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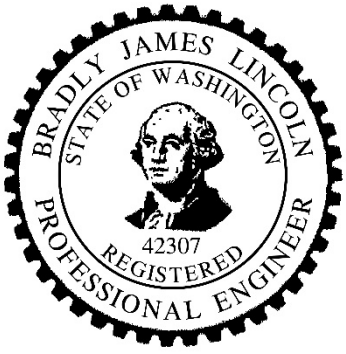
Colvin Development
Traffic Impact Analysis

Jurisdiction: City of Marysville

March 2022



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1. DEVELOPMENT IDENTIFICATION

Kimley-Horn and Associates, Inc. has been retained to provide a traffic impact analysis for the Colvin Development. This report is intended to provide the City of Marysville, Snohomish County, and the Washington State Department of Transportation (WSDOT) with the necessary trip generation, trip distribution and level of service information to facilitate their reviews of the development. The Colvin Development is located on the west side of Densmore Road, south of E Sunnyside School Road in the City of Marysville. A site vicinity map is included in Figure 1.

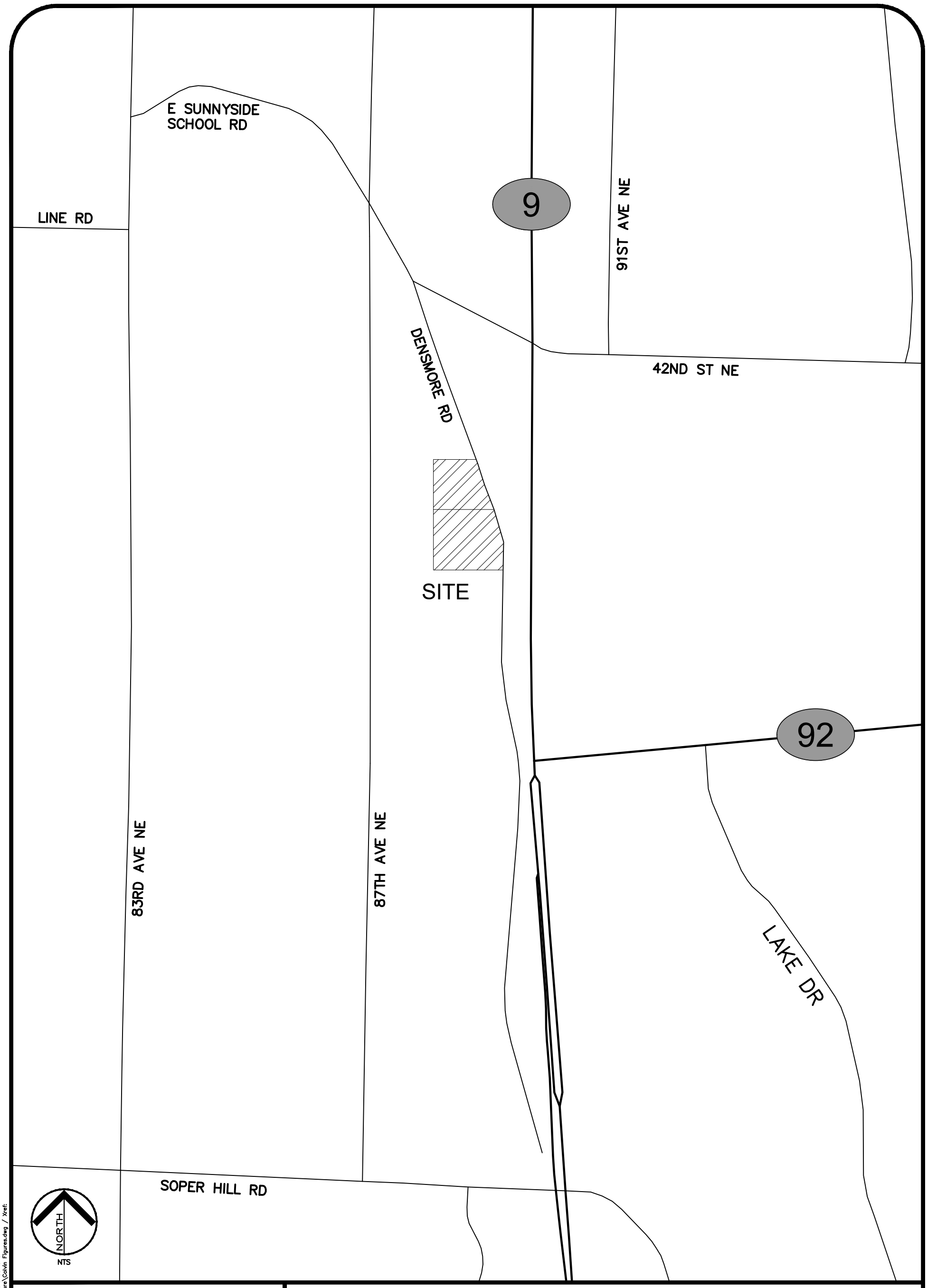
The Colvin Development is proposed to consist of 29 single-family detached residential units. There is currently 1 existing single-family detached residential units on-site that will be removed and is creditable towards the Colvin Development. Therefore, this report has been completed for 28 net new single-family detached residential units. The site is proposed to have one access to Densmore Road and will provide stub-roads to adjacent parcels.

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.

2. METHODOLOGY

The analysis contained in this report is based on the City of Marysville Traffic Impact Analysis Guidelines. The trip generation calculations are based on average trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition (2021)*. The trip distribution is based on the City of Marysville trip distribution for the *Whiskey Ridge North* area. Intersection operational analysis is typically required for intersections impacted by 25 PM peak-hour trips generated by the development.

The City of Marysville Traffic Impact Analysis Guidelines typically require analysis for the opening year and a 6-year horizon year beyond the opening year. A reasonable opening year for the Colvin Development is the year 2024. Intersection analysis has therefore been performed for the 2024 opening year and 2030 horizon year as part of this report. The Colvin Development is proposed to have one access to Densmore Road and will also include stub-road connections to adjacent parcels.



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DEVELOPMENT SITE

FIGURE 1

SITE VICINITY MAP

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The level of service analysis at the study intersection has been performed in accordance with the *Highway Capacity Manual 6th Edition (HCM)*. Congestion is generally measured in terms of level of service (LOS). Road facilities and intersections are rated between LOS A and LOS F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. A summary of the level of service criteria is included in Table 1.

Table 1: Level of Service Criteria

Level of Service[1]	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized and Roundabout 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 at two-way stop-controlled intersections is based on the average delay for the stopped approach with the highest delay. The level of service at all-way stop-controlled intersections and signalized intersections is based on the average delay for all vehicles. The level of service analysis for unsignalized and signalized intersections has been performed utilizing the *Synchro 11.1, Build 1* software. City of Marysville identifies acceptable level of service for the intersections that have been evaluated as part of this report as LOS D.

[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

Trip generation calculations were performed using trip generation data contained in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition (2021)* for Land Use Code (LUC) 210, Single-Family Detached Housing. The City of Marysville requires the use of a trip generation rate of 1.0 PM peak-hour trips per unit. There are 29 single-family units proposed to be constructed with 1 existing single-family unit being removed the development will therefore result in 28 new single-family units. The trip generation of the Colvin Development is summarized in Table 2.

