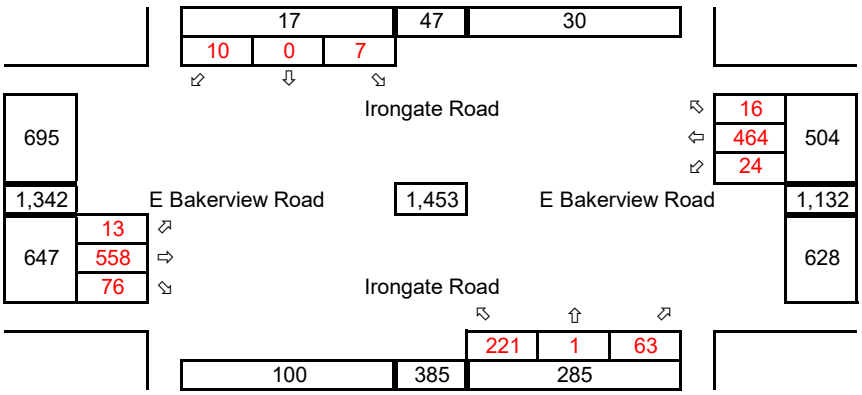
Synchro ID: 2

Existing
Average Weekday
PM Peak Hour

Year: **2/24/2021**

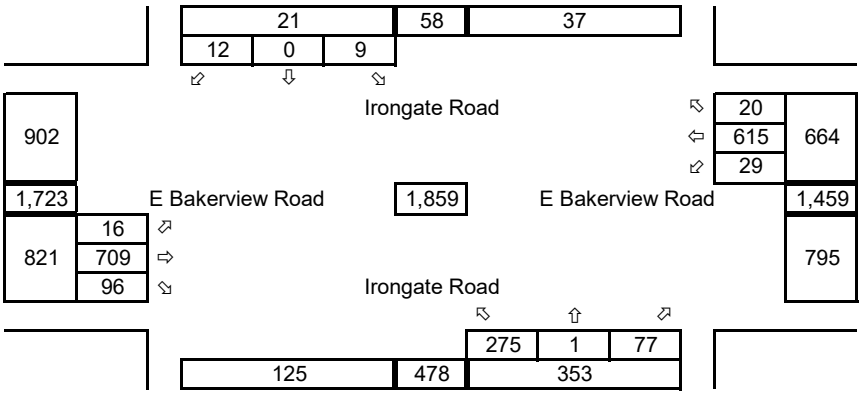
Data Source: **Idax**

Covid Adj **1.11**

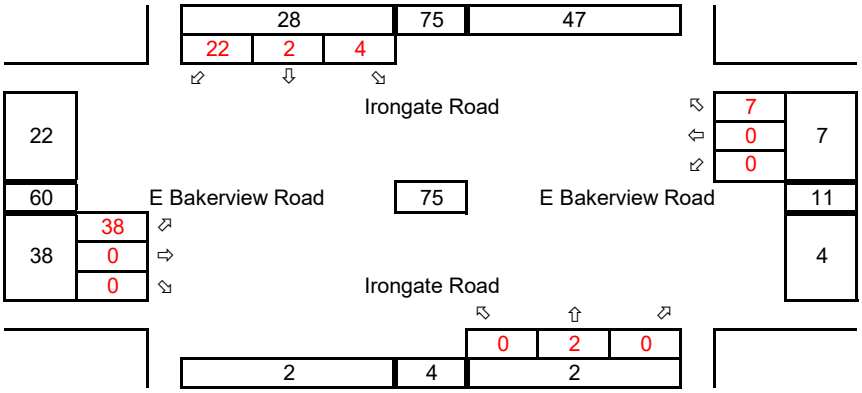


Future without Project
Average Weekday
PM Peak Hour

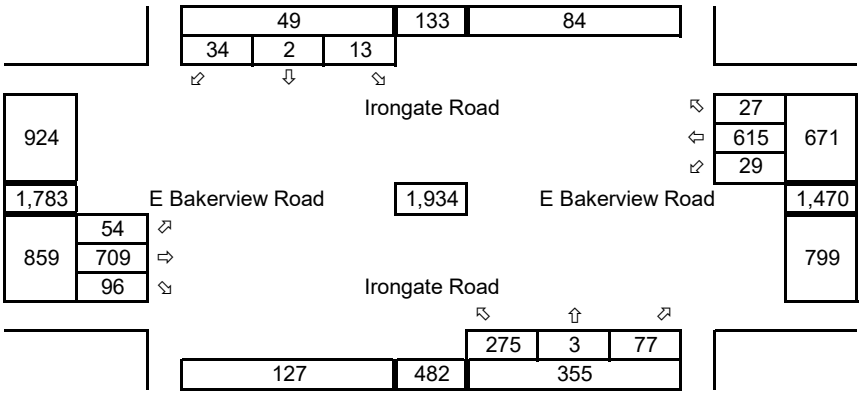
Year: 2031
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

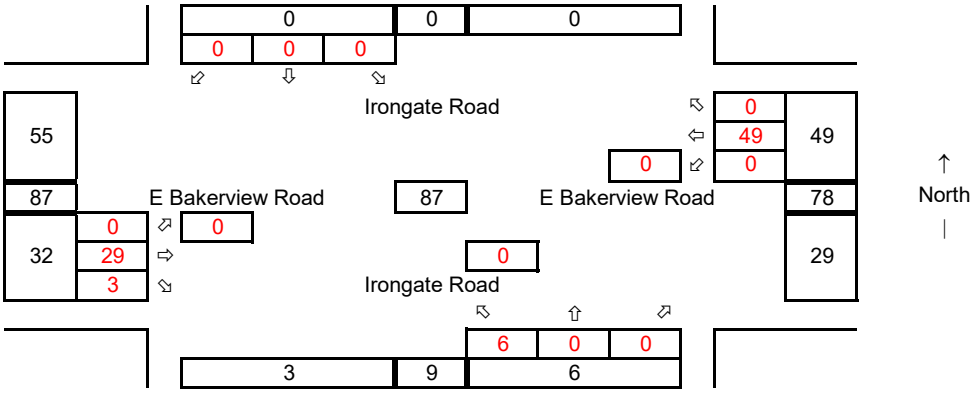


Future with Project
Average Weekday
PM Peak Hour

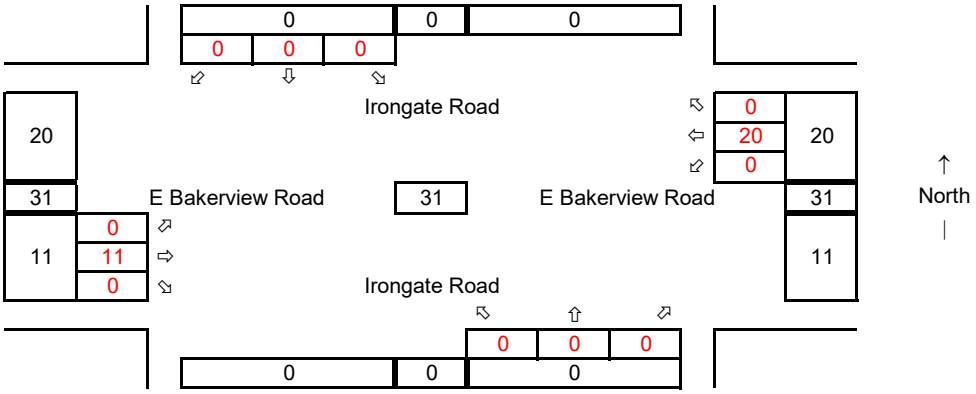


2 Bakerview Rd @ Irongate Rd

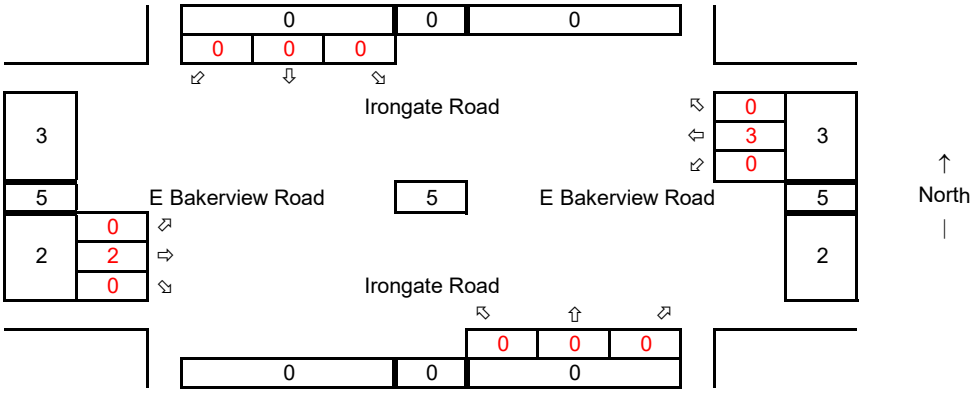
Total Pipeline Development
Average Weekday
PM Peak Hour



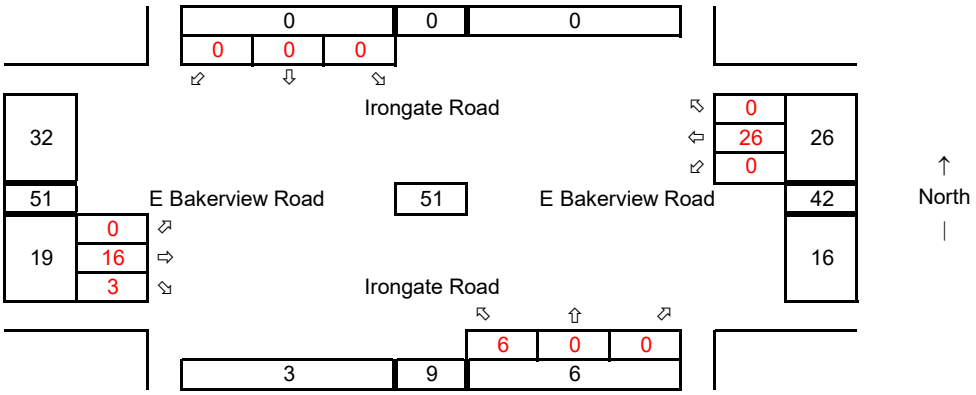
561 E Kellogg Housing
Average Weekday
PM Peak Hour



