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Everett Safe Streets Development Traffic Impact Analysis

Jurisdiction: City of Everett

October 2016

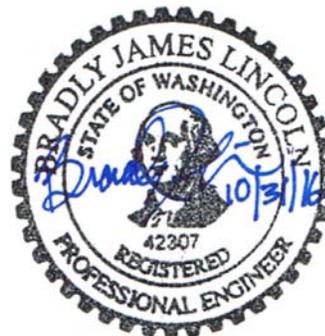


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1. DEVELOPMENT IDENTIFICATION

Gibson Traffic Consultants, Inc. (GTC) has been retained to analyze the traffic impacts of the proposed Everett Safe Streets development. GTC is a professional traffic engineering consulting firm registered and licensed in the State of Washington. Brad Lincoln, 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.

The Everett Safe Streets development is located along the east side of Evergreen Way, north of Berkshire Drive. The development is proposed to consist of 70 units for homeless individuals. The units will be a combination of 1-bedroom and studio apartments designed for single occupancy. The units will be situated in a 4-story building. The development is proposing to utilize the existing driveway that provides access to the Reservoir #3 and the fire training facility. A credit has not been applied for the existing use of the site. A site vicinity map is included in Figure 1.

2. METHODOLOGY

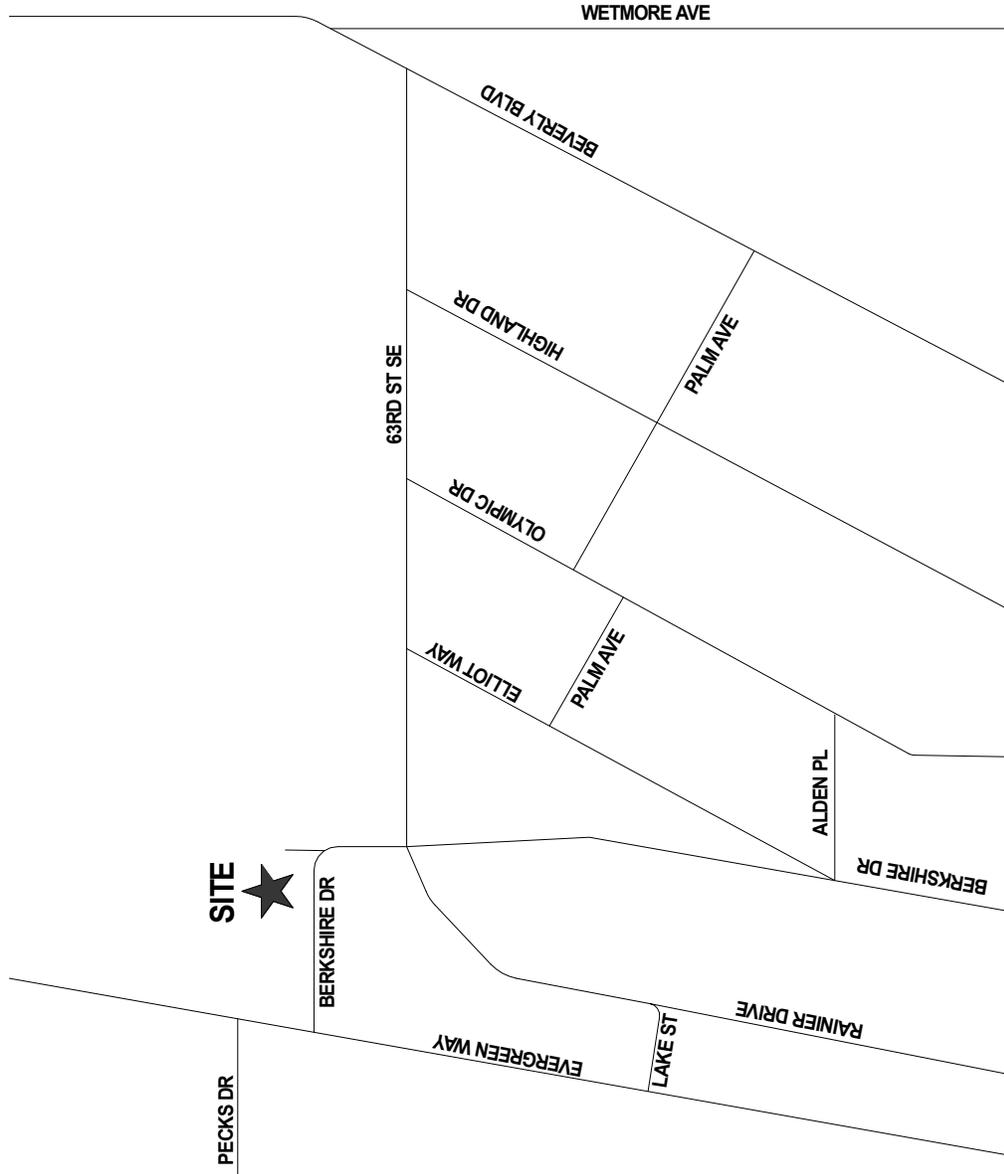
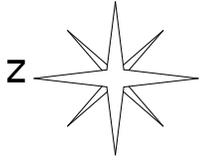
Trip generation calculations for the Everett Safe Streets development are based on data collected at Patrick Place, located in Seattle. The distribution of trips is based on existing counts at the surrounding intersections, surrounding commercial and retail uses and anticipated destinations.

The City of Everett utilizes a threshold of 50 PM peak-hour trip for requiring level of service analysis. The Everett Safe Streets development is not anticipated to meet this threshold for analysis; however, the following intersections have been analyzed as part of this report based on discussions with City of Everett staff to determine any local impacts:

1. Berkshire Drive at Site Access
2. Berkshire Drive at Rainier Avenue/63rd Street SE

The level of service analysis has been performed for the weekday PM peak-hour for the existing conditions, baseline conditions and future with development conditions.

Traffic congestion on roadways is generally measured in terms of level of service (LOS) at critical intersections. In accordance with the *Highway Capacity Manual*, roadway facilities and intersections are rated between LOS A and F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The level of service at signalized intersections and all-way stop-controlled intersections is based on the average stopped delay for all entering vehicles. The level of service at two-way stop-controlled intersections is based on stopped delay times for the critical approach or movement(s). Geometric characteristics and conflicting traffic movements are taken into consideration when determining level of service values. A summary of the level of service criteria has been included in Table 1.



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GTC #16-253

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EVERETT SAFE STREETS
SUPPORTIVE HOUSING

LEGEND
★

DEVELOPMENT SITE

FIGURE 1
SITE VICINITY MAP

CITY OF EVERETT

Table 1: Level of Service Criteria for Intersections

Level of ¹ Service	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	Signalized 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

The level of service analysis has been performed using the *Synchro 9.1, Build 907* software. The acceptable level of service at City of Everett intersections is LOS D.