Table 2: Trip Generation Summary

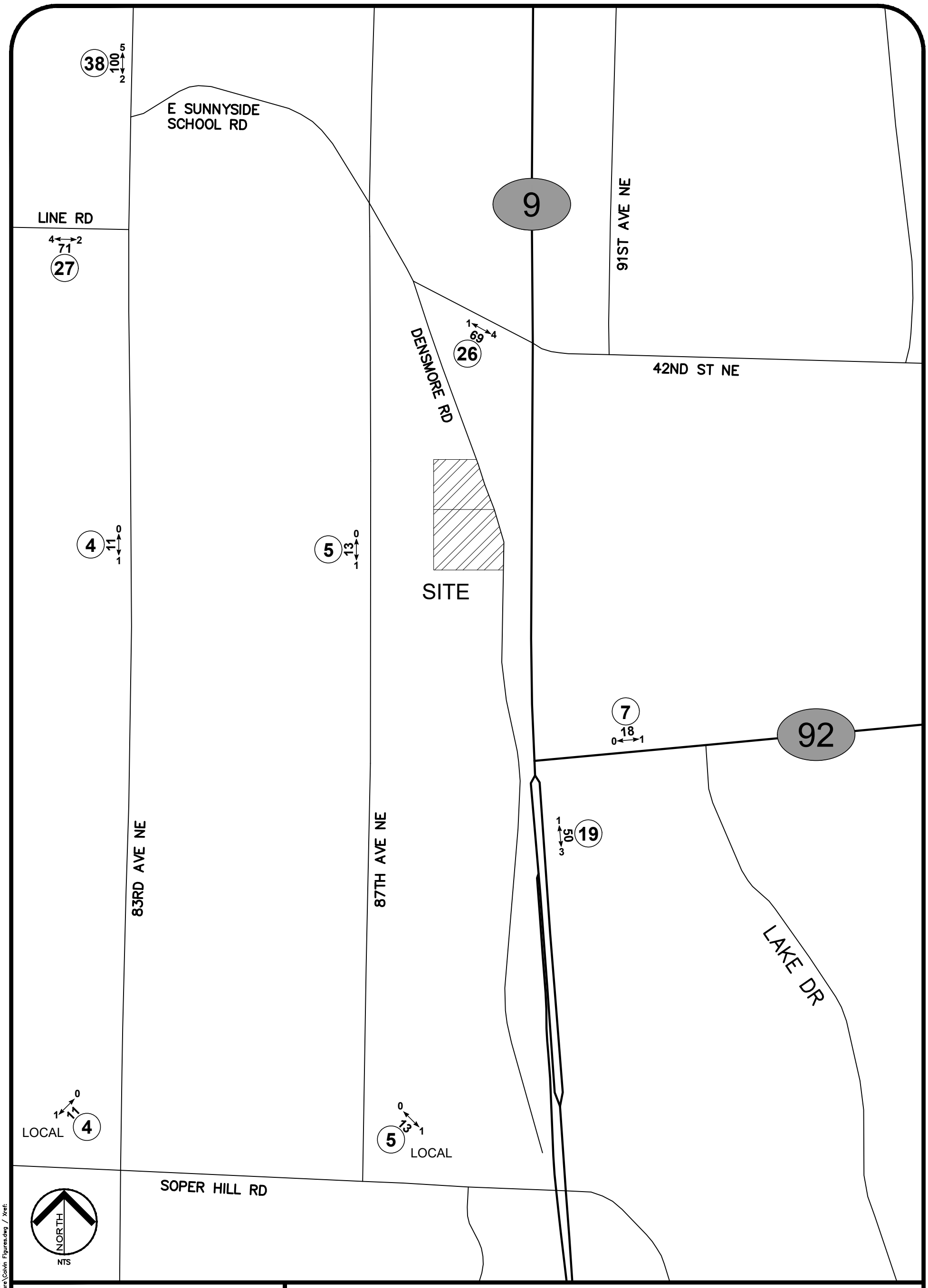
28 New Single-Family Residential Units	Average Daily Trips			AM Peak-Hour Trips			PM Peak-Hour Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Generation Rate	9.43 trips per unit			0.70 trips per unit			1.00 trips per unit		
Splits	50%	50%	100%	26%	74%	100%	63%	37%	100%
Trips	132.02	132.02	264.04	5.10	14.50	19.60	17,64	10.36	28.00

The Colvin Development is anticipated to generate approximately 264 new average daily trips with approximately 20 AM peak-hour trips and 28 PM peak-hour trips.

4. TRIP DISTRIBUTION

The trip distribution for the proposed Colvin Development is based on distributions provided by the City of Marysville for the *Whiskey Ridge North* area. It is anticipated that 38% of the trips generated by the development will travel to and from the north along 83rd Avenue NE. Approximately 27% of the trips generated by the development will travel to and from the west along 44th Street NE. It is estimated that 28% of the trips generated by the development will travel to and from the south, four percent along 83rd Avenue NE, five percent along 87th Avenue NE, and nineteen percent along SR-9. The remaining 7% of the trips generated by the development are anticipated to travel to and from the east along SR-92. No significant changes in the development trip distribution are expected to occur in the horizon year distribution. The only change will be a portion of the trips utilizing the future connection of SR-9 at SR-92 intersection.

Separate trip distributions for the 2024 opening year and 2030 horizon year have been prepared for the AM and PM peak-hours. The AM and PM peak-hour 2024 opening year trip distributions are shown in Figure 2 and Figure 3, respectively. The AM and PM peak-hour 2030 horizon year distributions are shown in Figure 4 and Figure 5, respectively.



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AWDT
AM ↔ PEAK — NEW DAILY TRAFFIC / NEW PEAK-HOUR TRIPS

XX — TRIP DISTRIBUTION %

FIGURE 2

OPENING YEAR
TRIP DISTRIBUTION
WEEKDAY AM PEAK-HOUR

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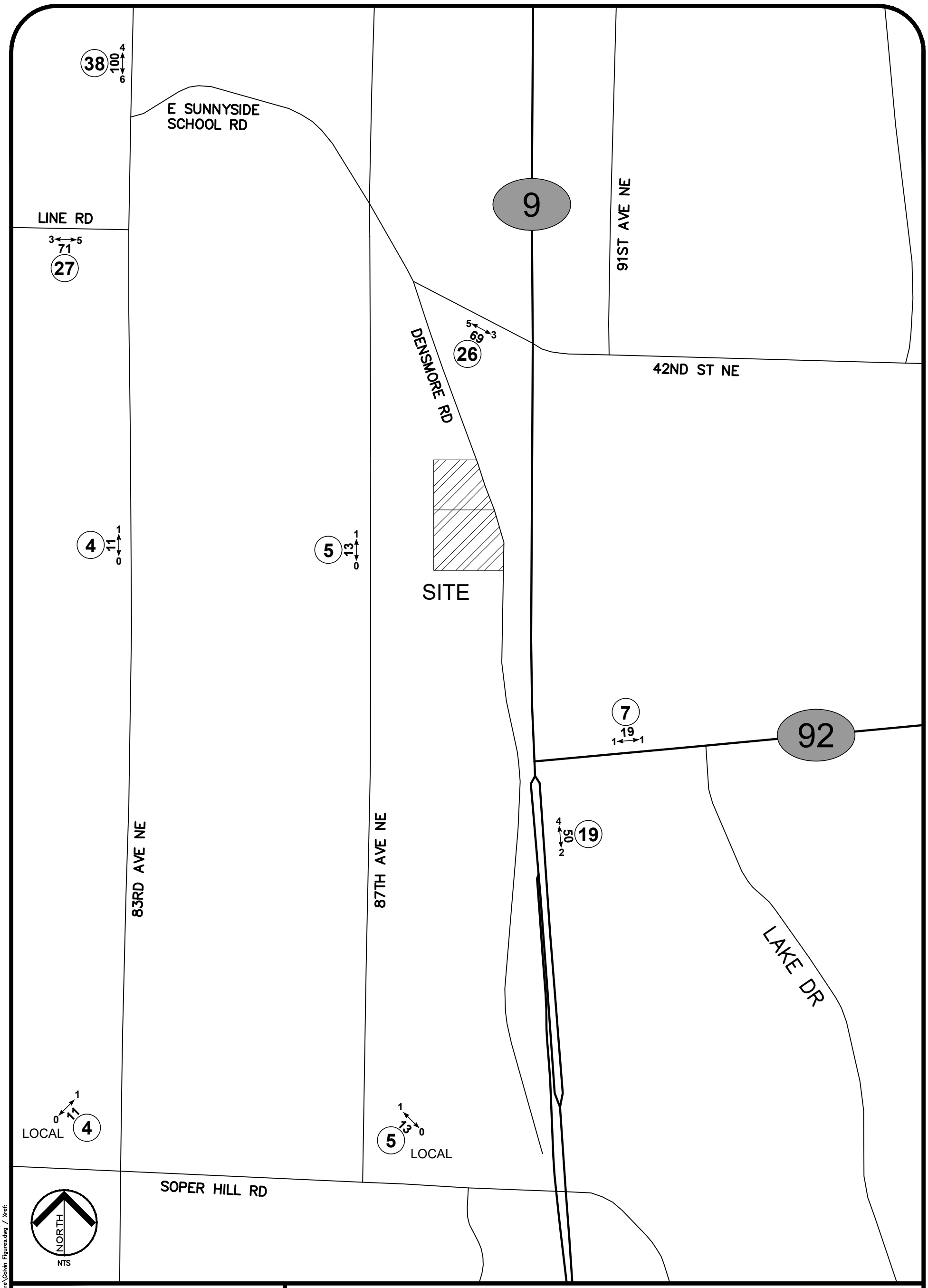