James St Subdivision
Average Weekday
PM Peak Hour



King Mountain Phase 2
Average Weekday
PM Peak Hour



3 Bakerview Rd @ James Rd

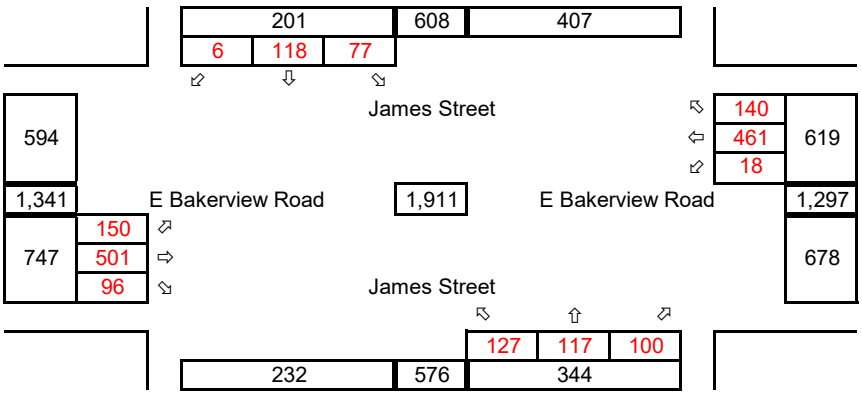
Synchro ID: 3

Existing
Average Weekday
PM Peak Hour

Year: **2/24/2021**

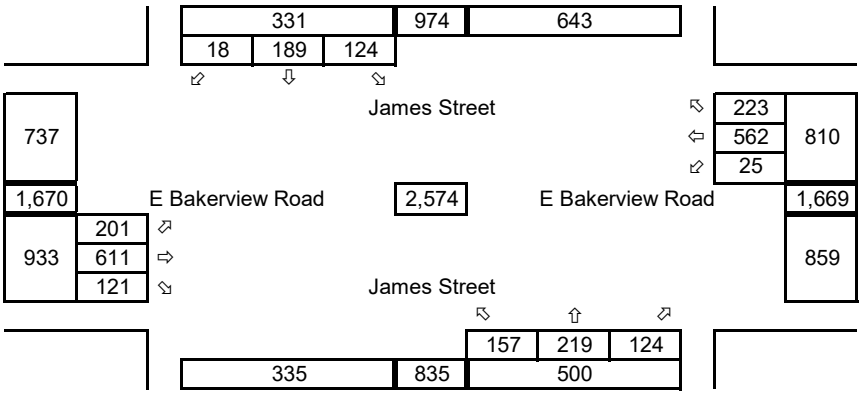
Data Source: **Idax**

Covid Adj **1.11**

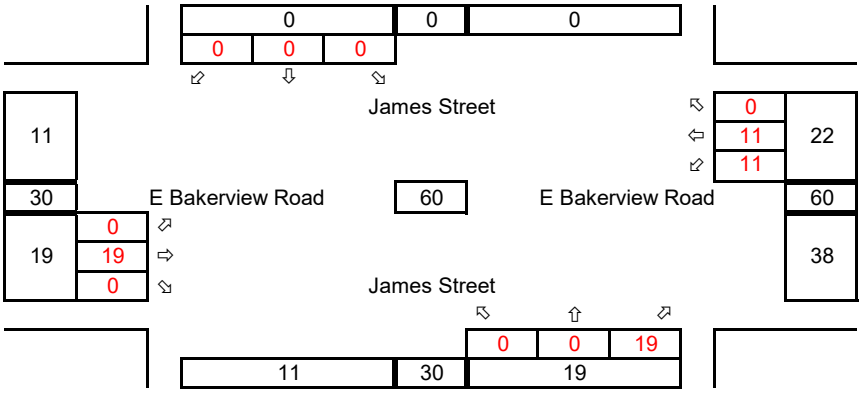


Future without Project
Average Weekday
PM Peak Hour

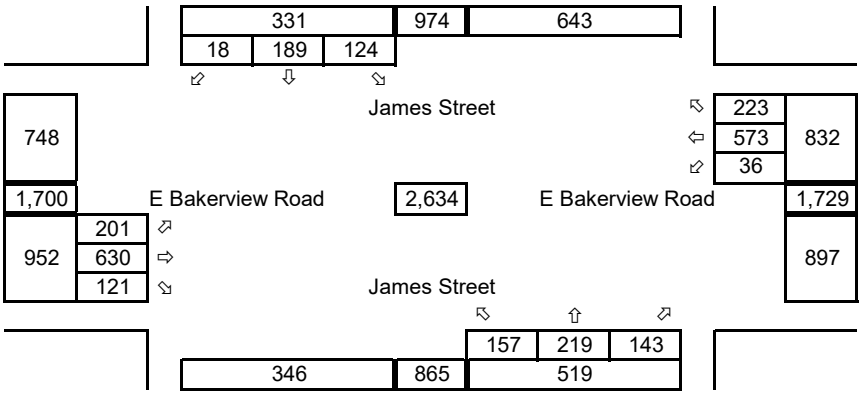
Year: 2031
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour



Future with Project
Average Weekday
PM Peak Hour



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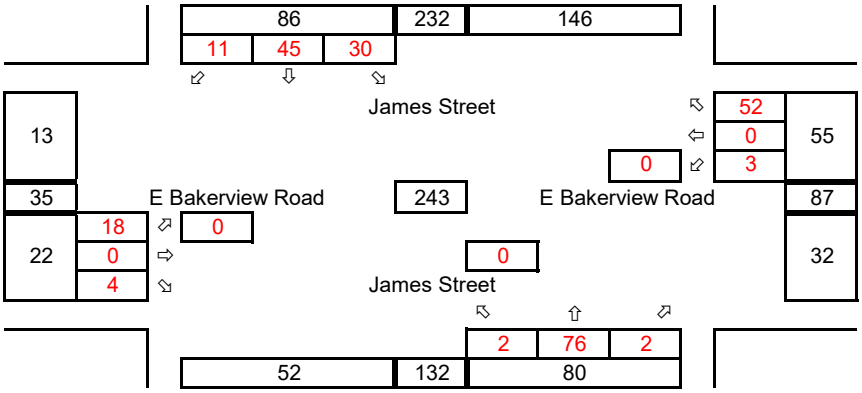
3 Bakerview Rd @ James Rd

Total Pipeline Development
Average Weekday
PM Peak Hour



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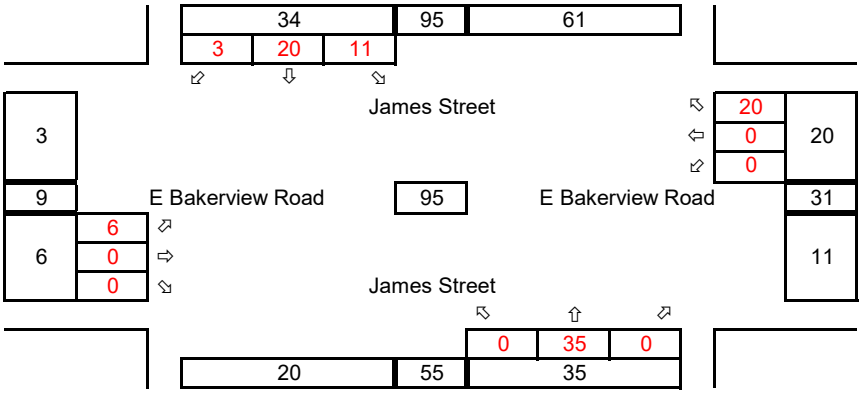
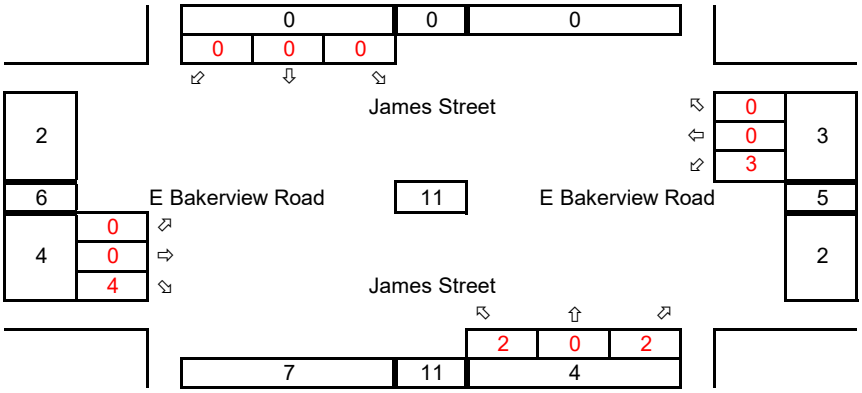
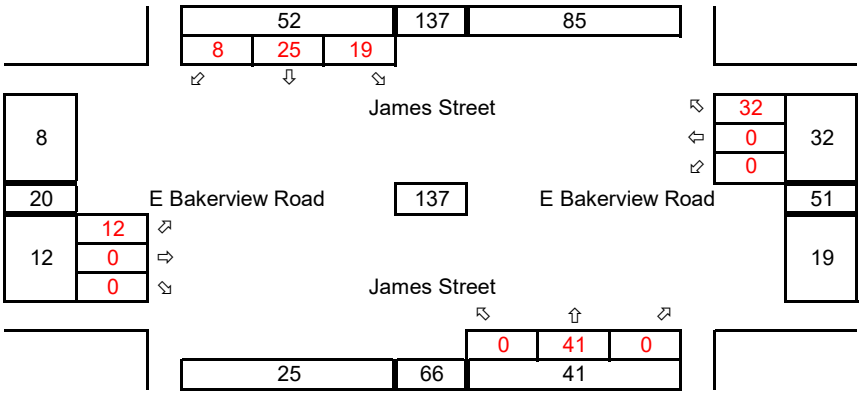
561 E Kellogg Housing
Average Weekday
PM Peak Hour



James St Subdivision
Average Weekday
PM Peak Hour



King Mountain Phase 2
Average Weekday
PM Peak Hour



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2 Bakerview Rd @ Irongate Rd

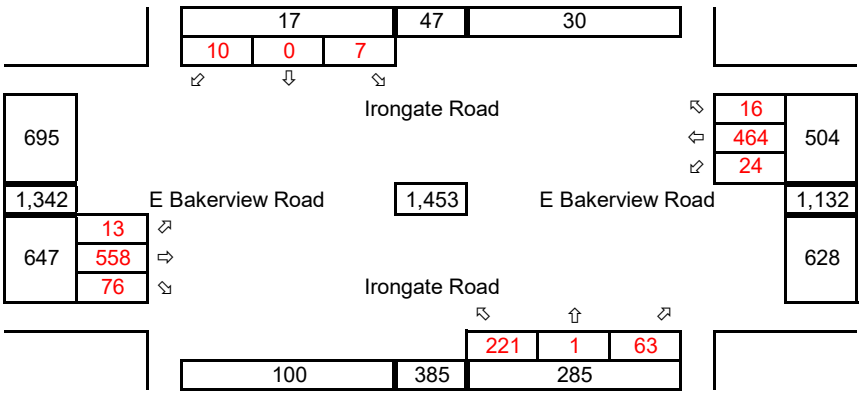
Synchro ID: 2

Existing
Average Weekday
PM Peak Hour

Year: **2/24/2021**

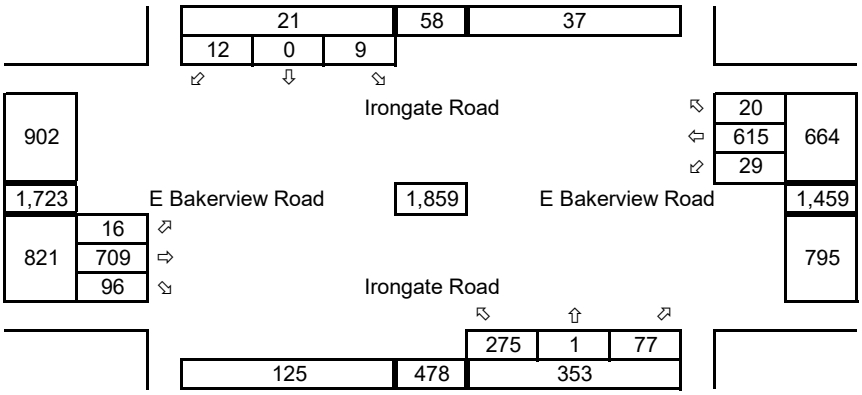
Data Source: **Idax**

Covid Adj **1.11**

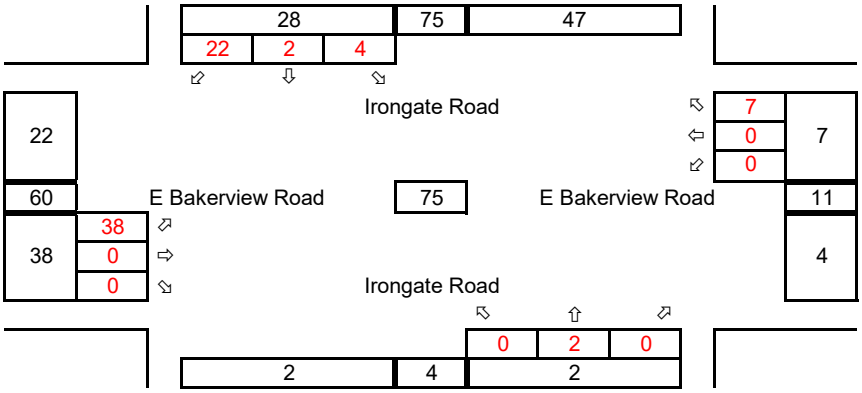


Future without Project
Average Weekday
PM Peak Hour

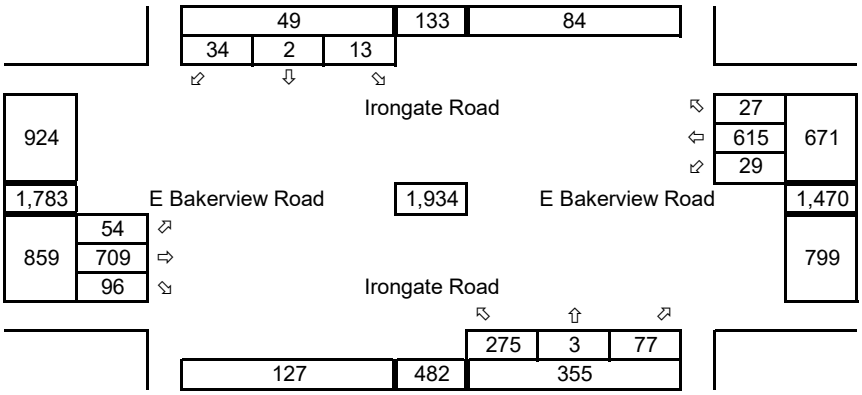
Year: 2031
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