3. TRIP GENERATION

Trip generation estimates for the Everett Safe Streets development are based on a count at the 71-unit Patrick Place site in the City of Seattle since there is not a similar use in the Institute of Transportation Engineer (ITE) *Trip Generation Manual, 9th Edition*. Patrick Place is similar in nature, both have a similar number of units (Patrick Place has 71 units and the Everett site has 70 units) and surrounding features. Patrick Place is located along Aurora Avenue N with several transit options and there are 10 Everett Transit/Community Transit stops within 0.50 miles of the Everett site. Both sites are urban in nature with pedestrian facilities, including curb, gutter and sidewalk in mixed-use neighborhoods. The Seattle versus Everett location is not anticipated to significantly affect the trip generation since there are several commercial uses, including a grocery store and pharmacy, surrounding the Everett site.

¹ **Source:** *Highway Capacity Manual* 2010.

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.

The count at Patrick Place in Seattle, which is managed by the same organization as the Everett location, was completed in October 2016 during a normal day when the site was fully occupied. The count was completed by the independent count firm Traffic Data Gathering (TDG) and showed a total of 2 trips during the PM peak-hour and a total of 3 trips during the PM peak-period (4:00 PM to 6:00 PM). These trips included a visitor who parked outside of the garage and could have been a pedestrian trip, but was counted as a vehicle trip to be conservatively high in the trip generation of the similar site.

The low number of trips generated by Patrick Place is similar to the anticipated trip generation for the Everett site since most the residents do not have full-time employment and only a handful own vehicles. Additionally, the few employees who have visiting offices on-site do not operate on a typical work schedule and would be unlikely to generate trips during the typical 4:00 PM to 6:00 PM peak-period.

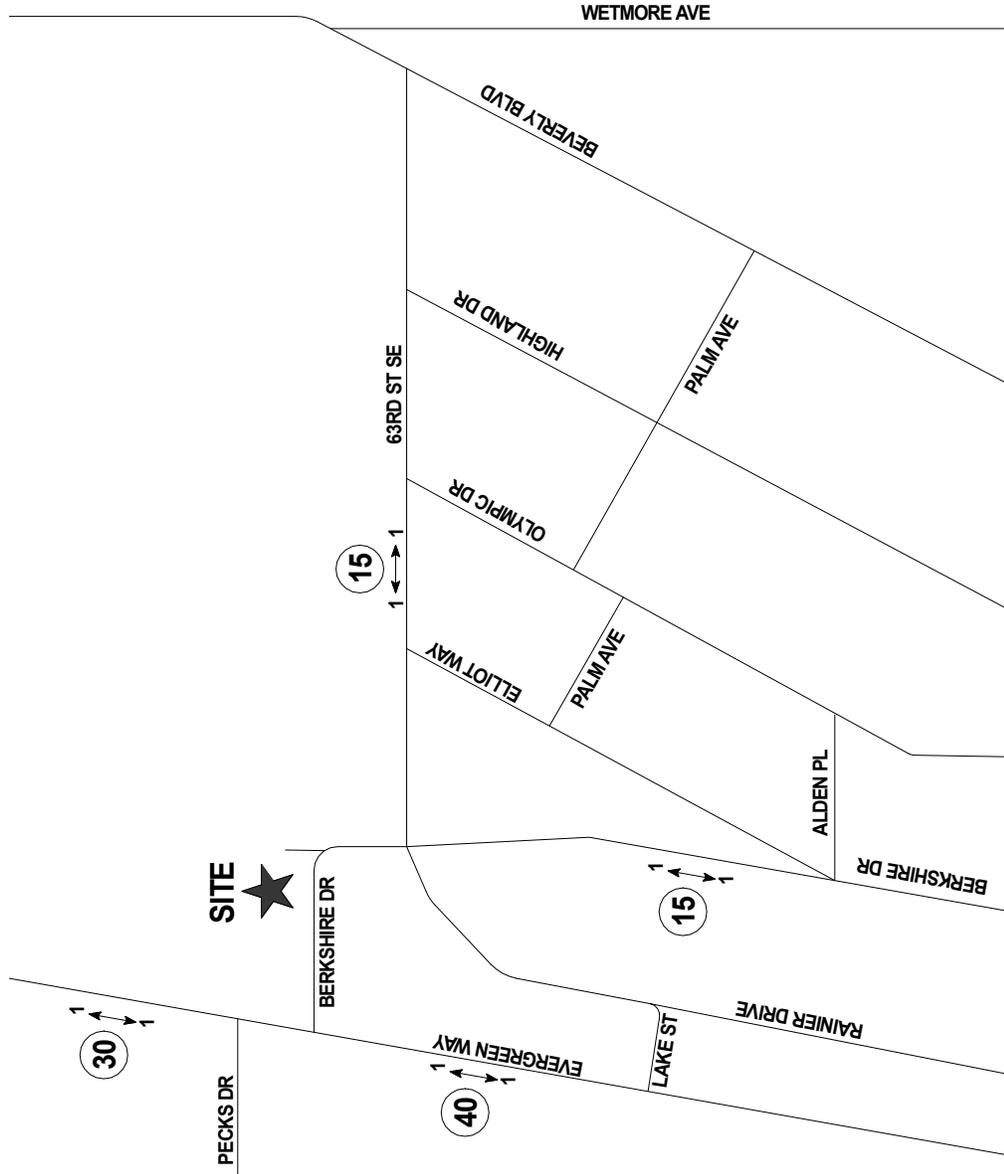
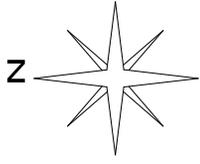
The Everett Safe Streets site is anticipated to have the same PM peak-hour trips generation as the Patrick Place location, 2 PM peak-hour trips. However, to represent a very conservatively high peak-hour trip generation, the Everett site has been analyzed with 8 PM peak-hour trips, 4 inbound and 4 outbound trips. This trip generation is nearly three-times more than the 2-hour PM peak-period from the Seattle site and four-times as high as the PM peak-hour.

4. TRIP DISTRIBUTION

The Everett Safe Streets trip distribution is based on PM peak-hour counts and surrounding commercial and retail uses. It is anticipated that 70% of the development's trips will travel along Broadway Avenue, forty percent to and from the south and thirty percent to and from the north. Approximately 15% of the development's trips are anticipated to travel to and from the south along Berkshire Drive. The remaining 15% of the development's trips are anticipated to travel to and from the east along 63rd Street SE. The detailed trip distribution is shown in Figure 2.

5. TRAFFIC VOLUMES

Count data at the study intersections is based on data collected by Traffic Data Gathering (TDG) in October 2016 and data from City of Everett. The existing turning movements are shown in Figure 3. The 2021 baseline traffic volumes were calculated using a 4% annually compounding growth rate that was identified during scoping discussion with City of Everett staff. The 2021 baseline turning movements are shown in Figure 4. The 2021 future with development turning movements were calculated by adding the development's trips to the 2021 baseline turning movements. The 2021 future with development turning movements are shown in Figure 5.