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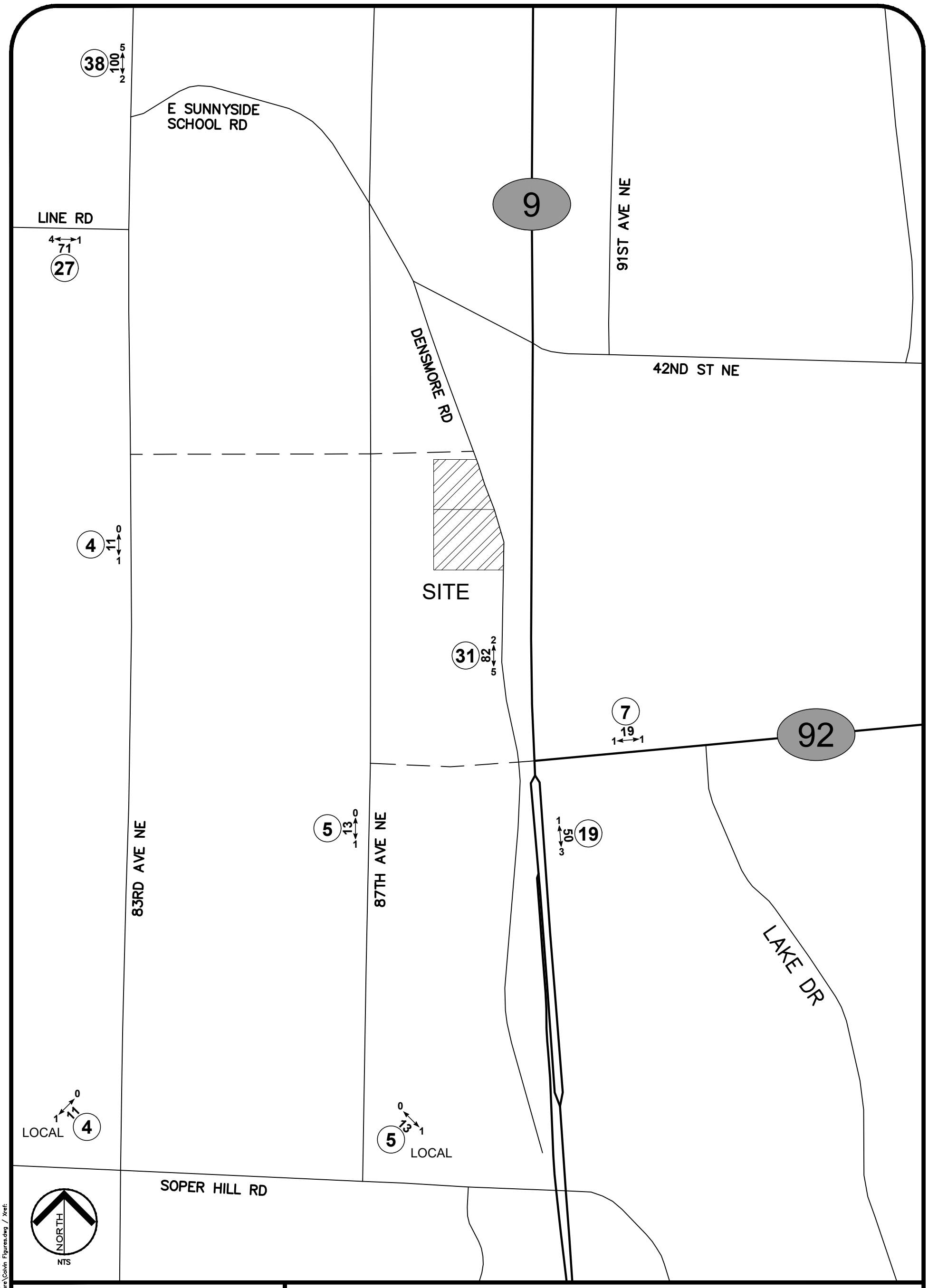
AWDT / PM ↔ PEAK — NEW DAILY TRAFFIC / NEW PEAK-HOUR TRIPS

(XX) — TRIP DISTRIBUTION %

FIGURE 3

OPENING YEAR
TRIP DISTRIBUTION
WEEKDAY PM PEAK-HOUR

Kimley»Horn



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LEGEND

AWDT
AM ↔ PEAK
NEW DAILY TRAFFIC
NEW PEAK-HOUR TRIPS

XX
TRIP DISTRIBUTION %

FIGURE 4

HORIZON YEAR
TRIP DISTRIBUTION
WEEKDAY AM PEAK-HOUR

Kimley»Horn

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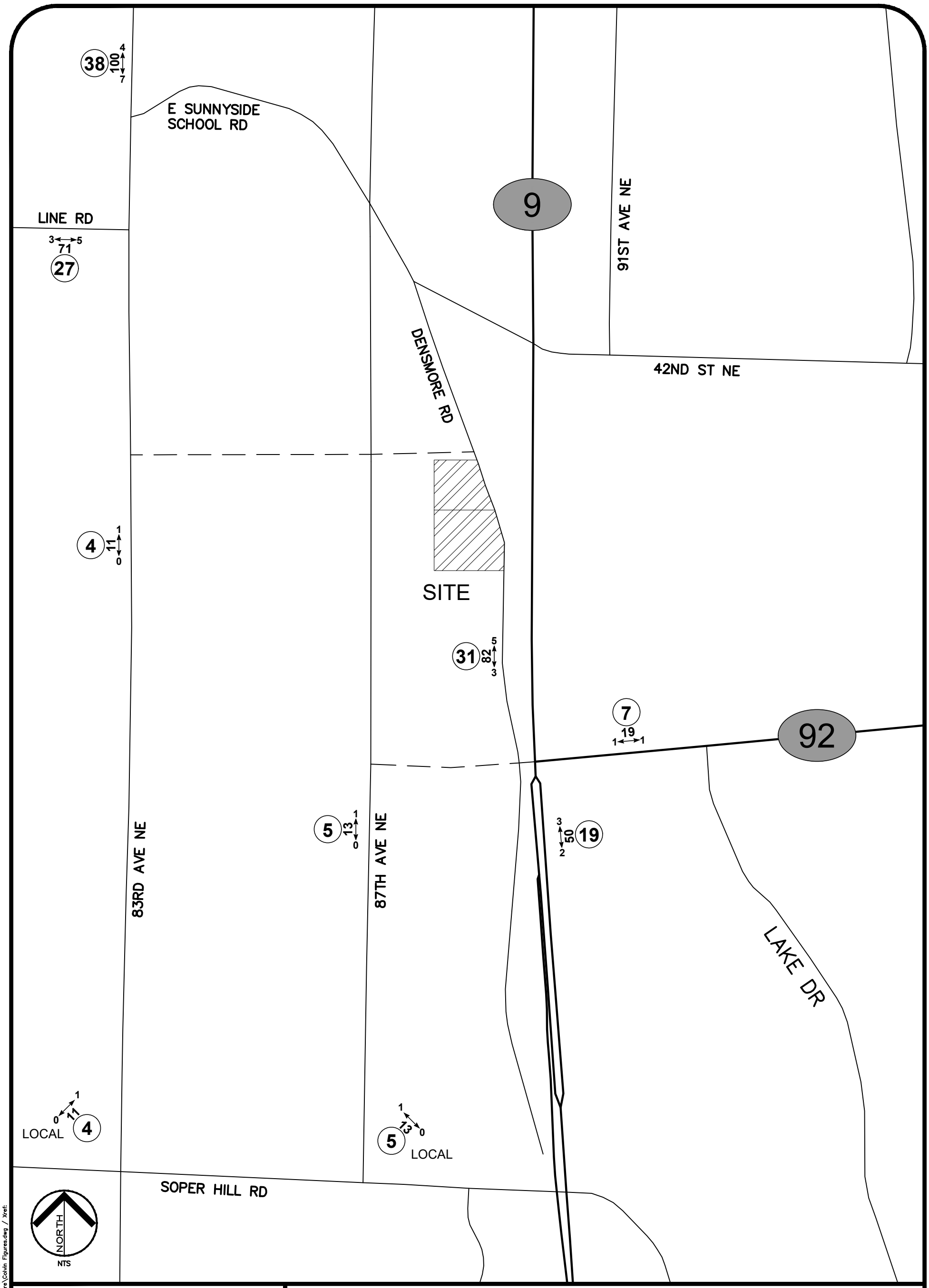