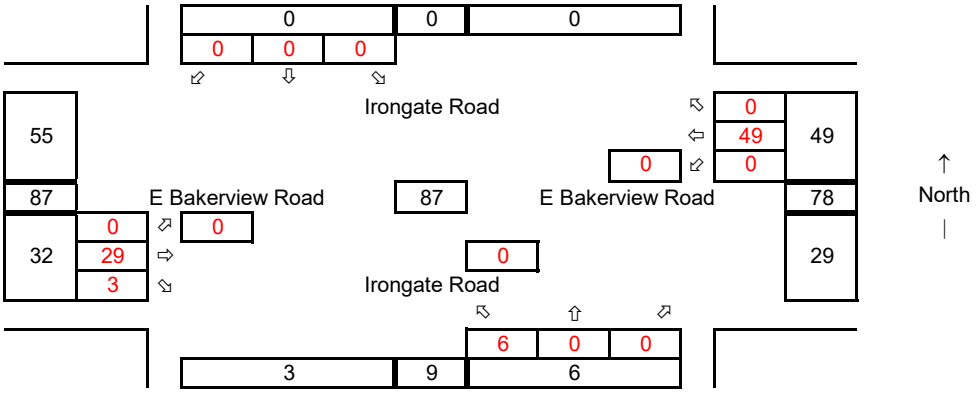


Future with Project
Average Weekday
PM Peak Hour

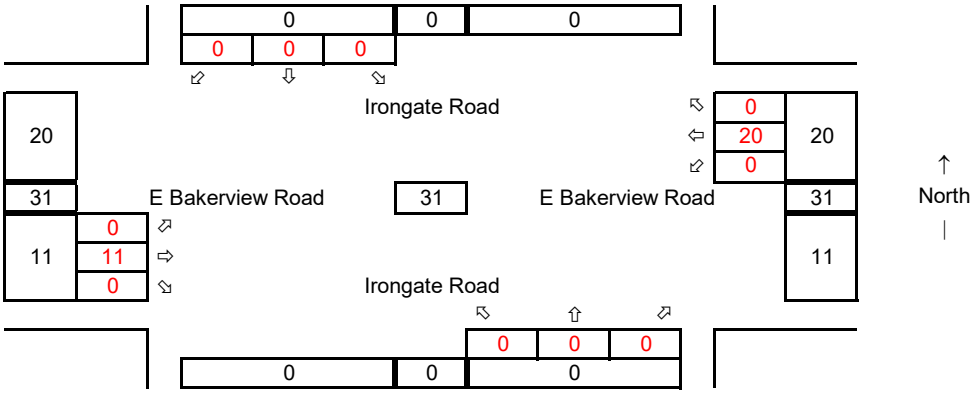


2 Bakerview Rd @ Irongate Rd

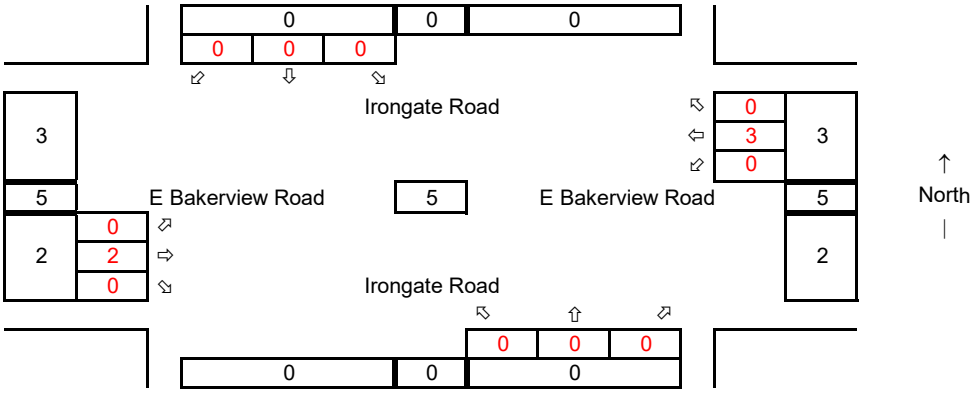
Total Pipeline Development
Average Weekday
PM Peak Hour



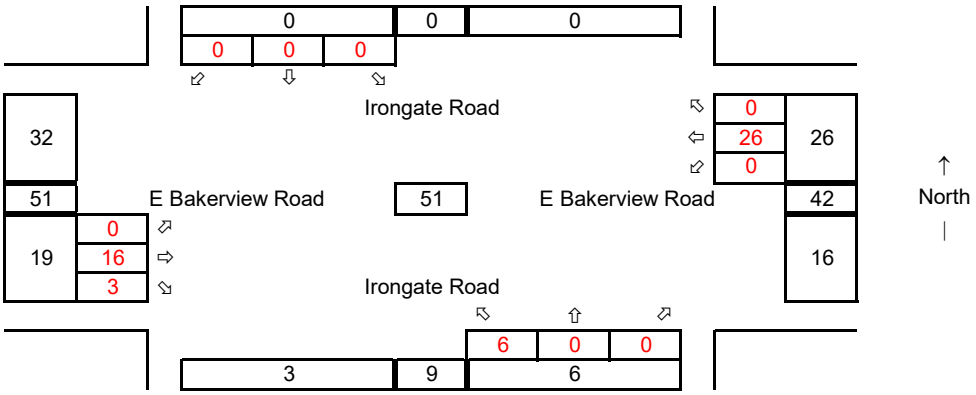
561 E Kellogg Housing
Average Weekday
PM Peak Hour



James St Subdivision
Average Weekday
PM Peak Hour



King Mountain Phase 2
Average Weekday
PM Peak Hour



3 Bakerview Rd @ James Rd

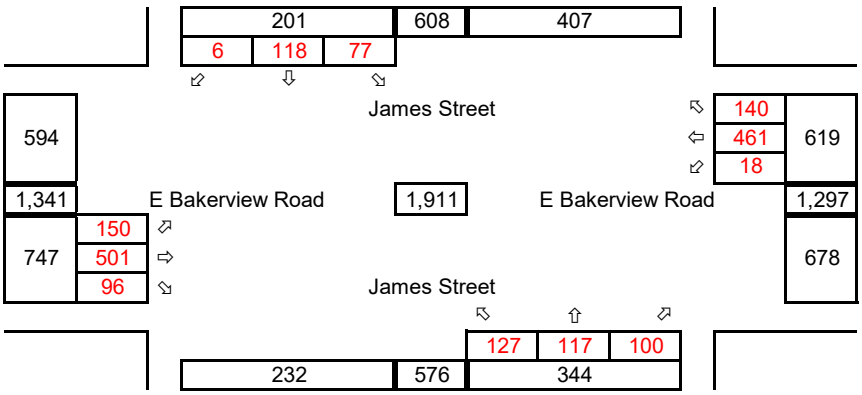
Synchro ID: 3

Existing
Average Weekday
PM Peak Hour

Year: **2/24/2021**

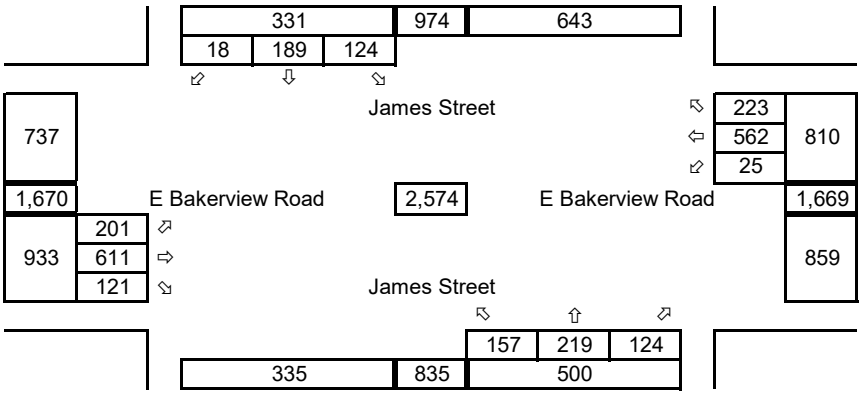
Data Source: **Idax**

Covid Adj **1.11**

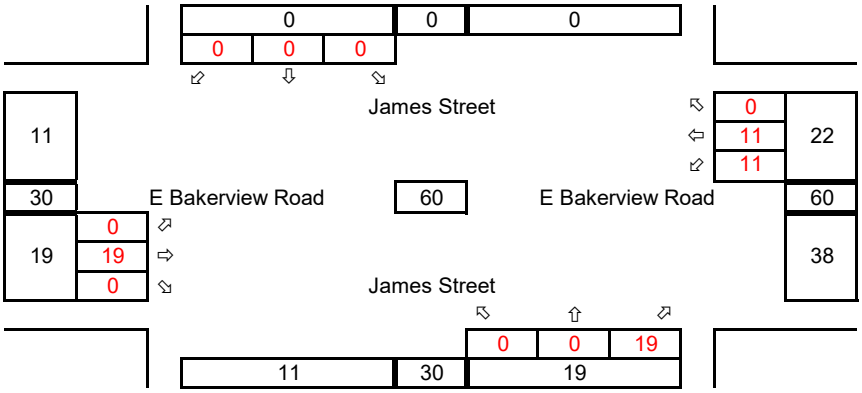


Future without Project
Average Weekday
PM Peak Hour

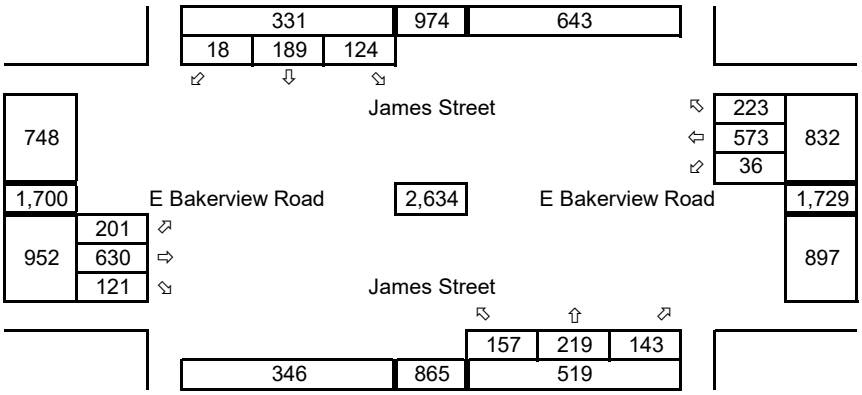
Year: 2031
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour