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PM ← → PEAK

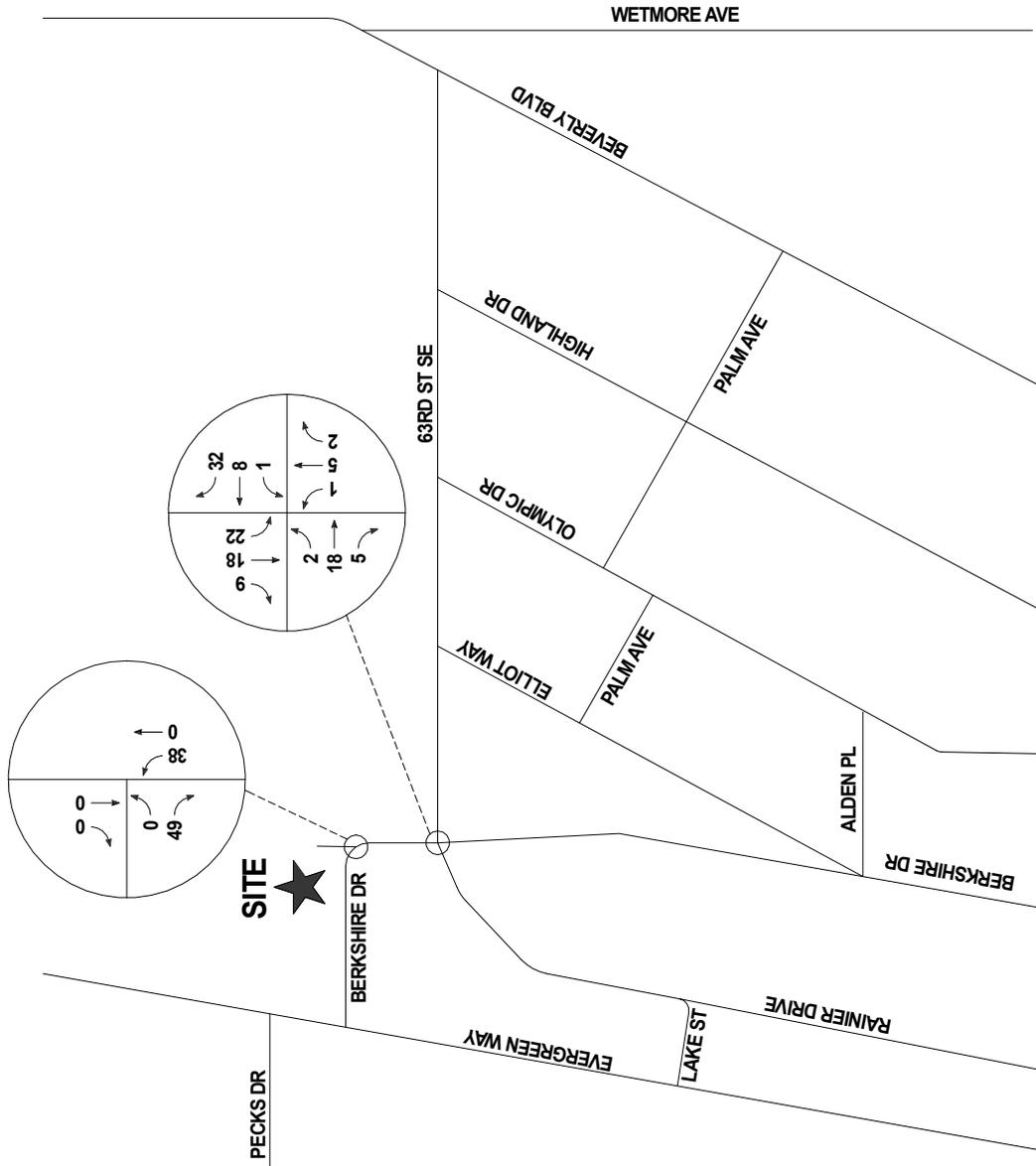
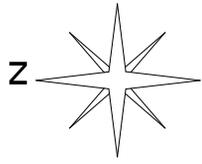
PEAK-HOUR TRIPS

XX

TRIP DISTRIBUTION %

CITY OF EVERETT

FIGURE 2
DEVELOPMENT TRIP
DISTRIBUTION
PM PEAK-HOUR



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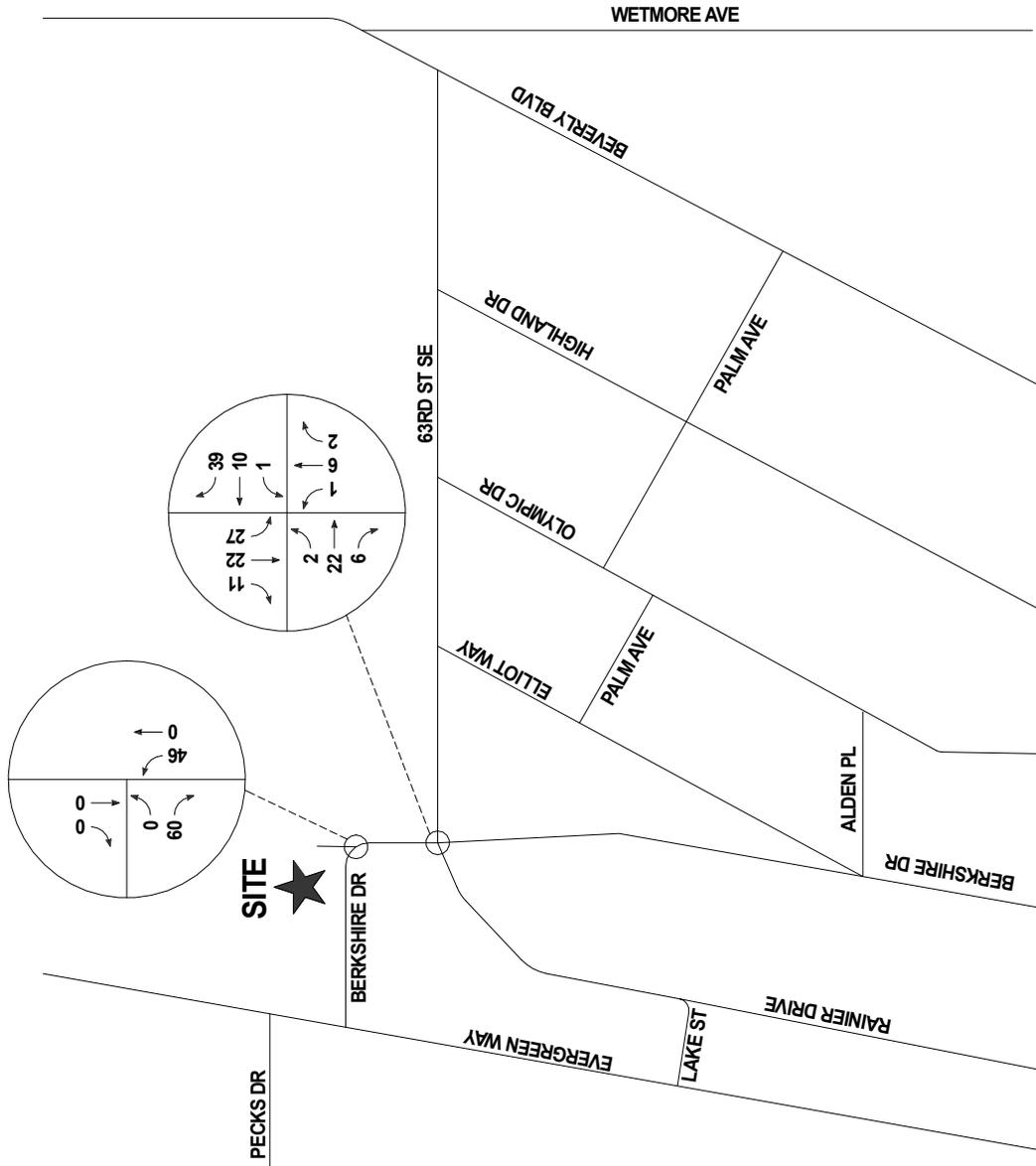
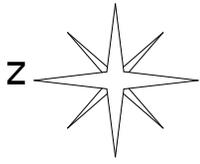
FIGURE 3
2016 EXISTING
TURNING MOVEMENT VOLUMES