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LEGEND

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

XX
TRIP DISTRIBUTION %

FIGURE 5

HORIZON YEAR
TRIP DISTRIBUTION
WEEKDAY PM PEAK-HOUR

Kimley»Horn

Date: March 22, 2022 - 10:48am / User: Saruncs.Farler
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The interlocal agreement between the City of Marysville and Snohomish County requires detailed development trip turning movement data at Snohomish County Key Intersections impacted with three or more directional trips on any approach or departure. There are not any Snohomish County Key Intersections within Snohomish County Transportation Service Area A (TSA A) that will be impacted by 3 directional peak-hour trips generated by the Colvin Development.

5. INTERSECTION LEVEL OF SERVICE ANALYSIS

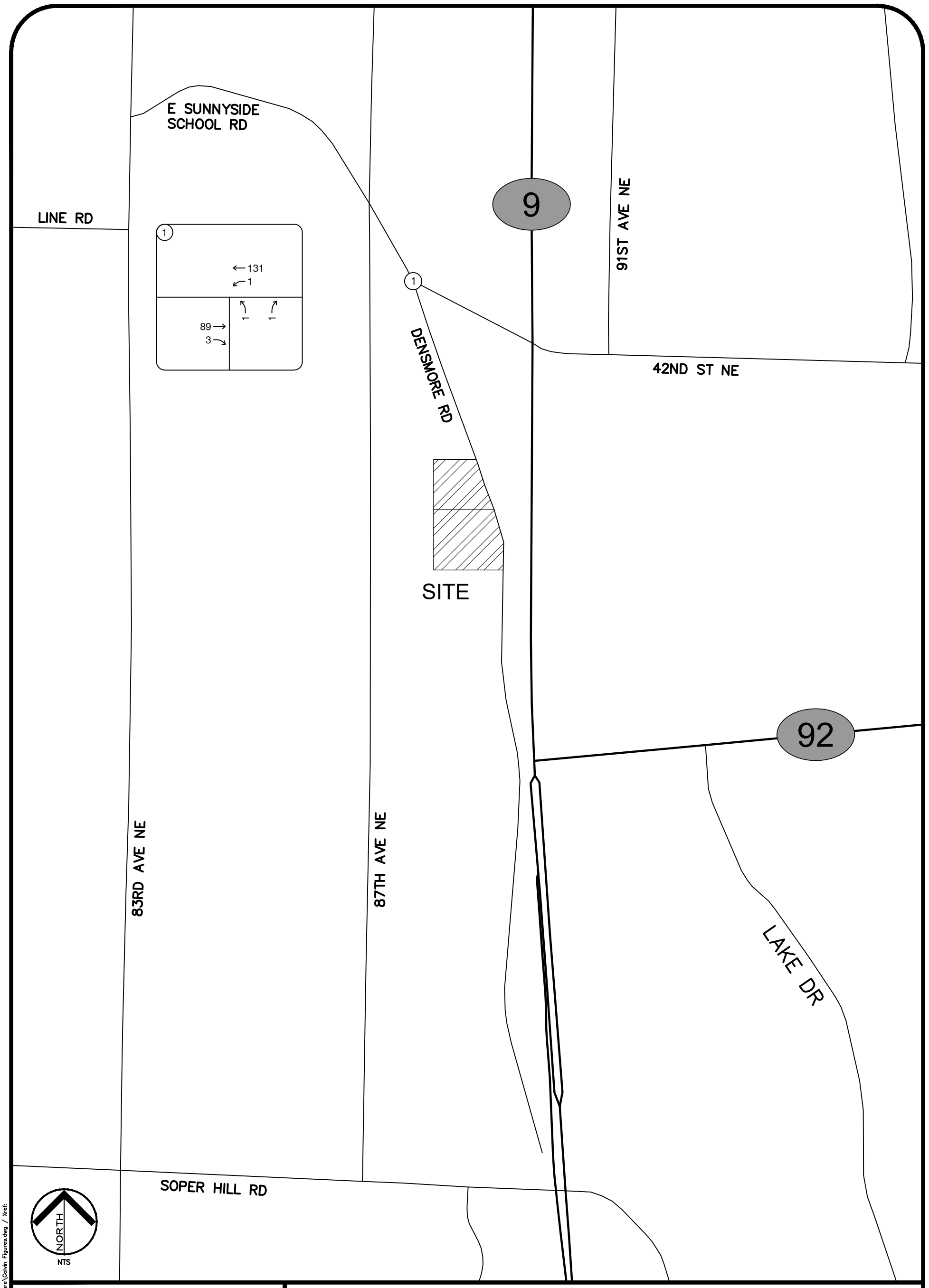
The City of Marysville typically Traffic Impact Analysis Guidelines typically require intersections impacted with 25 peak-hour trips to be analyzed for the PM peak hour. The only intersections that will be impacted by 25 PM peak-hour trips generated by the Colvin Development are the intersection of E Sunnyside School Road at Densmore Road and the site access to 87th Avenue NE. The intersection of E Sunnyside School Road at Densmore Road has been analyzed for the existing, 2024 opening year, and 2030 horizon year conditions. The site access to Densmore Road has not been analyzed since there are currently only 6 PM peak-hour trips currently utilizing Densmore Road south of E Sunnyside Road.

5.1 Turning Movement Calculations

The existing turning movements for the intersection of E Sunnyside Road at Densmore Road were collected by the independent count firm Traffic Data Gathering (TDG) in November 2021. The 2024 baseline and 2030 baseline turning movements have been calculated by applying a 3% annually compounding growth rate. The 2024 opening year and 2030 horizon year turning movements have been calculated by adding the trips generated by the Colvin Development to the 2024 baseline and 2030 baseline turning movements. The turning movements are shown in the following figures:

- Figure 6: Existing Turning Movements
- Figure 7: 2024 Baseline Turning Movements
- Figure 8: 2024 Opening Year Turning Movements
- Figure 9: 2030 Baseline Turning Movements
- Figure 10: 2030 Horizon Year Turning Movements

The existing count data and turning movement calculations are included in the attachments.