Future with Project
Average Weekday
PM Peak Hour



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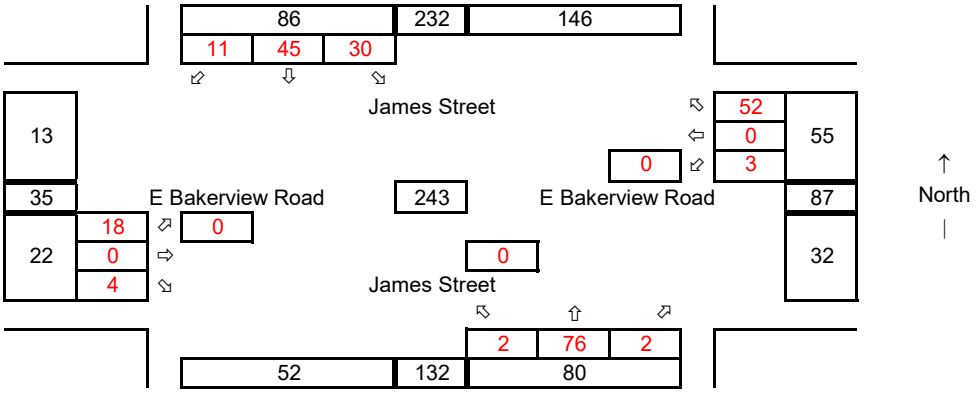
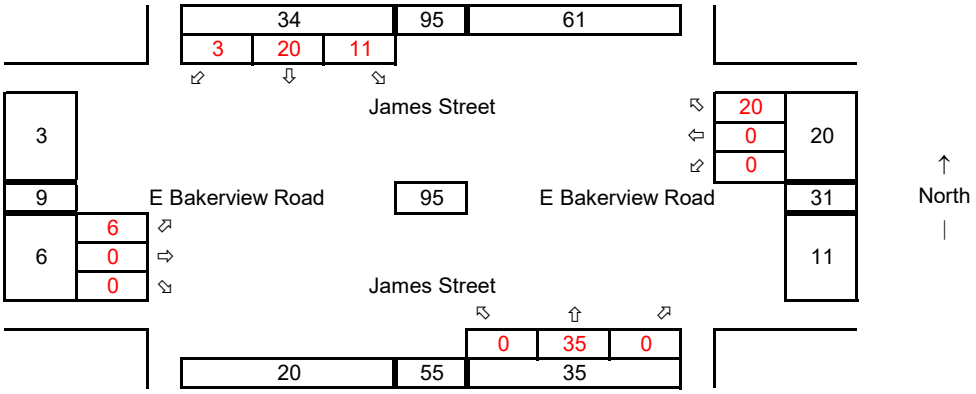
3 Bakerview Rd @ James Rd

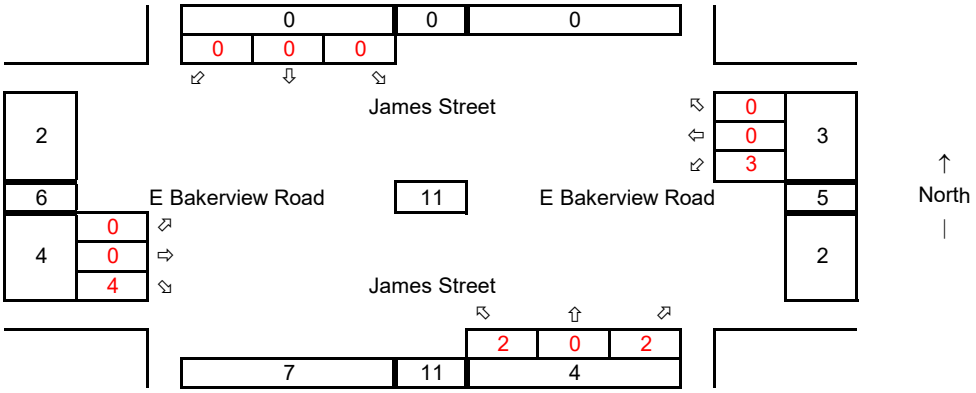
Total Pipeline Development
Average Weekday
PM Peak Hour



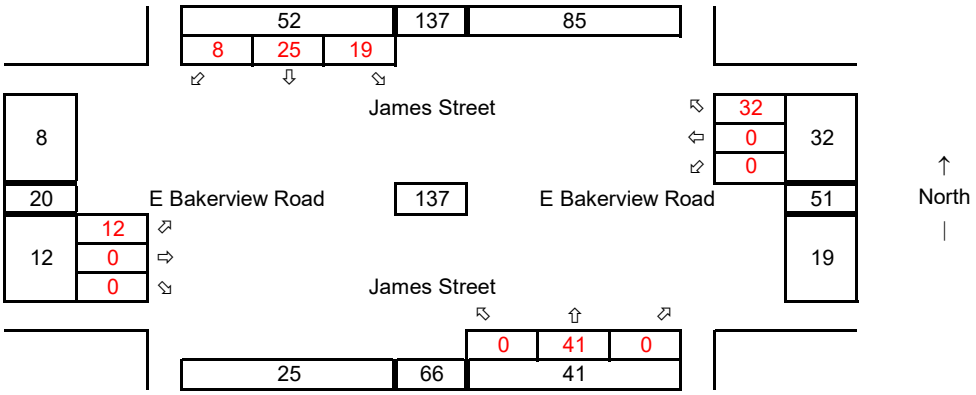
561 E Kellogg Housing
Average Weekday
PM Peak Hour



James St Subdivision
Average Weekday
PM Peak Hour



King Mountain Phase 2
Average Weekday
PM Peak Hour



2021 Existing LOS

HCM 6th Signalized Intersection Summary
1: Hannegan Rd & Bakerview Rd

Queen Mountain

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	203	236	48	124	11	154	519	23	25	342	161
Future Volume (veh/h)	301	203	236	48	124	11	154	519	23	25	342	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	324	218	254	52	133	12	166	558	25	27	368	173
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	4	4
Cap, veh/h	380	514	434	95	193	17	378	656	29	223	583	494
Arrive On Green	0.21	0.27	0.27	0.05	0.11	0.11	0.09	0.37	0.37	0.03	0.32	0.32
Sat Flow, veh/h	1781	1870	1579	1781	1689	152	1781	1776	80	1753	1841	1560
Grp Volume(v), veh/h	324	218	254	52	0	145	166	0	583	27	368	173
Grp Sat Flow(s),veh/h/ln	1781	1870	1579	1781	0	1841	1781	0	1856	1753	1841	1560
Q Serve(g_s), s	13.0	7.1	10.4	2.1	0.0	5.6	4.5	0.0	21.5	0.8	12.7	6.4
Cycle Q Clear(g_c), s	13.0	7.1	10.4	2.1	0.0	5.6	4.5	0.0	21.5	0.8	12.7	6.4
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	380	514	434	95	0	211	378	0	685	223	583	494
V/C Ratio(X)	0.85	0.42	0.58	0.55	0.00	0.69	0.44	0.00	0.85	0.12	0.63	0.35
Avail Cap(c_a), veh/h	597	627	530	597	0	864	700	0	1245	633	1234	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	22.2	23.4	34.4	0.0	31.7	15.6	0.0	21.6	18.1	21.8	19.6
Incr Delay (d2), s/veh	7.9	0.7	1.5	5.9	0.0	4.7	0.6	0.0	3.1	0.2	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.0	3.8	1.0	0.0	2.7	1.7	0.0	9.1	0.3	5.3	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	22.9	24.9	40.3	0.0	36.5	16.2	0.0	24.7	18.3	22.9	20.0
LnGrp LOS	D	C	C	D	A	D	B	A	C	B	C	C
Approach Vol, veh/h		796			197			749			568	
Approach Delay, s/veh		28.9			37.5			22.8			21.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	32.5	9.0	25.5	11.5	28.6	20.9	13.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	50.0	25.0	25.0	20.0	50.0	25.0	35.0
Max Q Clear Time (g_c+I1), s	2.8	23.5	4.1	12.4	6.5	14.7	15.0	7.6
Green Ext Time (p_c), s	0.0	4.0	0.1	2.1	0.3	2.9	0.9	0.9

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	558	76	24	464	16	221	1	63	7	0	10
Future Volume (veh/h)	13	558	76	24	464	16	221	1	63	7	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	14	594	81	26	494	17	235	1	67	7	0	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	1	1	1	2	2	2	1	1	1
Cap, veh/h	392	710	97	280	845	29	395	1	81	215	35	257
Arrive On Green	0.02	0.45	0.45	0.04	0.47	0.47	0.25	0.25	0.25	0.25	0.00	0.25
Sat Flow, veh/h	1739	1573	214	1795	1812	62	1126	6	321	508	139	1017
Grp Volume(v), veh/h	14	0	675	26	0	511	303	0	0	18	0	0
Grp Sat Flow(s),veh/h/ln	1739	0	1787	1795	0	1874	1453	0	0	1664	0	0
Q Serve(g_s), s	0.2	0.0	19.2	0.4	0.0	11.5	10.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	19.2	0.4	0.0	11.5	11.3	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.03	0.78		0.22	0.39		0.61
Lane Grp Cap(c), veh/h	392	0	807	280	0	874	478	0	0	507	0	0
V/C Ratio(X)	0.04	0.00	0.84	0.09	0.00	0.58	0.63	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	960	0	1396	840	0	1464	614	0	0	648	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	0.0	13.9	11.0	0.0	11.3	20.3	0.0	0.0	16.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.4	0.2	0.0	0.6	2.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.7	0.1	0.0	4.0	3.8	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	16.3	11.2	0.0	11.9	22.3	0.0	0.0	16.3	0.0	0.0
LnGrp LOS	A	A	B	B	A	B	C	A	A	B	A	A
Approach Vol, veh/h		689			537			303			18	
Approach Delay, s/veh		16.2			11.9			22.3			16.3	
Approach LOS		B			B			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	31.0		19.5	6.2	31.9		19.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	20.0	45.0		20.0	20.0	45.0		20.0				
Max Q Clear Time (g_c+I1), s	2.4	21.2		2.5	2.2	13.5		13.3				
Green Ext Time (p_c), s	0.0	4.8		0.0	0.0	3.5		1.3				

Intersection Summary

HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

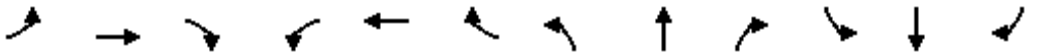
User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	501	96	18	461	140	127	117	100	77	118	6
Future Volume (veh/h)	150	501	96	18	461	140	127	117	100	77	118	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	516	99	19	475	144	131	121	103	79	122	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	2	2	2
Cap, veh/h	306	705	135	290	554	168	239	197	481	133	180	7
Arrive On Green	0.08	0.46	0.46	0.03	0.41	0.41	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	1525	293	1739	1345	408	546	646	1582	218	593	24
Grp Volume(v), veh/h	155	0	615	19	0	619	252	0	103	207	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1818	1739	0	1753	1192	0	1582	834	0	0
Q Serve(g_s), s	3.6	0.0	20.6	0.5	0.0	24.0	0.0	0.0	3.6	5.9	0.0	0.0
Cycle Q Clear(g_c), s	3.6	0.0	20.6	0.5	0.0	24.0	14.1	0.0	3.6	20.1	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.23	0.52		1.00	0.38		0.03
Lane Grp Cap(c), veh/h	306	0	841	290	0	722	436	0	481	320	0	0
V/C Ratio(X)	0.51	0.00	0.73	0.07	0.00	0.86	0.58	0.00	0.21	0.65	0.00	0.00
Avail Cap(c_a), veh/h	645	0	1410	709	0	937	681	0	741	467	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.4	0.0	16.3	13.9	0.0	20.0	22.6	0.0	19.4	25.9	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	1.2	0.1	0.0	7.2	1.2	0.0	0.2	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	7.8	0.2	0.0	10.2	3.8	0.0	1.3	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	0.0	17.6	14.0	0.0	27.2	23.8	0.0	19.6	28.1	0.0	0.0
LnGrp LOS	B	A	B	B	A	C	C	A	B	C	A	A
Approach Vol, veh/h		770			638			355			207	
Approach Delay, s/veh		17.4			26.8			22.6			28.1	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	40.1		27.7	10.8	36.3		27.7				
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0				
Max Green Setting (Gmax), s	20.0	58.0		30.0	20.0	40.0		35.0				
Max Q Clear Time (g_c+I1), s	2.5	22.6		22.1	5.6	26.0		16.1				
Green Ext Time (p_c), s	0.0	4.6		0.7	0.3	4.8		1.7				
Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									