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LEGEND
XXX →
PEAK-HOUR
TURNING MOVEMENT VOLUMES

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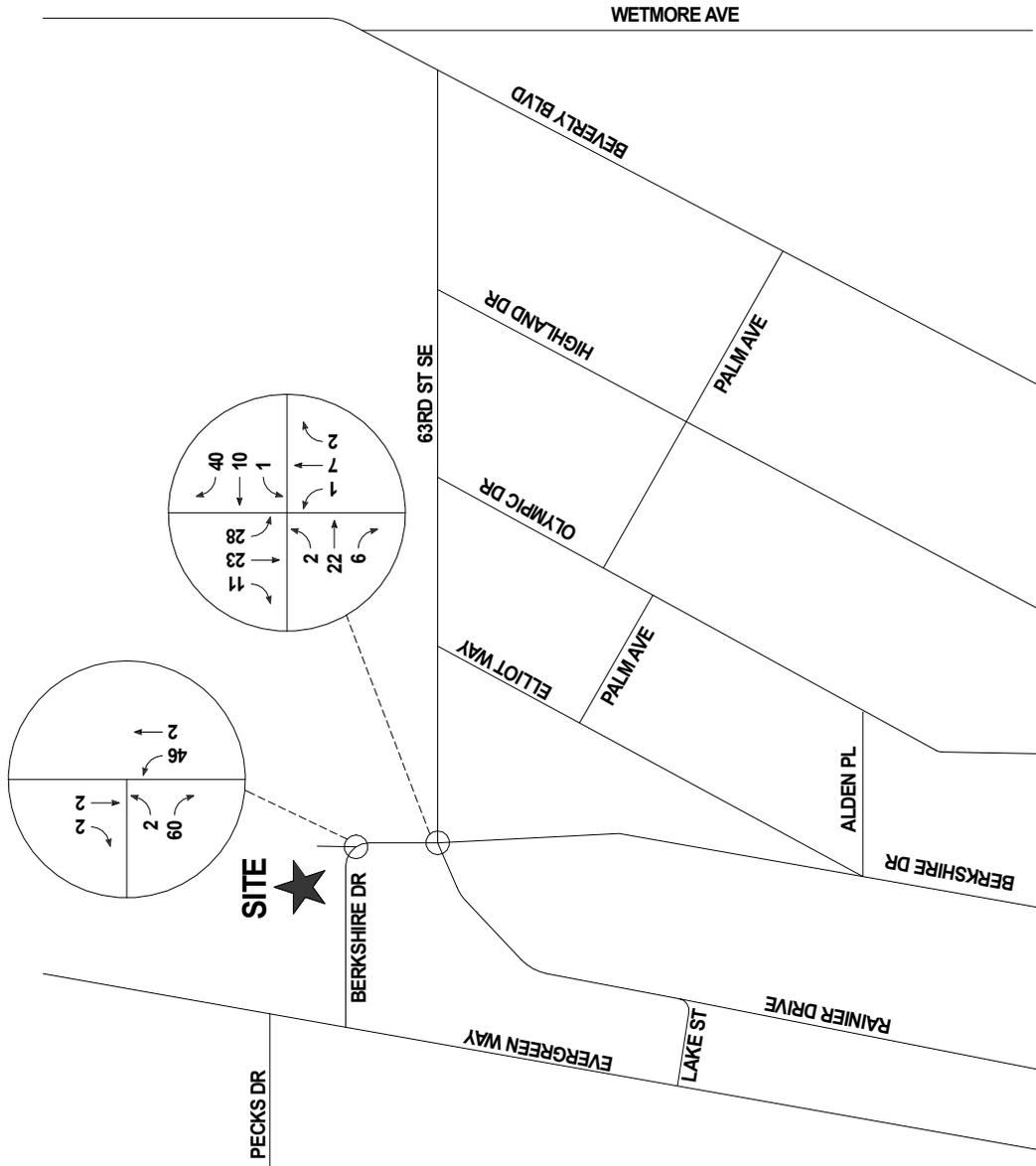
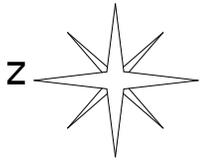
FIGURE 4
2021 BASELINE
TURNING MOVEMENT VOLUMES

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LEGEND
XXX →
PEAK-HOUR
TURNING MOVEMENT VOLUMES

EVERETT SAFE STREETS
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TRAFFIC IMPACT STUDY
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FIGURE 5
2021 FUTURE
WITH DEVELOPMENT
TURNING MOVEMENT VOLUMES

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LEGEND
XXX →
PEAK-HOUR
TURNING MOVEMENT VOLUMES

EVERETT SAFE STREETS
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CITY OF EVERETT

6. LEVEL OF SERVICE

The analysis of the study intersections has been performed using the *Synchro 9.1, Build 907* software. The existing level of service analysis has been performed using the existing intersection configuration, the existing peak-hour factors and the existing heavy-vehicle factors.

The intersection of Berkshire Drive at the site access is currently a curve in the roadway with an access to the existing Reservoir #3 and the fire training facility. The existing curvature, both horizontally and vertically, limits the sight distance for turning vehicles. Additional control is recommended at the intersection to ensure safe operations of the intersection. It is recommended that northbound vehicles and vehicles exiting the site be stop-controlled. However, this sign configuration is not able to be analyzed in the *Synchro 9.1* software and therefore the intersection has been analyzed as an all-way stop-controlled intersection.

The level of service results for the study intersections for the 2016 existing conditions, 2021 baseline conditions and 2021 future with development conditions are summarized in Table 2.

Table 2: Level of Service Summary

Intersection	2016 Existing Conditions		2021 Baseline Conditions		2021 Future with Development Conditions	
	LOS	Delay	LOS	Delay	LOS	Delay
1. Berkshire Drive at Site Access	A	7.0 sec	A	7.1 sec	A	7.1 sec
2. Berkshire Drive at 63 rd Street SE	A	7.1 sec	A	7.2 sec	A	7.2 sec

The level of service analysis shows that the two study intersections currently operate at LOS A, the best level, and are anticipated to remain at LOS A with the development. The level of service calculations are included in the attachments.