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LEGEND

XXX→ PM PEAK-HOUR TURNING MOVEMENTVOLUME

FIGURE 6

2022 EXISTING TURNING MOVEMENTS PM PEAK-HOUR

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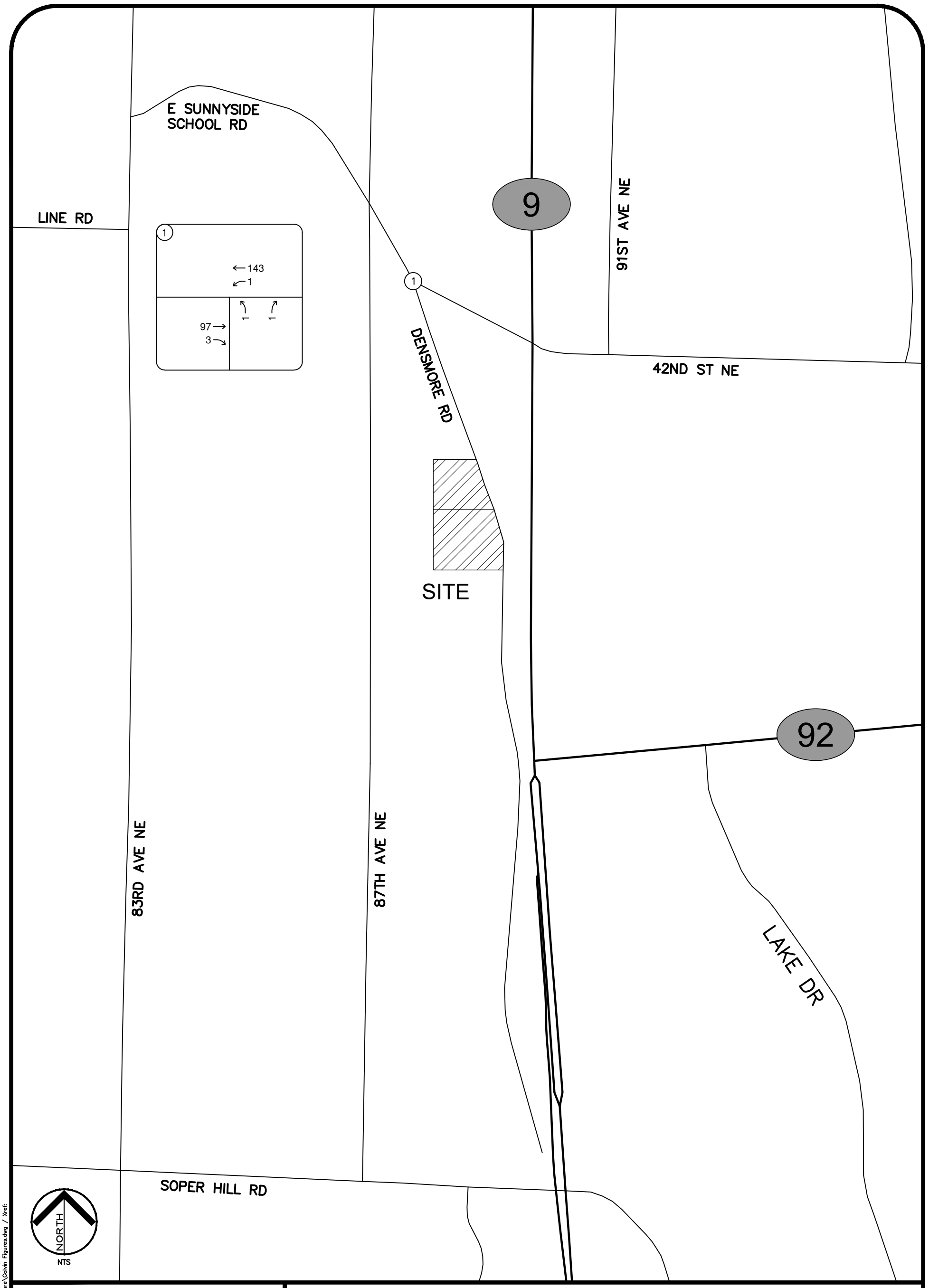

COLVIN

CITY OF MARYSVILLE

LEGEND

XXX→ PM PEAK-HOUR TURNING MOVEMENTVOLUME

FIGURE 7

2024 BASELINE
TURNING MOVEMENTS
PM PEAK-HOUR

Kimley»Horn

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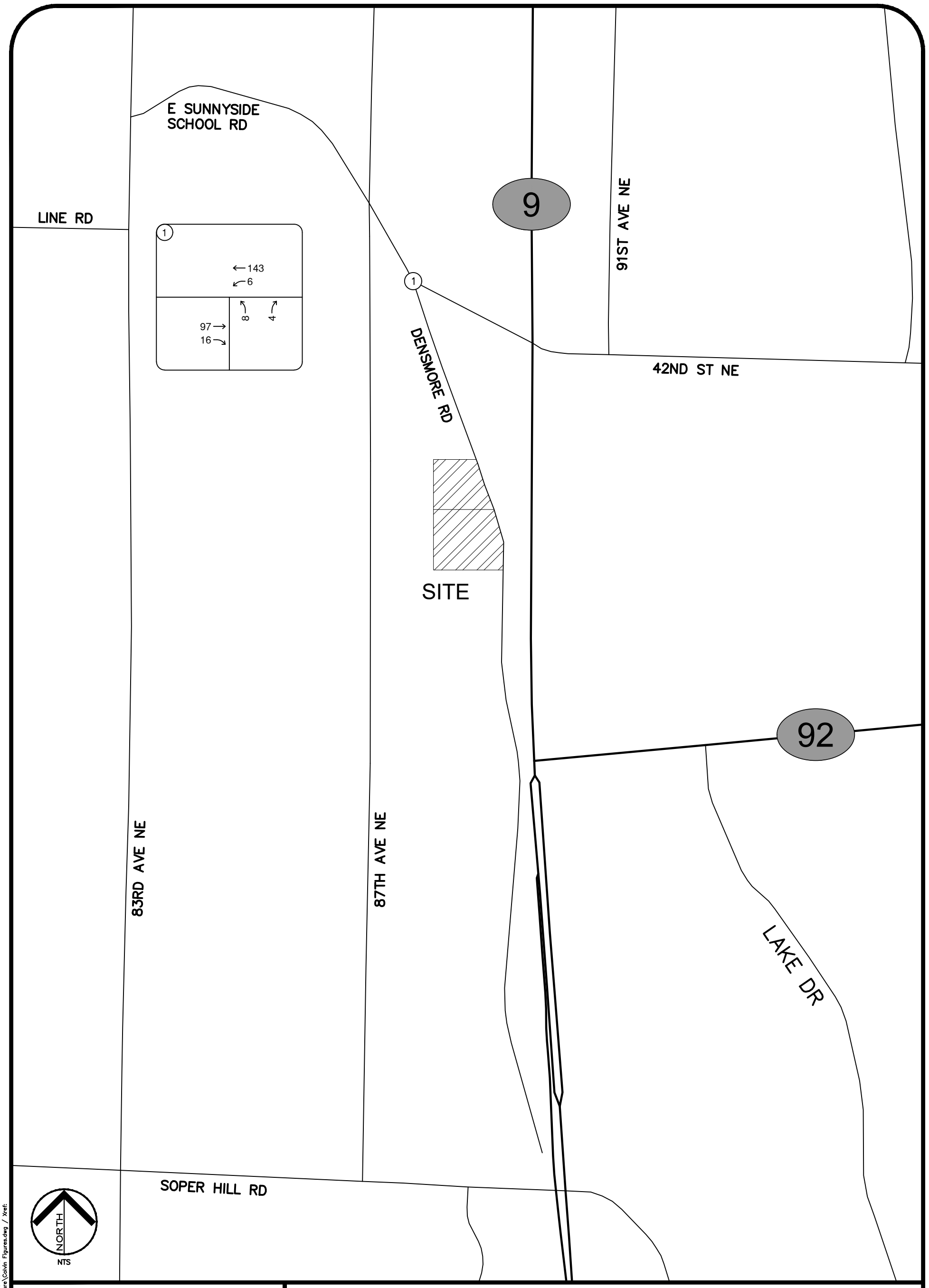

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CITY OF MARYSVILLE

LEGEND

XXX→ PM PEAK-HOUR TURNING MOVEMENTVOLUME

FIGURE 8

2024 OPENING YEAR
TURNING MOVEMENTS
PM PEAK-HOUR

Kimley»Horn

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E SUNNYSIDE SCHOOL RD

LINE RD

9

91ST AVE NE

42ND ST NE

DENSMORE RD

1

171
1

116
4

1
1

SITE

92

83RD AVE NE

87TH AVE NE

LAKE DR

SOPER HILL RD

NORTH

NTS

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COLVIN

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LEGEND

XXX→ PM PEAK-HOUR TURNING MOVEMENTVOLUME

FIGURE 9

2030 BASELINE
TURNING MOVEMENTS
PM PEAK-HOUR

Kimley»Horn

E SUNNYSIDE SCHOOL RD

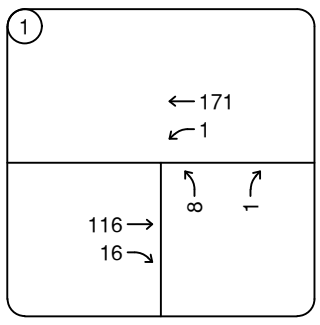
LINE RD

9

91ST AVE NE

42ND ST NE

DENSMORE RD



SITE

92

83RD AVE NE

87TH AVE NE

LAKE DR

SOPER HILL RD

NORTH

NTS

COLVIN

CITY OF MARYSVILLE

LEGEND

XXX → PM PEAK-HOUR TURNING MOVEMENTVOLUME

FIGURE 10

2030 HORIZON YEAR
TURNING MOVEMENTS
PM PEAK-HOUR

Kimley»Horn

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5.2 Level of Service

The level of service calculations have been performed for the intersection of E Sunnyside School Road at Densmore Road using the existing stop-control on Densmore Road. The intersection is anticipated to operate at LOS B under the existing, 2024 opening year, and 2030 horizon year conditions. The site access to Densmore Road is anticipated to operate at LOS A due to the limited volume on Densmore Road. The level of service calculations are included in the attachments.