2031 Baseline LOS

HCM 6th Signalized Intersection Summary
1: Hannegan Rd & Bakerview Rd

Queen Mountain



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	367	276	288	59	200	13	188	633	28	30	417	196
Future Volume (veh/h)	367	276	288	59	200	13	188	633	28	30	417	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	395	297	310	63	215	14	202	681	30	32	448	211
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	4	4
Cap, veh/h	425	641	541	83	261	17	329	720	32	147	643	545
Arrive On Green	0.24	0.34	0.34	0.05	0.15	0.15	0.09	0.41	0.41	0.03	0.35	0.35
Sat Flow, veh/h	1781	1870	1580	1781	1736	113	1781	1778	78	1753	1841	1560
Grp Volume(v), veh/h	395	297	310	63	0	229	202	0	711	32	448	211
Grp Sat Flow(s),veh/h/ln	1781	1870	1580	1781	0	1849	1781	0	1856	1753	1841	1560
Q Serve(g_s), s	25.1	14.4	18.6	4.0	0.0	13.9	8.1	0.0	42.8	1.3	24.2	11.8
Cycle Q Clear(g_c), s	25.1	14.4	18.6	4.0	0.0	13.9	8.1	0.0	42.8	1.3	24.2	11.8
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	425	641	541	83	0	278	329	0	752	147	643	545
V/C Ratio(X)	0.93	0.46	0.57	0.76	0.00	0.82	0.61	0.00	0.95	0.22	0.70	0.39
Avail Cap(c_a), veh/h	461	641	541	384	0	479	478	0	801	391	795	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	29.8	31.1	54.6	0.0	47.7	23.4	0.0	33.2	28.4	32.4	28.4
Incr Delay (d2), s/veh	24.8	0.6	1.6	15.8	0.0	7.2	1.4	0.0	19.2	0.5	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	6.5	7.2	2.2	0.0	6.9	3.4	0.0	22.5	0.6	10.9	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	30.4	32.8	70.4	0.0	54.9	24.8	0.0	52.4	29.0	34.4	28.8
LnGrp LOS	E	C	C	E	A	D	C	A	D	C	C	C
Approach Vol, veh/h		1002			292			913			691	
Approach Delay, s/veh		46.0			58.2			46.3			32.5	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	51.9	10.4	44.7	15.3	45.5	32.6	22.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	50.0	25.0	25.0	20.0	50.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	3.3	44.8	6.0	20.6	10.1	26.2	27.1	15.9
Green Ext Time (p_c), s	0.0	2.1	0.1	1.4	0.3	3.5	0.5	1.2

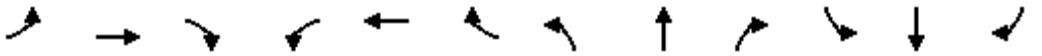
Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	709	96	29	615	20	275	1	77	9	0	12
Future Volume (veh/h)	16	709	96	29	615	20	275	1	77	9	0	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	17	754	102	31	654	21	293	1	82	10	0	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	1	1	1	2	2	2	1	1	1
Cap, veh/h	309	789	107	182	934	30	393	1	88	241	24	261
Arrive On Green	0.02	0.50	0.50	0.04	0.51	0.51	0.28	0.28	0.28	0.28	0.00	0.28
Sat Flow, veh/h	1739	1574	213	1795	1816	58	1131	4	316	638	85	940
Grp Volume(v), veh/h	17	0	856	31	0	675	376	0	0	23	0	0
Grp Sat Flow(s),veh/h/ln	1739	0	1787	1795	0	1875	1451	0	0	1663	0	0
Q Serve(g_s), s	0.4	0.0	37.4	0.7	0.0	22.3	19.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	37.4	0.7	0.0	22.3	20.6	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.03	0.78		0.22	0.43		0.57
Lane Grp Cap(c), veh/h	309	0	895	182	0	965	482	0	0	526	0	0
V/C Ratio(X)	0.06	0.00	0.96	0.17	0.00	0.70	0.78	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	694	0	920	556	0	965	487	0	0	531	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	0.0	19.5	17.9	0.0	15.0	28.6	0.0	0.0	21.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	19.6	0.5	0.0	2.3	8.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	18.4	0.3	0.0	9.0	8.1	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	39.1	18.4	0.0	17.3	36.9	0.0	0.0	21.6	0.0	0.0
LnGrp LOS	B	A	D	B	A	B	D	A	A	C	A	A
Approach Vol, veh/h		873			706			376			23	
Approach Delay, s/veh		38.6			17.3			36.9			21.6	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	45.9		27.7	6.9	47.0		27.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	20.0	42.0		23.0	20.0	42.0		23.0				
Max Q Clear Time (g_c+I1), s	2.7	39.4		2.8	2.4	24.3		22.6				
Green Ext Time (p_c), s	0.0	1.4		0.1	0.0	4.3		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	611	121	25	562	223	157	219	124	124	189	18
Future Volume (veh/h)	201	611	121	25	562	223	157	219	124	124	189	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	630	125	26	579	230	162	226	128	128	195	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	2	2	2
Cap, veh/h	243	684	136	164	477	190	217	246	585	67	85	6
Arrive On Green	0.10	0.45	0.45	0.03	0.38	0.38	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	1516	301	1739	1243	494	454	666	1583	52	231	17
Grp Volume(v), veh/h	207	0	755	26	0	809	388	0	128	342	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1816	1739	0	1737	1120	0	1583	300	0	0
Q Serve(g_s), s	7.8	0.0	40.7	0.9	0.0	40.0	0.0	0.0	5.8	3.8	0.0	0.0
Cycle Q Clear(g_c), s	7.8	0.0	40.7	0.9	0.0	40.0	34.7	0.0	5.8	38.5	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.28	0.42		1.00	0.37		0.06
Lane Grp Cap(c), veh/h	243	0	819	164	0	667	463	0	585	158	0	0
V/C Ratio(X)	0.85	0.00	0.92	0.16	0.00	1.21	0.84	0.00	0.22	2.16	0.00	0.00
Avail Cap(c_a), veh/h	411	0	950	445	0	667	463	0	585	158	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.3	0.0	26.9	23.8	0.0	32.1	31.4	0.0	22.5	37.6	0.0	0.0
Incr Delay (d2), s/veh	8.4	0.0	12.8	0.4	0.0	109.2	12.8	0.0	0.2	542.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	19.4	0.4	0.0	36.2	10.6	0.0	2.1	27.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	0.0	39.7	24.2	0.0	141.3	44.2	0.0	22.7	580.5	0.0	0.0
LnGrp LOS	D	A	D	C	A	F	D	A	C	F	A	A
Approach Vol, veh/h		962			835			516			342	
Approach Delay, s/veh		38.8			137.7			38.9			580.5	
Approach LOS		D			F			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	52.5		43.5	15.2	45.5		43.5				
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0				
Max Green Setting (Gmax), s	20.0	54.5		38.5	20.0	40.0		38.5				
Max Q Clear Time (g_c+I1), s	2.9	42.7		40.5	9.8	42.0		36.7				
Green Ext Time (p_c), s	0.0	4.1		0.0	0.4	0.0		0.5				

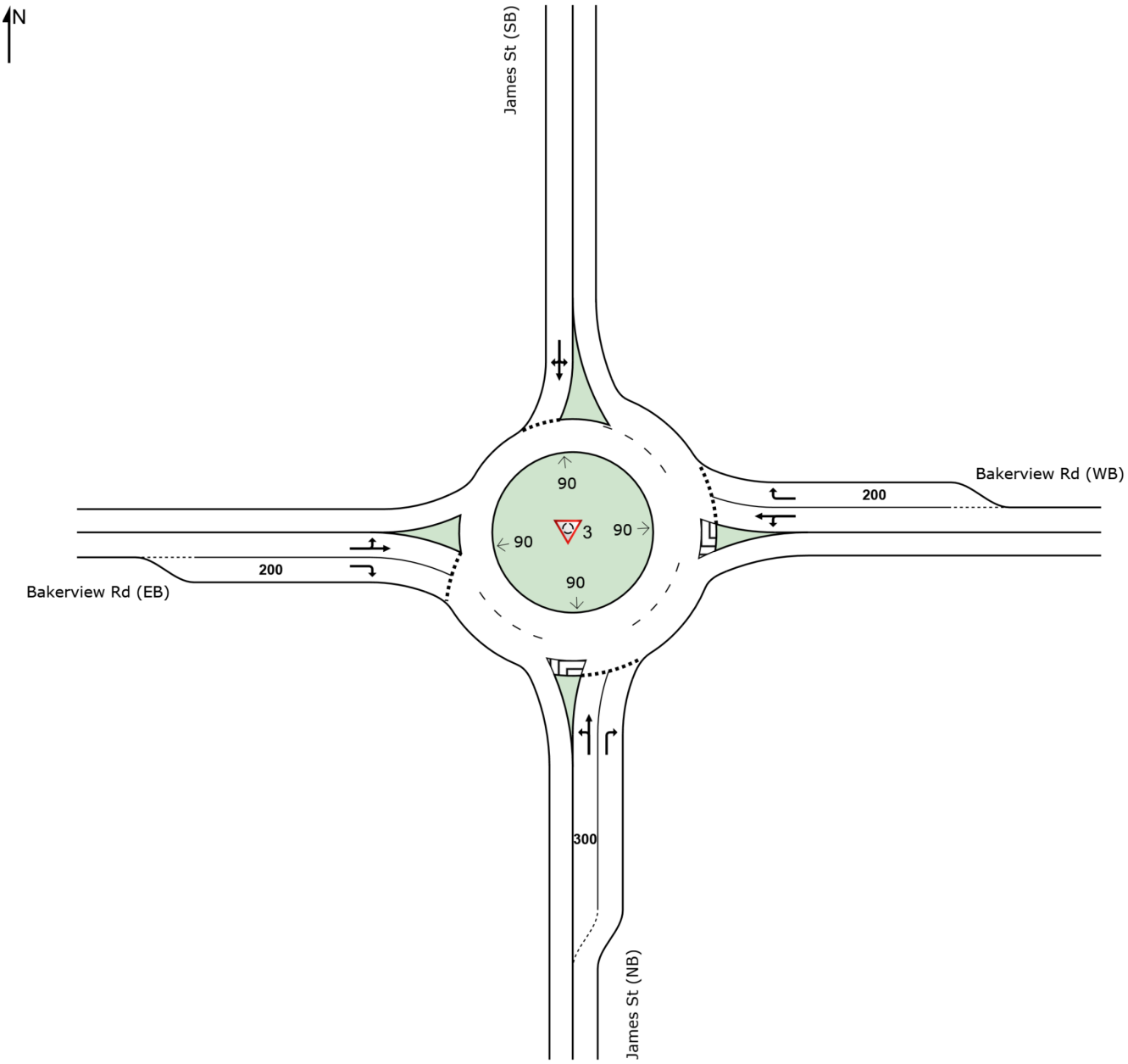
Intersection Summary	
HCM 6th Ctrl Delay	139.7
HCM 6th LOS	F