7. TRAFFIC MITIGATION FEES

The City of Everett has a traffic impact fee of \$2,400 per PM peak-hour trip. Although the operational analysis was conducted with the conservatively high number of trips, the facility is only expected to generate 4 PM peak-hour trips. Therefore, the traffic mitigation fee for the Everett Safe Streets development would be \$9,600.

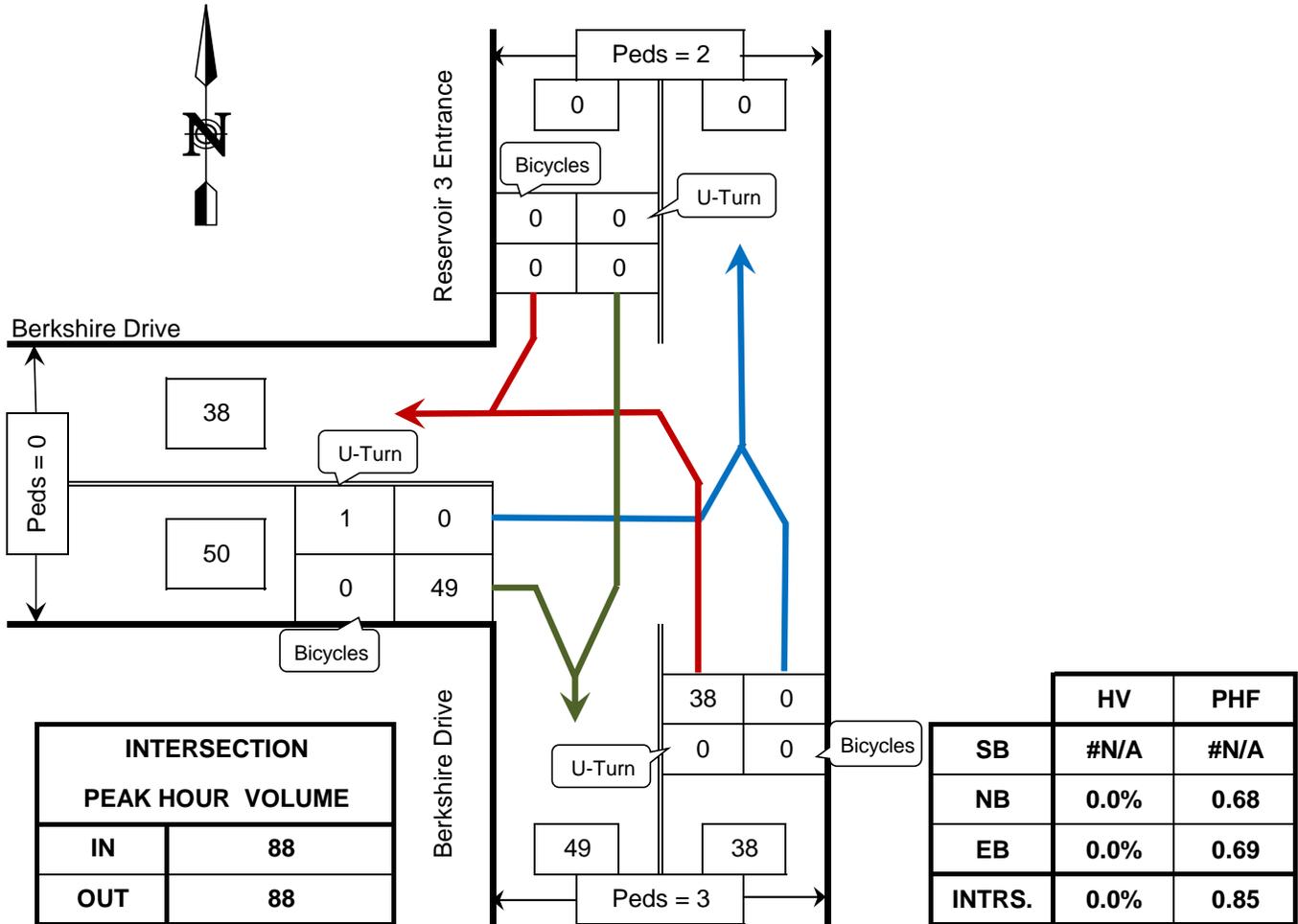
8. CONCLUSIONS

The Everett Safe Streets development is anticipated to generate 4 PM peak-hour trips and is not anticipated to change the existing operations of the study intersections. The traffic mitigation fees for the development are \$9,600, based on the existing traffic mitigation fees.