6. TRAFFIC MITIGATION FEES

The City of Marysville has an interlocal agreement with the City of Lake Stevens for impacts to the intersection of Soper Hill Road at 87th Avenue NE. The City of Marysville also has an interlocal agreement with Snohomish County that provides for the payment of traffic mitigation fees to Snohomish County for City of Marysville developments. The City of Marysville has an understanding with WSDOT for the payment of traffic mitigation fees.

6.1 City of Marysville

The City of Marysville standard traffic mitigation fees have been calculated using the residential rate of $6,300 per unit. The Colvin Development is proposed to include 28 net new units, which results in a total standard traffic mitigation fee of $176,400.00.

6.2 City of Lake Stevens

The City of Marysville and the City of Lake Stevens have an interlocal agreement to fund improvements to Soper Hill Road from SR-9 to 83rd Avenue NE. The City of Marysville *Whiskey Ridge North* trip distribution shows trips travelling to and from the south on SR-9 would use E Sunnyside School Road. The intersection of Soper Hill Road at 87th Avenue NE is therefore not anticipated to be impacted by any trips generated by the Colvin Development. Payment of traffic mitigation fees identified as part of the interlocal agreement with the City of Lake Stevens should therefore not be a condition of the Colvin Development.

6.3 Snohomish County

The City of Marysville and Snohomish County have an interlocal agreement that provides for the payment of traffic mitigation for impacts to Snohomish County roadways by developments located in the City of Marysville. Traffic mitigation fees are based on predetermined area impacts or impacts to actual improvement projects. According to Section 3(a)2 of the S*nohomish County Traffic Worksheet and Traffic Study Requirements for Developments in the City of Marysville*, traffic mitigation fees for development in the City of Marysville are only required if Snohomish County improvements in the Transportation Needs Report are impacted with three directional peak-hour trips. The trip distribution shows that there are not any Snohomish County improvement projects in the Transportation Needs Report impacted by 3 directional PM peak-hour trips generated by the Colvin Development. Snohomish County traffic mitigation fees should therefore not be a condition of the Colvin Development.

6.4 Washington State Department of Transportation

WSDOT traffic mitigation fees are typically required for the City of Marysville developments if improvement projects identify on WSDOT's Exhibit C list are impacted by 3 directional PM peak-hour trips and if the improvement project has not already been completed or advertised for construction bid. There are not any WSDOT improvement projects on the Exhibit C list that will be impacted by 3 or more directional PM peak-hour trips generated by the Colvin Development. WSDOT traffic mitigation fees should therefore not be a condition of the Colvin Development.

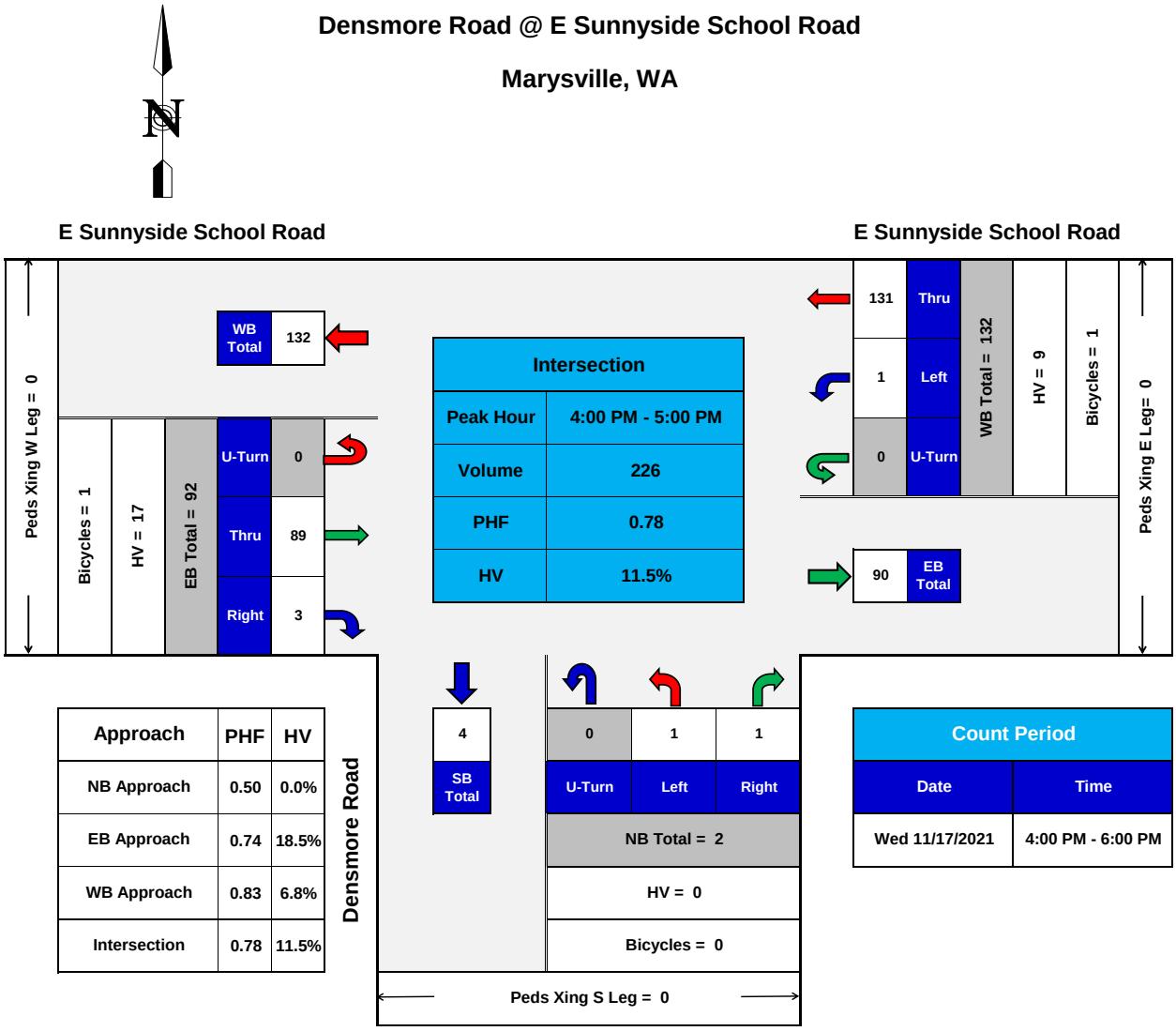
7. CONCLUSIONS

The Colvin Development is proposed to consist of 29 single-family detached units. There is one existing unit on the site that will be removed and is creditable to the development. The 28 new units of the Colvin Development are anticipated to generate approximately 264 new average weekday daily trips with approximately 20 new AM peak-hour trips and 28 new PM peak-hour trips. The intersection of E Sunnyside School Road at Densmore Road is anticipated to operate at LOS B under the 2024 opening year and 2030 horizon year conditions. The City of Marysville traffic impact fees should be $176,400.00. Traffic mitigation fees according to the City of Lake Stevens, Snohomish County or WSDOT interlocal agreements should not be conditions of the Colvin Development.