SITE LAYOUT

Site: 3 [2031 Baseline (Site Folder: Bakerview Rd at James St)]

Bakerview Rd at James St
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 3 [2031 Baseline (Site Folder: Bakerview Rd at James St)]

Bakerview Rd at James St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: James St (NB)														
3	L2	157	2.0	162	2.0	0.546	19.4	LOS B	6.0	151.2	1.00	1.02	1.22	31.7
8	T1	219	2.0	226	2.0	0.546	14.0	LOS B	6.0	151.2	1.00	1.02	1.22	31.6
18	R2	124	2.0	128	2.0	0.249	11.7	LOS B	1.8	45.4	0.92	0.90	0.92	32.5
Approach		500	2.0	515	2.0	0.546	15.1	LOS B	6.0	151.2	0.98	0.99	1.15	31.8
East: Bakerview Rd (WB)														
1	L2	25	5.0	26	5.0	0.566	14.1	LOS B	5.6	146.0	0.87	0.85	0.97	34.7
6	T1	562	5.0	579	5.0	0.566	8.4	LOS A	5.6	146.0	0.87	0.85	0.97	34.7
16	R2	223	5.0	230	5.0	0.295	7.9	LOS A	1.9	49.9	0.74	0.78	0.74	34.5
Approach		810	5.0	835	5.0	0.566	8.4	LOS A	5.6	146.0	0.83	0.83	0.91	34.6
North: James St (SB)														
7	L2	124	2.0	128	2.0	0.482	16.0	LOS B	4.0	102.7	0.91	0.96	1.02	33.4
4	T1	189	2.0	195	2.0	0.482	10.3	LOS B	4.0	102.7	0.91	0.96	1.02	33.4
14	R2	18	2.0	19	2.0	0.482	10.1	LOS B	4.0	102.7	0.91	0.96	1.02	32.5
Approach		331	2.0	341	2.0	0.482	12.4	LOS B	4.0	102.7	0.91	0.96	1.02	33.4
West: Bakerview Rd (EB)														
5	L2	201	2.0	207	2.0	0.633	12.1	LOS B	6.6	167.7	0.77	0.68	0.81	34.6
2	T1	611	2.0	630	2.0	0.633	6.7	LOS A	6.6	167.7	0.77	0.68	0.81	34.6
12	R2	121	2.0	125	2.0	0.137	6.1	LOS A	0.8	19.8	0.55	0.62	0.55	35.2
Approach		933	2.0	962	2.0	0.633	7.8	LOS A	6.6	167.7	0.74	0.67	0.77	34.7
All Vehicles		2574	2.9	2654	2.9	0.633	10.0	LOS B	6.6	167.7	0.84	0.82	0.92	33.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

2031 Future with Development LOS

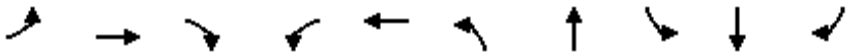
HCM 6th Signalized Intersection Summary
1: Hannegan Rd & Bakerview Rd

Queen Mountain

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	368	276	291	59	200	13	193	633	28	30	417	198
Future Volume (veh/h)	368	276	291	59	200	13	193	633	28	30	417	198
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	396	297	313	63	215	14	208	681	30	32	448	213
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	4	4
Cap, veh/h	425	641	542	83	261	17	331	720	32	146	638	541
Arrive On Green	0.24	0.34	0.34	0.05	0.15	0.15	0.09	0.40	0.40	0.03	0.35	0.35
Sat Flow, veh/h	1781	1870	1580	1781	1736	113	1781	1778	78	1753	1841	1560
Grp Volume(v), veh/h	396	297	313	63	0	229	208	0	711	32	448	213
Grp Sat Flow(s),veh/h/ln	1781	1870	1580	1781	0	1849	1781	0	1856	1753	1841	1560
Q Serve(g_s), s	25.2	14.4	18.8	4.1	0.0	13.9	8.3	0.0	42.8	1.3	24.4	12.0
Cycle Q Clear(g_c), s	25.2	14.4	18.8	4.1	0.0	13.9	8.3	0.0	42.8	1.3	24.4	12.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	425	641	542	83	0	278	331	0	752	146	638	541
V/C Ratio(X)	0.93	0.46	0.58	0.76	0.00	0.82	0.63	0.00	0.95	0.22	0.70	0.39
Avail Cap(c_a), veh/h	461	641	542	384	0	478	475	0	800	390	793	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	29.8	31.2	54.7	0.0	47.8	23.6	0.0	33.3	28.6	32.7	28.7
Incr Delay (d2), s/veh	25.0	0.6	1.7	15.8	0.0	7.2	1.5	0.0	19.3	0.6	2.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	6.5	7.3	2.2	0.0	6.9	3.5	0.0	22.5	0.6	11.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	30.4	32.9	70.5	0.0	55.0	25.0	0.0	52.6	29.1	34.8	29.1
LnGrp LOS	E	C	C	E	A	D	C	A	D	C	C	C
Approach Vol, veh/h		1006			292			919			693	
Approach Delay, s/veh		46.1			58.3			46.3			32.8	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	52.0	10.4	44.8	15.6	45.2	32.7	22.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	50.0	25.0	25.0	20.0	50.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	3.3	44.8	6.1	20.8	10.3	26.4	27.2	15.9
Green Ext Time (p_c), s	0.0	2.1	0.1	1.4	0.3	3.5	0.5	1.2

Intersection Summary	
HCM 6th Ctrl Delay	44.2
HCM 6th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	396	297	313	63	229	208	711	32	448	213
v/c Ratio	0.93	0.46	0.44	0.43	0.74	0.62	0.91	0.22	0.76	0.36
Control Delay	79.0	38.7	9.6	68.0	66.2	28.8	52.8	23.4	49.6	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.0	38.7	9.6	68.0	66.2	28.8	52.8	23.4	49.6	15.6
Queue Length 50th (ft)	324	198	28	50	180	99	570	14	327	48
Queue Length 95th (ft)	#655	343	122	109	300	168	#913	35	523	129
Internal Link Dist (ft)		2498			530		816		2181	
Turn Bay Length (ft)	235		175	180		255		200		165
Base Capacity (vph)	424	641	704	353	443	401	782	329	729	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.46	0.44	0.18	0.52	0.52	0.91	0.10	0.61	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	709	96	29	615	27	275	3	77	13	2	34
Future Volume (veh/h)	54	709	96	29	615	27	275	3	77	13	2	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	57	754	102	31	654	29	293	3	82	14	2	36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	1	1	1	2	2	2	1	1	1
Cap, veh/h	319	788	107	181	867	38	391	3	88	155	47	331
Arrive On Green	0.05	0.50	0.50	0.04	0.48	0.48	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1739	1574	213	1795	1791	79	1121	11	314	357	170	1185
Grp Volume(v), veh/h	57	0	856	31	0	683	378	0	0	52	0	0
Grp Sat Flow(s),veh/h/ln	1739	0	1787	1795	0	1871	1446	0	0	1712	0	0
Q Serve(g_s), s	1.3	0.0	37.6	0.7	0.0	24.3	18.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	37.6	0.7	0.0	24.3	20.8	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.04	0.78		0.22	0.27		0.69
Lane Grp Cap(c), veh/h	319	0	894	181	0	906	482	0	0	534	0	0
V/C Ratio(X)	0.18	0.00	0.96	0.17	0.00	0.75	0.78	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	652	0	917	553	0	960	484	0	0	536	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.0	0.0	19.6	18.0	0.0	17.2	28.5	0.0	0.0	21.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	19.9	0.5	0.0	3.2	8.7	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	18.5	0.3	0.0	10.1	8.2	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	0.0	39.5	18.5	0.0	20.4	37.2	0.0	0.0	22.1	0.0	0.0
LnGrp LOS	B	A	D	B	A	C	D	A	A	C	A	A
Approach Vol, veh/h		913			714			378			52	
Approach Delay, s/veh		37.8			20.3			37.2			22.1	
Approach LOS		D			C			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	46.0		27.9	9.4	44.6		27.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	20.0	42.0		23.0	20.0	42.0		23.0				
Max Q Clear Time (g_c+I1), s	2.7	39.6		3.9	3.3	26.3		22.8				
Green Ext Time (p_c), s	0.0	1.4		0.3	0.1	4.1		0.1				

Intersection Summary

HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	57	856	31	683	378	52
v/c Ratio	0.19	0.93	0.14	0.76	0.98	0.11
Control Delay	8.2	39.0	8.0	24.6	74.0	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	39.0	8.0	24.6	74.0	12.7
Queue Length 50th (ft)	11	437	6	287	~219	7
Queue Length 95th (ft)	25	#721	16	441	#400	34
Internal Link Dist (ft)		2538		2498	704	655
Turn Bay Length (ft)	200		85			
Base Capacity (vph)	537	918	501	960	385	458
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.93	0.06	0.71	0.98	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