Count Data and Turning Movement Calculations

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:00 PM TO 5:00 PM



HV = Heavy Vehicles
PHF = Peak Hour Factor

Berkshire Drive @ City of Everett Reservoir 3 Entrance

Everett, WA

COUNTED BY: VT

DATE OF COUNT: Thu. 10/20/16

REDUCED BY: CN

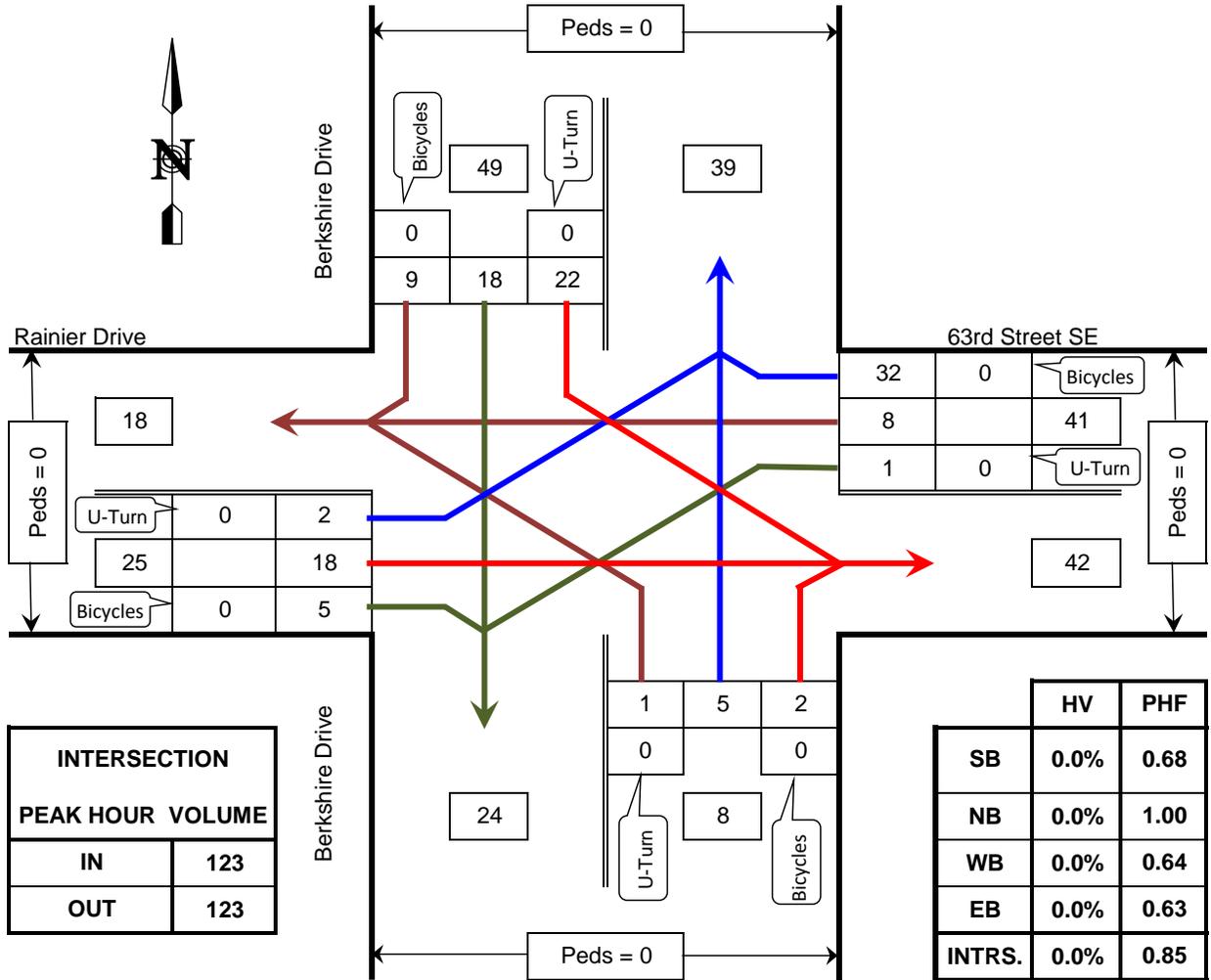
TIME OF COUNT: 4:00 PM - 6:00 PM

REDUCTION DATE: Fri. 10/21/16

WEATHER: Rainy

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:00 PM TO 5:00 PM



PHF = Peak Hour Factor
HV = Heavy Vehicle

Berkshire Drive @ Rainier Drive/63rd Street SE

Everett, WA

COUNTED BY: VT

DATE OF COUNT: Thu. 10/20/16

REDUCED BY: CN

TIME OF COUNT: 4:00 PM - 6:00 PM

REDUCTION DATE: Fri. 10/21/16

WEATHER: Rainy

1 Berkshire Dr at Site Access

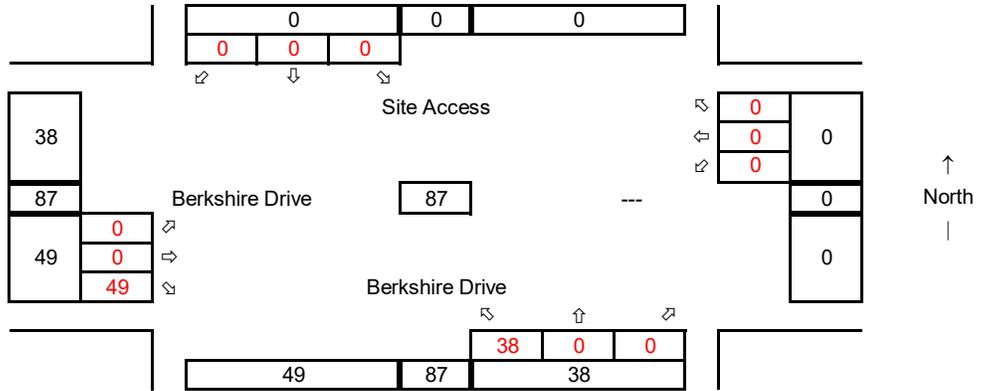
Synchro ID: 1

Existing

Average Weekday
PM Peak Hour

Year: **10/20/2016**

Data Source: **TDG**



Future without Development

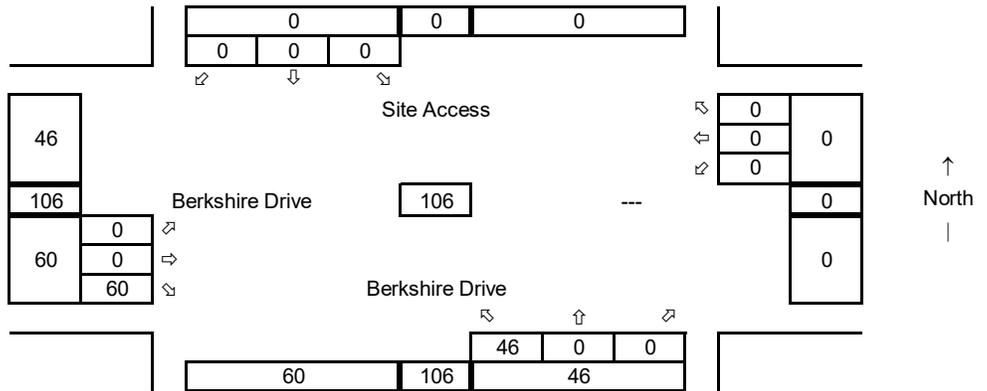
Average Weekday
PM Peak Hour

Year: **2021**

Growth Rate = **4.0%**

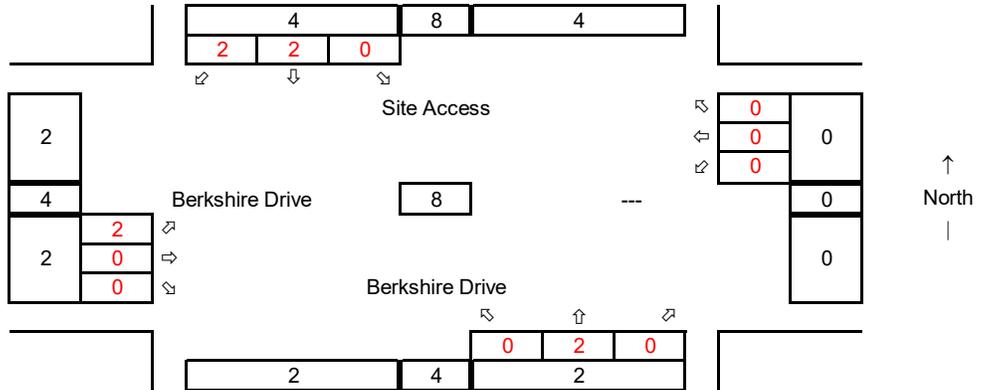
Years of Growth = 5

Total Growth = 1.2167



Total Development Trips

Average Weekday
PM Peak Hour



Future with Development

Average Weekday
PM Peak Hour



2 Berkshire Dr at 63rd St SE

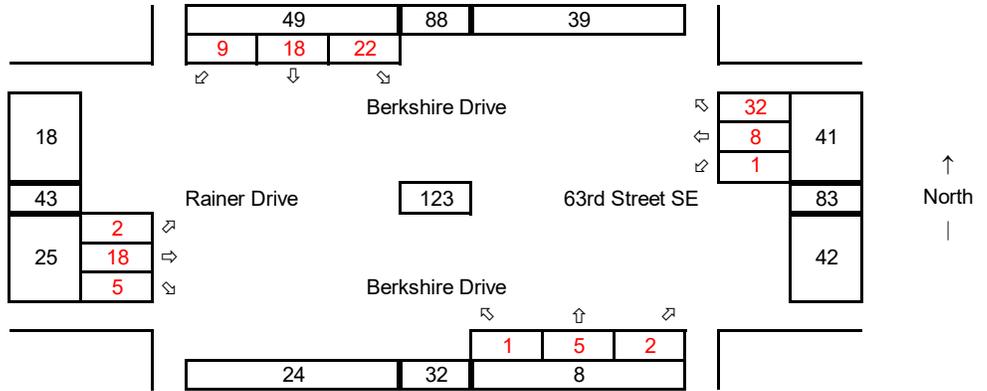
Synchro ID: 2

Existing

Average Weekday
PM Peak Hour

Year: **10/20/2016**

Data Source: **TDG**



Future without Development

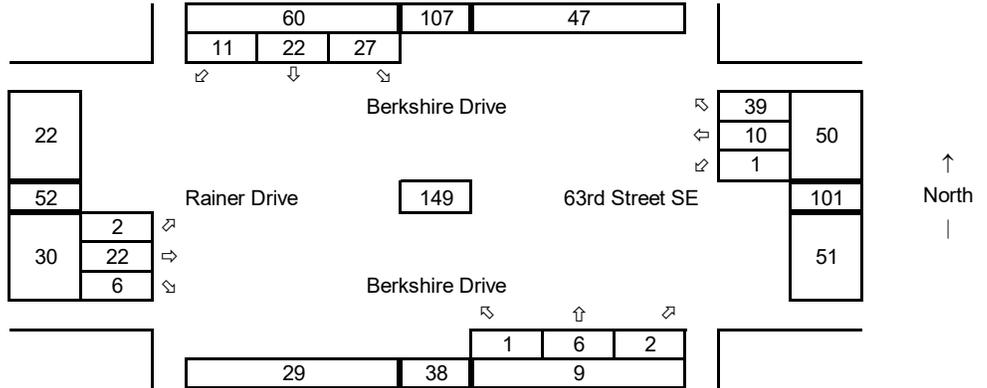