Count Data and Turning Movement Calculations

Densmore Road @ E Sunnyside School Road

Marysville, WA



Approach	PHF	HV
NB Approach	0.50	0.0%
EB Approach	0.74	18.5%
WB Approach	0.83	6.8%
Intersection	0.78	11.5%

Count Period	
Date	Time
Wed 11/17/2021	4:00 PM - 6:00 PM

PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY

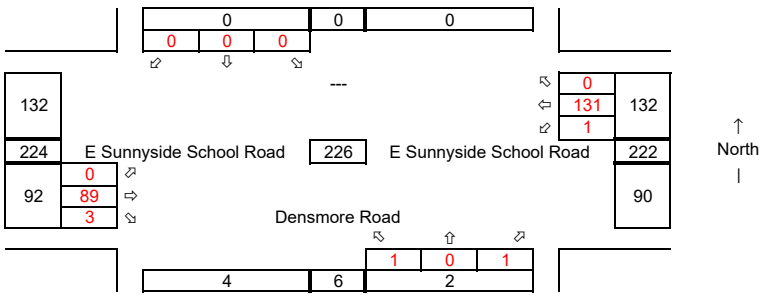
TRAFFIC DATA GATHERING

Synchro ID: 1

Existing
Average Weekday
PM Peak Hour

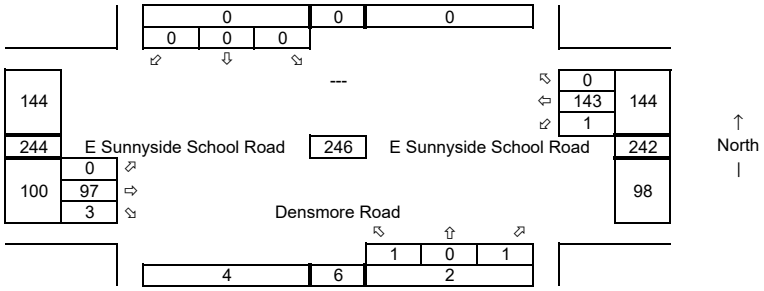
Year: **11/17/2021**

Data Source: **TDG**

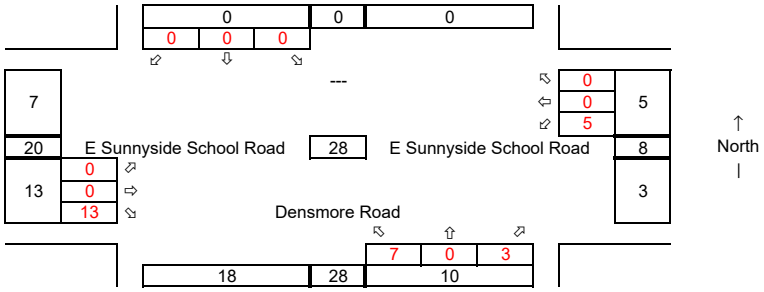


Future without Project
Average Weekday
PM Peak Hour

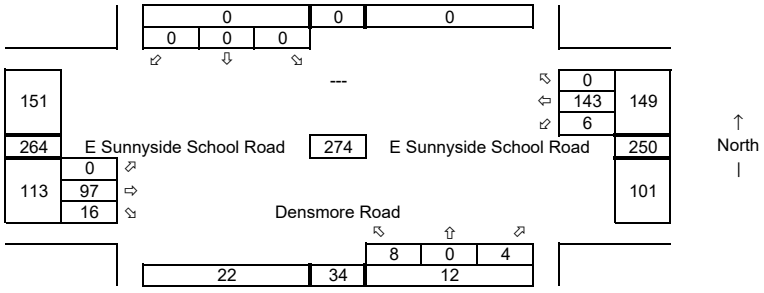
Year: 2024
Growth Rate = 3.0%
Years of Growth = 3
Total Growth = 1.0927



Total Project Trips
Average Weekday
PM Peak Hour



Future with Project
Average Weekday
PM Peak Hour



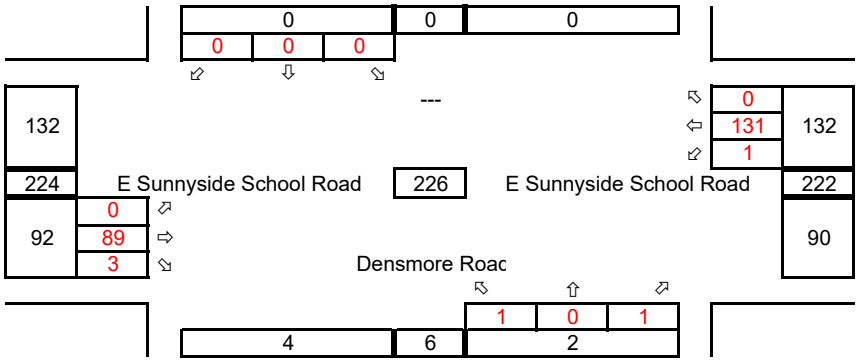
1 128th St SE @ 3rd Ave SE

Synchro ID: 1

Existing
Average Weekday
PM Peak Hour

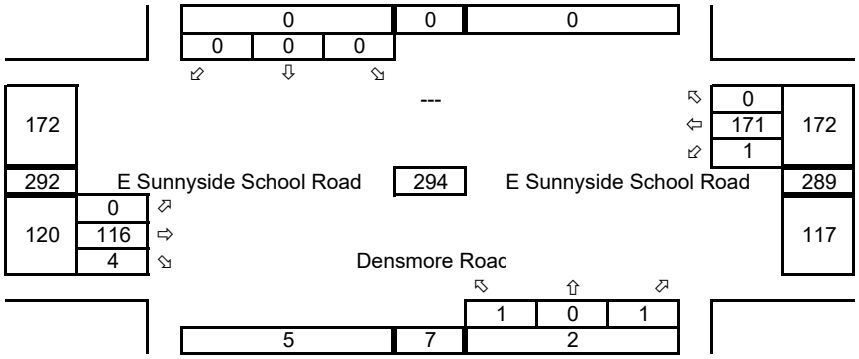
Year: **11/17/2021**

Data Source: **TDG**

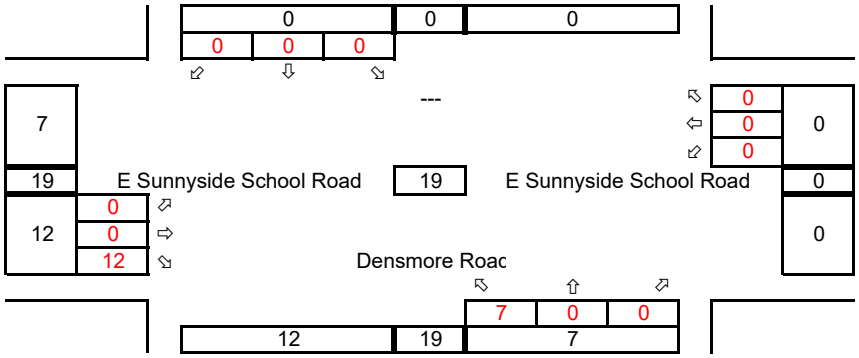


Future without Project
Average Weekday
PM Peak Hour

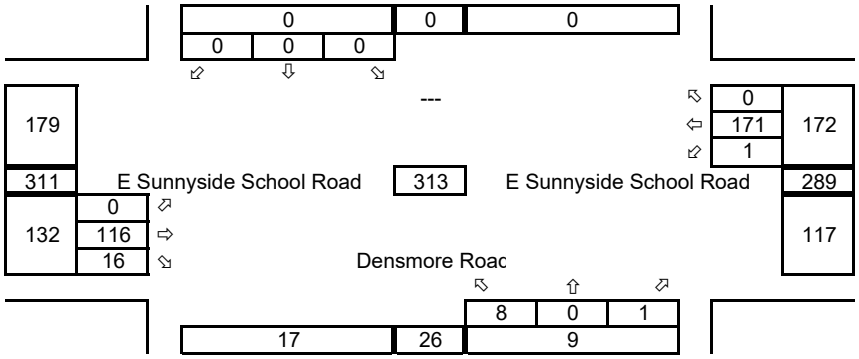
Year: 2030
Growth Rate = 3.0%
Years of Growth = 9
Total Growth = 1.3048