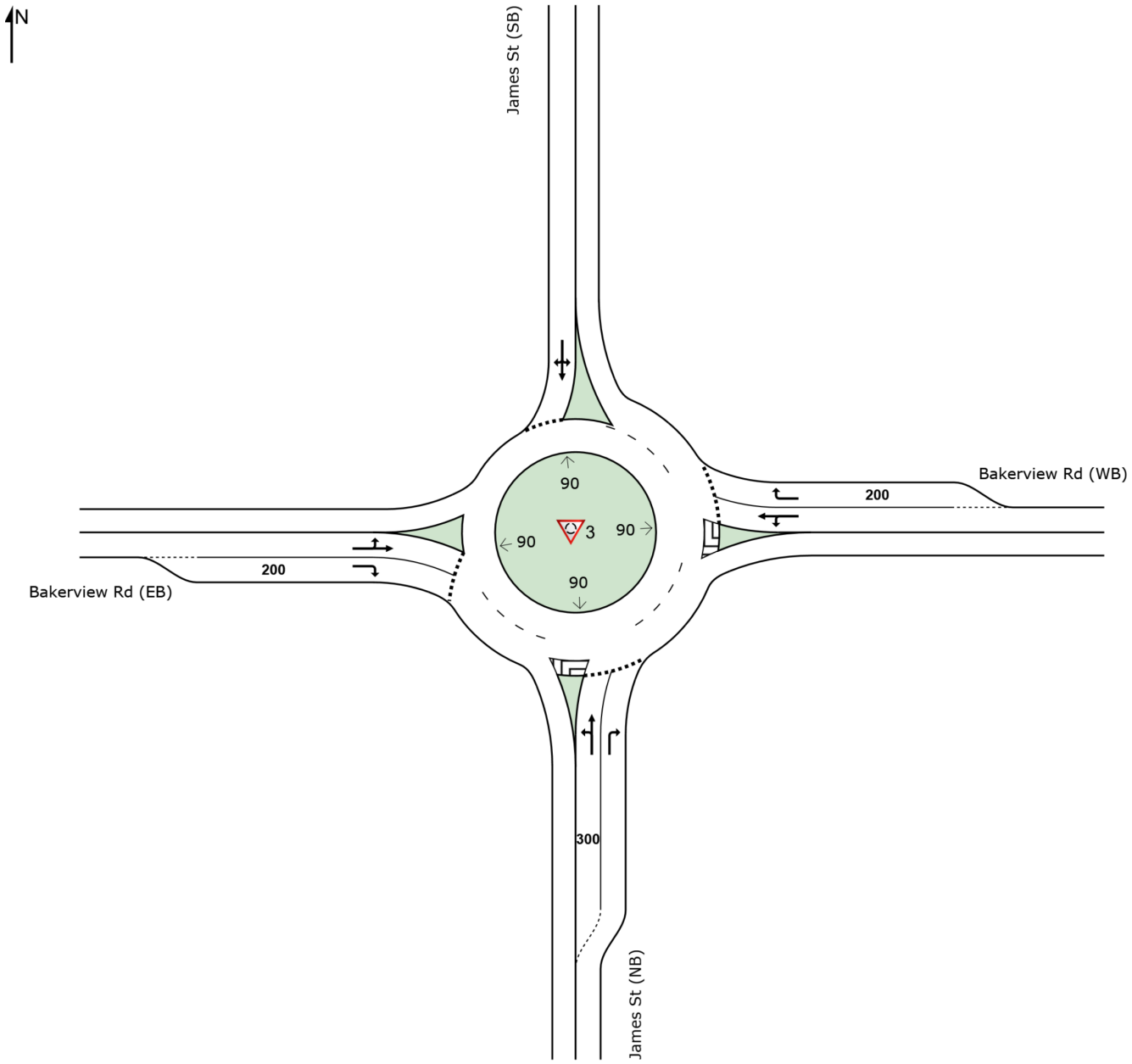
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	630	121	36	573	223	157	219	143	124	189	18
Future Volume (veh/h)	201	630	121	36	573	223	157	219	143	124	189	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	649	125	37	591	230	162	226	147	128	195	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	2	2	2
Cap, veh/h	242	696	134	169	496	193	212	239	571	57	70	5
Arrive On Green	0.10	0.46	0.46	0.04	0.40	0.40	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1781	1524	294	1739	1251	487	456	662	1583	31	195	13
Grp Volume(v), veh/h	207	0	774	37	0	821	388	0	147	342	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1818	1739	0	1738	1117	0	1583	239	0	0
Q Serve(g_s), s	8.1	0.0	43.0	1.3	0.0	42.3	0.0	0.0	7.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	43.0	1.3	0.0	42.3	36.3	0.0	7.0	38.5	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.28	0.42		1.00	0.37		0.06
Lane Grp Cap(c), veh/h	242	0	830	169	0	689	451	0	571	133	0	0
V/C Ratio(X)	0.86	0.00	0.93	0.22	0.00	1.19	0.86	0.00	0.26	2.58	0.00	0.00
Avail Cap(c_a), veh/h	401	0	928	430	0	689	451	0	571	133	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.8	0.0	27.4	24.1	0.0	32.2	33.2	0.0	24.0	37.4	0.0	0.0
Incr Delay (d2), s/veh	9.3	0.0	14.9	0.6	0.0	100.5	15.4	0.0	0.2	733.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	21.0	0.5	0.0	36.1	11.3	0.0	2.6	30.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	0.0	42.3	24.8	0.0	132.7	48.7	0.0	24.3	770.3	0.0	0.0
LnGrp LOS	D	A	D	C	A	F	D	A	C	F	A	A
Approach Vol, veh/h		981			858			535			342	
Approach Delay, s/veh		41.4			128.1			42.0			770.3	
Approach LOS		D			F			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	54.2		43.5	15.5	47.8		43.5				
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0				
Max Green Setting (Gmax), s	20.0	54.5		38.5	20.0	40.0		38.5				
Max Q Clear Time (g_c+I1), s	3.3	45.0		40.5	10.1	44.3		38.3				
Green Ext Time (p_c), s	0.0	3.7		0.0	0.4	0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			160.7									
HCM 6th LOS			F									

SITE LAYOUT

Site: 3 [2031 Baseline (Site Folder: Bakerview Rd at James St)]

Bakerview Rd at James St
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 3 [2031 Future with Development (Site Folder: Bakerview Rd at James St)]

Bakerview Rd at James St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: James St (NB)														
3	L2	157	2.0	162	2.0	0.567	20.5	LOS C	6.4	162.7	1.00	1.05	1.26	31.2
8	T1	219	2.0	226	2.0	0.567	15.1	LOS B	6.4	162.7	1.00	1.05	1.26	31.1
18	R2	143	2.0	147	2.0	0.298	12.2	LOS B	2.2	55.6	0.94	0.93	0.94	32.3
Approach		519	2.0	535	2.0	0.567	15.9	LOS B	6.4	162.7	0.98	1.01	1.17	31.4
East: Bakerview Rd (WB)														
1	L2	36	5.0	37	5.0	0.588	14.4	LOS B	6.1	157.7	0.88	0.87	1.00	34.6
6	T1	573	5.0	591	5.0	0.588	8.7	LOS A	6.1	157.7	0.88	0.87	1.00	34.6
16	R2	223	5.0	230	5.0	0.296	7.9	LOS A	1.9	50.0	0.74	0.78	0.74	34.4
Approach		832	5.0	858	5.0	0.588	8.7	LOS A	6.1	157.7	0.84	0.84	0.93	34.6
North: James St (SB)														
7	L2	124	2.0	128	2.0	0.499	16.6	LOS B	4.3	109.6	0.93	0.98	1.06	33.1
4	T1	189	2.0	195	2.0	0.499	10.9	LOS B	4.3	109.6	0.93	0.98	1.06	33.1
14	R2	18	2.0	19	2.0	0.499	10.8	LOS B	4.3	109.6	0.93	0.98	1.06	32.2
Approach		331	2.0	341	2.0	0.499	13.0	LOS B	4.3	109.6	0.93	0.98	1.06	33.1
West: Bakerview Rd (EB)														
5	L2	201	2.0	207	2.0	0.653	12.4	LOS B	7.2	182.0	0.79	0.71	0.85	34.6
2	T1	630	2.0	649	2.0	0.653	7.1	LOS A	7.2	182.0	0.79	0.71	0.85	34.5
12	R2	121	2.0	125	2.0	0.138	6.1	LOS A	0.8	20.0	0.56	0.62	0.56	35.1
Approach		952	2.0	981	2.0	0.653	8.1	LOS A	7.2	182.0	0.76	0.70	0.81	34.6
All Vehicles		2634	2.9	2715	2.9	0.653	10.5	LOS B	7.2	182.0	0.85	0.84	0.95	33.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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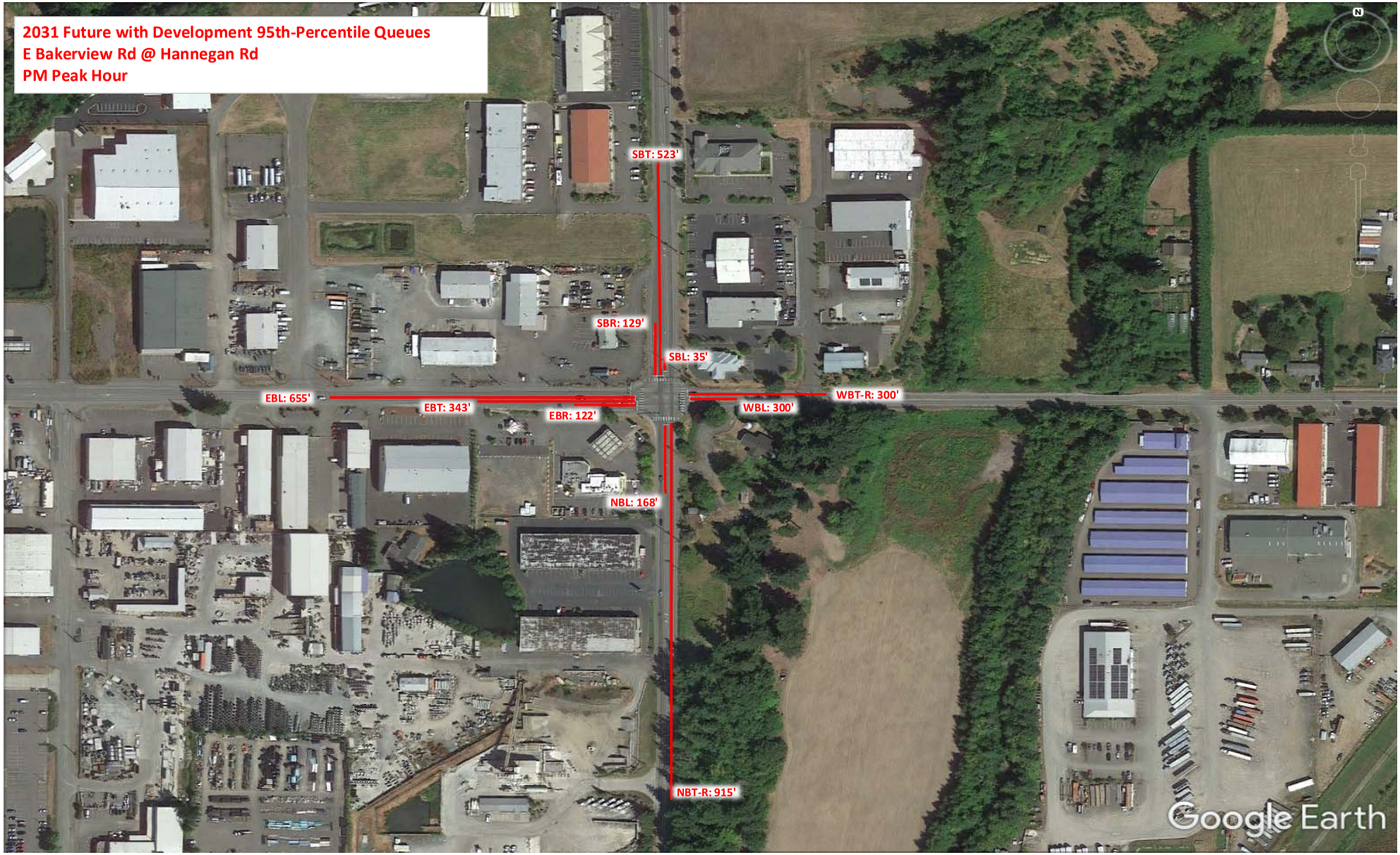
Queueing Data


2031 Future with Development 95th-Percentile Queues
E Bakerview Rd @ Hannegan Rd
PM Peak Hour
SBT: 523'
SBR: 129'
SBL: 35'
EBL: 655'
EBT: 343'
EBR: 122'
WBL: 300'
WBT-R: 300'
NBL: 168'
NBT-R: 915'
Google Earth


2031 Future with Development 95th-Percentile Queues
E Bakerview Rd @ Irongate Rd
PM Peak Hour
SB: 34'
EBL: 25'
EBT-R: 721'
WBT-R: 441'
WBL: 16'
NB: 400'
Google Earth


2031 Future with Development 95th-Percentile Queues
E Bakerview Rd @ James St
PM Peak Hour
SB: 110'
EBT-L: 182'
WBR: 50'
WBT-L: 155'
EBR: 20'
NBR: 56'
NBT-L: 163'
Google Earth