Average Weekday
PM Peak Hour

Year: **2021**

Growth Rate = **4.0%**

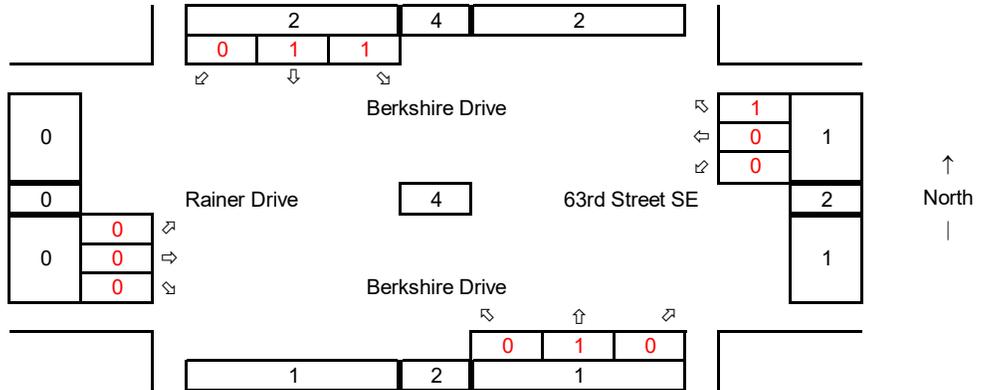
Years of Growth = 5

Total Growth = 1.2167



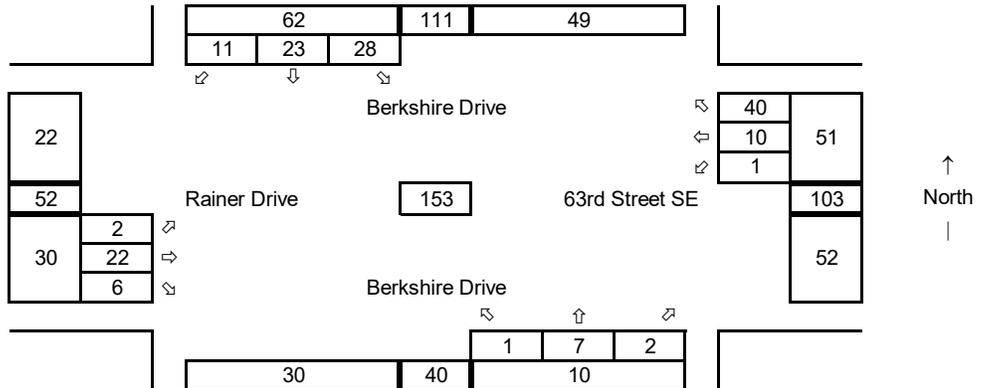
Total Development Trips

Average Weekday
PM Peak Hour



Future with Development

Average Weekday
PM Peak Hour



Level of Service Calculations

HCM 2010 AWSC
 1: Berkshire Drive & Site Access

Everett Safe Streets Apartments

Intersection

Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	0	49	0	38	0	0	0	0
Future Vol, veh/h	0	0	49	0	38	0	0	0	0
Peak Hour Factor	0.92	0.85	0.85	0.92	0.85	0.85	0.92	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	58	0	45	0	0	0	0
Number of Lanes	0	1	0	0	0	1	0	1	0
Approach	EB			NB			SB		
Opposing Approach				SB			NB		
Opposing Lanes	0			1			1		
Conflicting Approach Left	SB			EB					
Conflicting Lanes Left	1			1			0		
Conflicting Approach Right	NB						EB		
Conflicting Lanes Right	1			0			1		
HCM Control Delay	6.6			7.5			0		
HCM LOS	A			A			-		

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	100%	0%	0%
Vol Thru, %	0%	0%	100%
Vol Right, %	0%	100%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	38	49	0
LT Vol	38	0	0
Through Vol	0	0	0
RT Vol	0	49	0
Lane Flow Rate	45	58	0
Geometry Grp	1	1	1
Degree of Util (X)	0.053	0.055	0
Departure Headway (Hd)	4.234	3.412	4.069
Convergence, Y/N	Yes	Yes	Yes
Cap	849	1048	0
Service Time	2.242	1.438	2.088
HCM Lane V/C Ratio	0.053	0.055	0
HCM Control Delay	7.5	6.6	7.1
HCM Lane LOS	A	A	N
HCM 95th-tile Q	0.2	0.2	0