Total Project Trips
Average Weekday
PM Peak Hour



Future with Project
Average Weekday
PM Peak Hour



Level of Service Calculations

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	89	3	1	131	1	1
Future Vol, veh/h	89	3	1	131	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	114	4	1	168	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	118	0	286	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	170	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1410	-	684	910
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1410	-	683	910
Mov Cap-2 Maneuver	-	-	-	-	683	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	780	-	-	1410	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	9.6	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	3	1	143	1	1
Future Vol, veh/h	97	3	1	143	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	124	4	1	183	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	311	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1398	-	661	898
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1398	-	660	898
Mov Cap-2 Maneuver	-	-	-	-	660	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	761	-	-	1398	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	9.7	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	16	6	143	8	4
Future Vol, veh/h	97	16	6	143	8	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	124	21	8	183	10	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	145	0	334	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1378	-	641	888
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1378	-	637	888
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	703	-	-	1378	-
HCM Lane V/C Ratio	0.022	-	-	0.006	-
HCM Control Delay (s)	10.2	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	4	1	171	1	1
Future Vol, veh/h	116	4	1	171	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	149	5	1	219	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	154	0	373	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1368	-	609	869
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	793	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1368	-	608	869
Mov Cap-2 Maneuver	-	-	-	-	608	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	792	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	715	-	-	1368	-
HCM Lane V/C Ratio	0.004	-	-	0.001	-
HCM Control Delay (s)	10.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	16	1	171	8	1
Future Vol, veh/h	116	16	1	171	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	149	21	1	219	10	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	170	0	381	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1349	-	602	860
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	793	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1349	-	601	860
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	792	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	622	-	-	1349	-
HCM Lane V/C Ratio	0.019	-	-	0.001	-
HCM Control Delay (s)	10.9	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

WSDOT Exhibit C List

LIST OF PROGRAMED
WSDOT PROJECTS IN
SNOHOMISH COUNTY
AS OF Nov. 2008

County ID#	TSA	SR	MP1	MP2	Title/Description	Design/ Construction year	Total Cost (M)	TOTAL CAPA-CITY (ADT)	PRESENT VOLUME	RESERVE CAPACITY (ADT)	TRUE CONTRI-BUTION PER ADT	50% TRIP END DEDUCTION	TAX DEDUCTION	Proportionate Share Per Development Generated ADT
DOT-11	D	5	186.42	186.42	128th ST SW Interchange - Construct Loop Ramps / HOV Bypass	2014	$13.30	99,000	65,000	34,000	$391.18	$195.15	$40.98	$154.17
DOT-01	A	5	205.85	205.85	172nd Street NE (SR 531) Interchange improvements, SB loop ramp, bridge widening	2009	$41.00	90,000	34,900	55,100	$744.10	$372.05	$63.25	$308.80
DOT-30	E	9	1.66	4.04	212th Street SE to 176th Street SE, widen to 5 lanes	2011	$80.80	54,000	21,000	33,000	2,448.48	$1,224.24	$183.64	$1,040.60
DOT-56	B	9	16.48	17.49	Lundeen Parkway to SR-92, Widen to 4 lanes & RT-LT lanes	2009	$38.90	54,000	24,000	30,000	$1,296.67	$648.34	$123.18	$525.16
DOT-37	B	9	17.96	17.96	SR-9 at 60th Street NE, add LT & RT lanes at Tee intersection	2011	$2.95	54,000	36,000	18,000	$163.89	$81.95	$13.91	$67.94
DOT-22	A	9	18.88	19.46	SR 9/SR 528 Intersection improvements, Signal & Channelization	2010	$17.13	54,000	36,000	18,000	$951.67	$475.83	$80.89	$394.94
DOT-57	A	9	20.51	20.59	SR-9/84th Street NE intersection improvements, LT & RT lanes	2011	$17.13	54,000	12,000	42,000	$407.88	$203.93	$55.06	$148.87
DOT-58	A	9	26.00	26.09	SR-9/SR-531/172nd St. NE intersection improvement, Roundabout	2011	$15.60	54,000	11,000	43,000	$362.80	$181.40	$45.87	$135.53
DOT-33	B	92	1.46	1.46	SR-92 at 113th Avenue NE, Roundabout	2009	$2.36	54,000	19,600	34,000	$68.60	$34.30	$6.52	$27.78
DOT-31	B	92	1.73	1.73	SR-92 at Callow/Grade Road, turn lanes to SR-92	2009	$1.90	54,000	19,600	34,400	$55.24	$27.62	$5.25	$22.37
DOT-46	C	203	22.36	22.38	SR-203 at North High Rock/Tualco Roads, Re-align cross street for I/S and add LT & RT lanes on SR-203	2009	$3.34	18,000	13,000	5,000	$688.00	$344.00	$73.48	$270.52
DOT-36	C	203	23.01	23.01	Ben Howard Rd channelization, LT lanes on SR-203	2009	$1.07	54,000	13,000	41,000	$26.10	$13.05	$2.87	$10.18
DOT-16	E	522	13.82	16.61	Paradise Lake Road I/C, Stage 3, new interchange	2010	$27.95	81,000	48,000	33,000	$847.03	$423.52	$63.53	$359.99
DOT-17	E	522	16.80	20.41	Paradise Lake Road to Snohomish River, Bridge, Stage 2, widen to 4 lanes	2009	$33.48	80,000	21,900	58,100	$576.25	$288.13	$43.22	$244.91
DOT-28	C	522	20.50	24.68	Snohomish River Bridge to SR 2, widen to 4 lanes	2010	$171.98	80,000	20,000	60,000	$2,866.33	$1,433.17	$315.30	$1,117.87

LIST OF PROGRAMED
WSDOT PROJECTS IN
SNOHOMISH COUNTY
AS OF Nov. 2008

County ID#	TSA	SR	MP1	MP2	Title/Description	Design/ Construction year	Total Cost (M)	TOTAL CAPA-CITY (ADT)	PRESENT VOLUME	RESERVE CAPACITY (ADT)	TRUE CONTRI-BUTION PER ADT	50% TRIP END DEDUCTION	TAX DEDUCTION	Proportionate Share Per Development Generated ADT
DOT-19	F	524	5.87	9.50	24th Avenue SE to I-405, widen to 5 Lanes	2012	$33.34	54,000	15,300	38,700	$861.50	$430.75	$77.54	$353.21
DOT-20	F	524	5.87	9.50	I-405 to Royal Ann Road, widen to 5 Lanes	2011	$71.06	54,000	15,300	38,700	$1,836.18	$918.09	$165.26	$752.83
DOT-60	E	524	6.79	6.79	Larch Way intersection, LT lanes, signal	2009	$2.59	54,000	15,300	38,700	$66.93	$33.47	$5.02	$28.45
DOT-59	D	525	6.25	6.25	SR-525/88th St. SW intersection improvements, NBRT, NBLT & SBLT	2011	$3.70	25,700	17,000	8,700	$425.29	$212.64	$89.31	$123.33
DOT-49	A	530	17.30	17.30	SR-530 at Old 99, Roundabout	2011	$8.00	18,000	10,000	8,000	$1,000.00	$500.00	$85.00	$415.00
DOT-62	A	530	19.71	19.71	211th Place NE, Intersection Roundabout	2011	$6.10	24,000	15,000	9,000	$677.78	$338.89	$57.61	$281.28
DOT-52	A	531	1.95	2.25	SR-531/Jct. Freestad Road Intersection, LT lanes	2011	$1.55	18,000	7,900	10,100	$140.14	$70.07	$11.92	$58.15
DOT-05	A	531	7.00	8.59	43rd Ave. NE to 67th Ave. NE, NE, Widen to 5 lanes (Arlington)	2014	$20.78	54,000	11,000	43,000	$483.14	$241.57	$41.07	$200.50
DOT-53	A	532	5.25	5.90	270th St. NW Vic. To 72nd Ave. NW, EB Climbing Lane, intersection improvements & signal.	2009	$19.00	54,000	16,000	38,000	500	$250.00	$28.75	$221.25
DOT-54	A	532	6.45	9.79	64th Ave. NW to 12th Ave. NW, Climbing lane & LT Lanes	2010	$22.40	54,000	17,000	37,000	$605.41	$302.70	$33.75	$268.95
					TAX DEDUCTIONS									
					TSA A = 17%									
					TSA B = 19%									
					TSA C = 22%									
					TSA D = 21%									
					TSA E = 15%									
					TSA F = 18%									