Collision Data

Collision Data Date Range

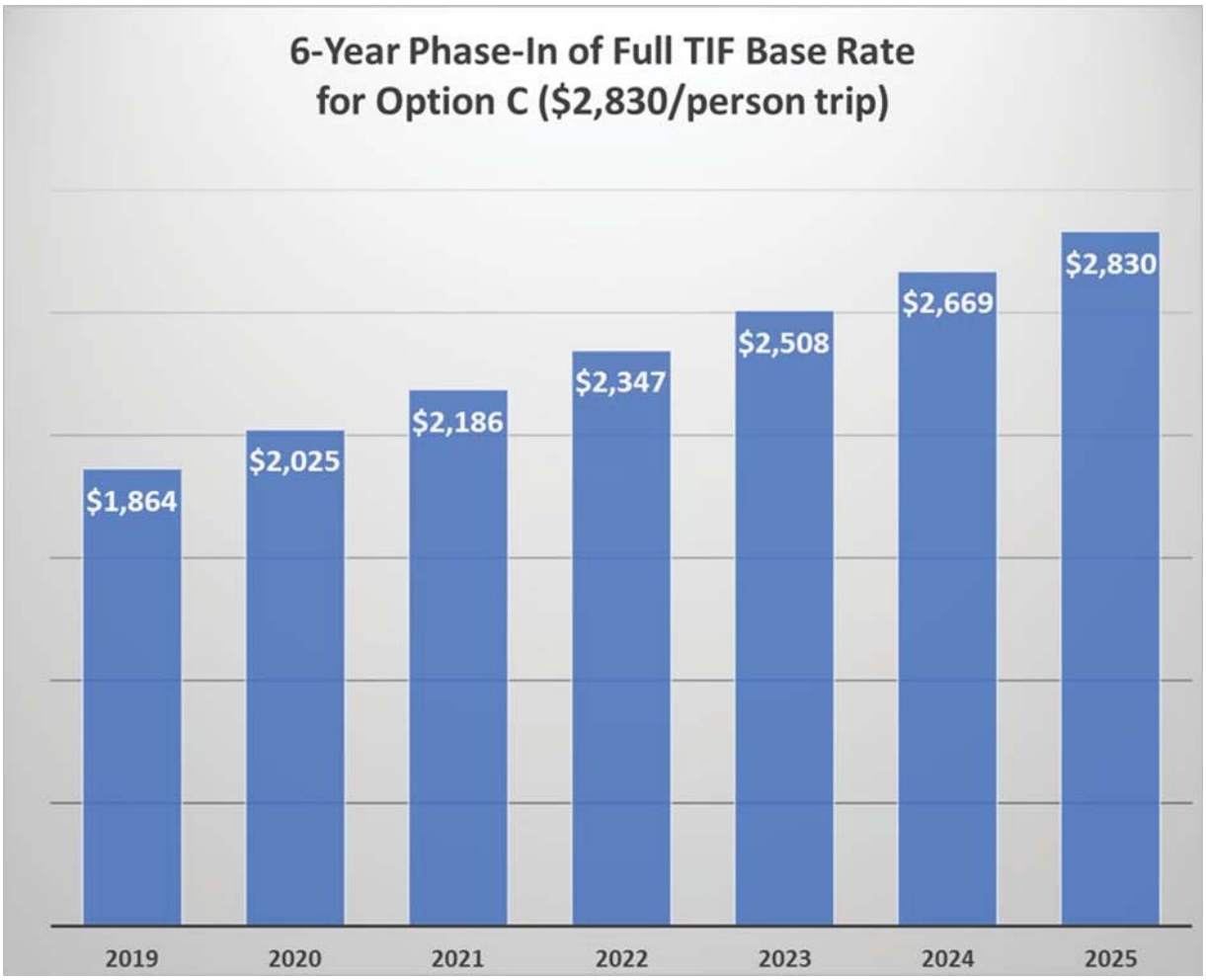
Start	1/1/2016
End	6/30/2021
Total Years	5.50

Intersection	No. Collisions (All Years)	No. Injury/Fatal Collisions	Estimated ADT	Collisions per Year	Collisions per MEV
#1: Bakerview Rd @ Hannegan Rd	26	6	21,470	4.73	0.60
#2: Bakerview Rd @ Irongate Rd	5	1	14,530	0.91	0.17
#3: Bakerview Rd @ James St	18	3	19,110	3.27	0.47

PRIMARY TRAFFICWAY	INTERSECTING TRAFFICWAY/ REFERENCE POINT NAME	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FAT	# VEH	# PEDS	# BIKES	FIRST COLLISION TYPE / OBJECT STRUCK
HANNEGAN RD	E BAKERVIEW RD	0				E585877	2016-09-16	08:56	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
HANNEGAN RD	E BAKERVIEW RD	0				E621772	2016-12-12	08:00	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
HANNEGAN RD	E BAKERVIEW RD	0				E529535	2016-03-29	09:09	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - rear-end
JAMES ST	E BAKERVIEW RD	0				E628003	2016-12-30	17:02	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight
E BAKERVIEW RD	HANNEGAN RD	0				E644471	2017-02-20	10:43	No Apparent Injury	0	0	2	0	0	Entering at angle
E BAKERVIEW RD	HANNEGAN RD	0				E657858	2017-03-31	14:16	No Apparent Injury	0	0	1	0	0	Utility Pole
E BAKERVIEW RD	HANNEGAN RD	0				E639359	2017-02-01	07:07	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- both moving -- sideswipe
E BAKERVIEW RD	IRONGATE RD	0				E711059	2017-09-10	12:31	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD	IRONGATE RD	0				E701998	2017-08-11	14:36	Suspected Minor Injury	1	0	1	0	1	Vehicle - Pedalcyclist
E BAKERVIEW RD	JAMES ST	0				E666693	2017-04-26	18:05	No Apparent Injury	0	0	2	0	0	Entering at angle
E BAKERVIEW RD		362	F	E	JAMES ST	E693297	2017-07-14	11:18	No Apparent Injury	0	0	3	0	0	From same direction - both going straight - one stopped - rear-end
HANNEGAN RD	E BAKERVIEW RD	0				E689842	2017-07-07	21:27	No Apparent Injury	0	0	2	0	0	Entering at angle
HANNEGAN RD	E BAKERVIEW RD	0				E706113	2017-08-21	20:20	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - rear-end
HANNEGAN RD	E BAKERVIEW RD	0				E653748	2017-03-17	15:53	No Apparent Injury	0	0	2	0	0	Entering at angle
HANNEGAN RD		297	F	N	BAKERVIEW	E737732	2017-11-13	17:38	Possible Injury	1	0	2	0	0	From same direction - both going straight - both moving - rear-end
IRONGATE RD	E BAKERVIEW RD	0				E730150	2017-10-31	16:10	No Apparent Injury	0	0	2	0	0	Entering at angle
JAMES ST	E BAKERVIEW RD	0				E726454	2017-10-19	17:23	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight
JAMES ST	E BAKERVIEW RD	0				E721806	2017-10-08	15:33	No Apparent Injury	0	0	1	0	0	Signal Pole
E BAKERVIEW RD	HANNEGAN RD	0				E847006	2018-10-07	13:02	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD	JAMES ST	0				E789345	2018-04-16	8:41	Suspected Serious Injury	2	0	2	0	0	Entering at angle
E BAKERVIEW RD	JAMES ST	0				E849145	2018-10-14	13:09	Suspected Minor Injury	4	0	2	0	0	Entering at angle
E BAKERVIEW RD	JAMES ST	0				E812390	2018-06-26	10:15	Possible Injury	1	0	2	0	0	Entering at angle
E BAKERVIEW RD		25	F	W	HANNEGAN RD	E796364	2018-05-02	15:40	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe
E BAKERVIEW RD		300	F	W	JAMES ST	E780550	2018-03-16	15:15	Possible Injury	3	0	3	0	0	From same direction - both going straight - one stopped - rear-end
HANNEGAN RD		175	F	S	E BAKERVIEW RD	E756080	2018-01-04	14:49	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe
HANNEGAN RD		200	F	S	E BAKERVIEW RD	E872714	2018-12-11	16:55	Possible Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end
JAMES ST	E BAKERVIEW RD	0				E853712	2018-10-16	18:35	Possible Injury	2	0	2	0	0	From opposite direction - one left turn - one straight
JAMES ST	E BAKERVIEW RD	0				E873966	2018-12-06	17:47	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight
E BAKERVIEW RD		30	F	E	JAMES ST	E983273	2019-11-07	15:33	No Apparent Injury	0	0	3	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD	HANNEGAN RD	0				E892497	2019-02-06	8:27	No Apparent Injury	0	0	2	0	0	From same direction - all others
E BAKERVIEW RD	JAMES ST	0				E973658	2019-10-21	17:13	No Apparent Injury	0	0	2	0	0	From same direction - one right turn - one straight
HANNEGAN RD		150	F	S	E BAKERVIEW RD	E928252	2019-06-06	17:22	Possible Injury	1	0	3	0	0	From same direction - both going straight - one stopped - rear-end
HANNEGAN RD		200	F	N	E BAKERVIEW RD	E913905	2019-04-15	8:42	Suspected Minor Injury	3	0	5	0	0	From same direction - both going straight - both moving - rear-end
HANNEGAN RD	E BAKERVIEW RD	0				3605188	2019-08-10	7:14	Possible Injury	2	0	2	0	0	Entering at angle
HANNEGAN RD	E BAKERVIEW RD	0				3809436	2019-11-19	17:34	No Apparent Injury	0	0	2	0	0	Entering at angle
HANNEGAN RD	E BAKERVIEW RD	0				E938190	2019-07-08	22:00	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe
IRONGATE RD	E BAKERVIEW RD	0				E951884	2019-08-14	12:43	No Apparent Injury	0	0	2	0	0	Entering at angle
E BAKERVIEW RD		100	F	W	HANNEGAN RD	EA57207	2020-08-14	13:36	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD		400	F	W	JAMES ST	EA91789	2020-12-16	14:29	Possible Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD	HANNEGAN RD	0				EA56655	2020-08-14	20:55	Unknown	0	0	1	0	0	Utility Box
HANNEGAN RD	E BAKERVIEW RD	0				EA11647	2020-01-31	10:59	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
HANNEGAN RD	E BAKERVIEW RD	0				EA91793	2020-12-22	10:01	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
JAMES ST	E BAKERVIEW RD	0				EA76093	2020-10-23	14:27	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight
E BAKERVIEW RD		74	F	W	HANNEGAN RD	EB38892	2021-06-14	8:19	Suspected Minor Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD		30	F	E	IRONGATE RD	EB34641	2021-05-10	17:07	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD		0.1	M	W	JAMES ST	EB41981	2021-06-21	14:11	No Apparent Injury	0	0	3	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD		100	F	W	JAMES ST	EB32883	2021-05-21	10:39	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
E BAKERVIEW RD		200	F	E	JAMES ST	EB19709	2021-04-02	17:10	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - rear-end
HANNEGAN RD	E BAKERVIEW RD	0				EB14426	2021-03-15	10:26	No Apparent Injury	0	0	2	0	0	Entering at angle

Planning Documents

Bellingham Transportation Impact Fee (TIF)
Annual Base Rate Increases 2019-2025
(Adopted by City Council December 3, 2018)



For Questions or additional information contact:

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NOTE: All email subject to public disclosure requirements per RCW 42.56

Project #11: James/Bakerview Intersection Safety Improvements

PROJECT NARRATIVE: East Bakerview Road is a major arterial and trucking route between the Irongate industrial area, SR 539, and I-5. James Street is the only north-south secondary arterial between Sunset Drive and Kellogg Road. Increased traffic and lack of north-south left-turn lanes contribute to an increase in speeding and collisions at the James/Bakerview intersection. Constructing an expandable multimodal roundabout will slow speeding vehicles, reduce collisions, and improve safety for all users, while also providing long-term transportation capacity as the King Mountain area develops.

MULTIMODAL TRANSPORTATION BENEFITS: Tier 3 sidewalks, crosswalk with pedestrian refuges, Tier 3 bicycle lanes, collision reduction, increased safety & efficiency of freight and goods movement, Greenways parks and trails planned adjacent to roundabout, WTA transit route 48 and future WTA transit routes as ridership demand increases. ADA Transition Plan Medium Priority.

PROJECT STATUS: PE/Design complete; 3 individual federal grants secured & available 2023; Local funding needed 2023; Construction 2023.

No.	PROJECT DESCRIPTION	FUNDING SOURCE	Cost Estimates (000's) 2021 Dollars							
			Previous Budget	FUNDED 2022	FUNDED 2023	FUNDED 2024	UNFUNDED 2025	UNFUNDED 2026	UNFUNDED 2027	PROJECT TOTALS
11	James/Bakerview Intersection Safety Improvements (Expandable multimodal roundabout)	Street	120		500					
		Private Mitigation			?					
		Federal STP	385							
		Federal HSIP		900	Build					
		Federal STBG			2,000					
		Subtotal	**505**	**900**	**2,500**					**3,905**

TRANSPORTATION IMPACT FEES COLLECTED Yes, for local funds

RIGHT-OF-WAY ACQUISITION NECESSARY Yes