HCM 2010 AWSC
 2: Berkshire Drive & Rainier Drive/63rd Street SE

Everett Safe Streets Apartments

Intersection

Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↔				↔				↔	
Traffic Vol, veh/h	0	2	18	5	0	1	8	32	0	1	5	2
Future Vol, veh/h	0	2	18	5	0	1	8	32	0	1	5	2
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	21	6	0	1	9	38	0	1	6	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	6.8	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	8%	2%	45%
Vol Thru, %	62%	72%	20%	37%
Vol Right, %	25%	20%	78%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	25	41	49
LT Vol	1	2	1	22
Through Vol	5	18	8	18
RT Vol	2	5	32	9
Lane Flow Rate	9	29	48	58
Geometry Grp	1	1	1	1
Degree of Util (X)	0.01	0.033	0.048	0.065
Departure Headway (Hd)	3.987	3.982	3.608	4.055
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	895	896	988	883
Service Time	2.023	2.018	1.645	2.08
HCM Lane V/C Ratio	0.01	0.032	0.049	0.066
HCM Control Delay	7.1	7.2	6.8	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.2

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	22	18	9
Future Vol, veh/h	0	22	18	9
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	21	11
Number of Lanes	0	0	1	0
Approach	SB			
Opposing Approach	NB			
Opposing Lanes	1			
Conflicting Approach Left	WB			
Conflicting Lanes Left	1			
Conflicting Approach Right	EB			
Conflicting Lanes Right	1			
HCM Control Delay	7.4			
HCM LOS	A			

HCM 2010 AWSC
 1: Berkshire Drive & Site Access

Everett Safe Streets Apartments

Intersection

Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	0	60	0	46	0	0	0	0
Future Vol, veh/h	0	0	60	0	46	0	0	0	0
Peak Hour Factor	0.92	0.85	0.85	0.92	0.85	0.85	0.92	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	71	0	54	0	0	0	0
Number of Lanes	0	1	0	0	0	1	0	1	0
Approach	EB			NB			SB		
Opposing Approach				SB			NB		
Opposing Lanes	0			1			1		
Conflicting Approach Left	SB			EB					
Conflicting Lanes Left	1			1			0		
Conflicting Approach Right	NB						EB		
Conflicting Lanes Right	1			0			1		
HCM Control Delay	6.7			7.6			0		
HCM LOS	A			A			-		

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	100%	0%	0%
Vol Thru, %	0%	0%	100%
Vol Right, %	0%	100%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	46	60	0
LT Vol	46	0	0
Through Vol	0	0	0
RT Vol	0	60	0
Lane Flow Rate	54	71	0
Geometry Grp	1	1	1
Degree of Util (X)	0.064	0.067	0
Departure Headway (Hd)	4.258	3.428	4.1
Convergence, Y/N	Yes	Yes	Yes
Cap	845	1042	0
Service Time	2.266	1.459	2.121
HCM Lane V/C Ratio	0.064	0.068	0
HCM Control Delay	7.6	6.7	7.1
HCM Lane LOS	A	A	N
HCM 95th-tile Q	0.2	0.2	0

HCM 2010 AWSC
 2: Berkshire Drive & Rainier Drive/63rd Street SE

Everett Safe Streets Apartments

Intersection

Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↔				↔				↔	
Traffic Vol, veh/h	0	2	22	6	0	1	10	39	0	1	6	2
Future Vol, veh/h	0	2	22	6	0	1	10	39	0	1	6	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	24	7	0	1	11	42	0	1	7	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	6.9	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	7%	2%	45%
Vol Thru, %	67%	73%	20%	37%
Vol Right, %	22%	20%	78%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	30	50	60
LT Vol	1	2	1	27
Through Vol	6	22	10	22
RT Vol	2	6	39	11
Lane Flow Rate	10	33	54	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.011	0.036	0.055	0.074
Departure Headway (Hd)	4.023	4	3.625	4.072
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	886	891	983	879
Service Time	2.064	2.041	1.667	2.101
HCM Lane V/C Ratio	0.011	0.037	0.055	0.074
HCM Control Delay	7.1	7.2	6.9	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	27	22	11
Future Vol, veh/h	0	27	22	11
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	29	24	12
Number of Lanes	0	0	1	0
Approach	SB			
Opposing Approach	NB			
Opposing Lanes	1			
Conflicting Approach Left	WB			
Conflicting Lanes Left	1			
Conflicting Approach Right	EB			
Conflicting Lanes Right	1			
HCM Control Delay	7.4			
HCM LOS	A			

HCM 2010 AWSC
 1: Berkshire Drive & Site Access

Everett Safe Streets Apartments

Intersection

Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	2	60	0	46	2	0	2	2
Future Vol, veh/h	0	2	60	0	46	2	0	2	2
Peak Hour Factor	0.92	0.85	0.85	0.92	0.85	0.85	0.92	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	71	0	54	2	0	2	2
Number of Lanes	0	1	0	0	0	1	0	1	0
Approach	EB			NB			SB		
Opposing Approach				SB			NB		
Opposing Lanes	0			1			1		
Conflicting Approach Left	SB			EB					
Conflicting Lanes Left	1			1			0		
Conflicting Approach Right	NB						EB		
Conflicting Lanes Right	1			0			1		
HCM Control Delay	6.8			7.6			6.8		
HCM LOS	A			A			A		

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	96%	3%	0%
Vol Thru, %	4%	0%	50%
Vol Right, %	0%	97%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	48	62	4
LT Vol	46	2	0
Through Vol	2	0	2
RT Vol	0	60	2
Lane Flow Rate	56	73	5
Geometry Grp	1	1	1
Degree of Util (X)	0.067	0.07	0.005
Departure Headway (Hd)	4.258	3.465	3.805
Convergence, Y/N	Yes	Yes	Yes
Cap	844	1030	940
Service Time	2.268	1.5	1.829
HCM Lane V/C Ratio	0.066	0.071	0.005
HCM Control Delay	7.6	6.8	6.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.2	0

HCM 2010 AWSC
 2: Berkshire Drive & Rainier Drive/63rd Street SE

Everett Safe Streets Apartments

Intersection

Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↔				↔				↔	
Traffic Vol, veh/h	0	2	22	6	0	1	10	40	0	1	7	2
Future Vol, veh/h	0	2	22	6	0	1	10	40	0	1	7	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	24	7	0	1	11	43	0	1	8	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	6.9	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	7%	2%	45%
Vol Thru, %	70%	73%	20%	37%
Vol Right, %	20%	20%	78%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	30	51	62
LT Vol	1	2	1	28
Through Vol	7	22	10	23
RT Vol	2	6	40	11
Lane Flow Rate	11	33	55	67
Geometry Grp	1	1	1	1
Degree of Util (X)	0.012	0.036	0.056	0.076
Departure Headway (Hd)	4.038	4.006	3.629	4.078
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	883	890	982	877
Service Time	2.079	2.048	1.67	2.107
HCM Lane V/C Ratio	0.012	0.037	0.056	0.076
HCM Control Delay	7.1	7.2	6.9	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.2

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	28	23	11
Future Vol, veh/h	0	28	23	11
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	30	25	12
Number of Lanes	0	0	1	0
Approach	SB			
Opposing Approach	NB			
Opposing Lanes	1			
Conflicting Approach Left	WB			
Conflicting Lanes Left	1			
Conflicting Approach Right	EB			
Conflicting Lanes Right	1			
HCM Control Delay	7.4			
HCM LOS	A			