

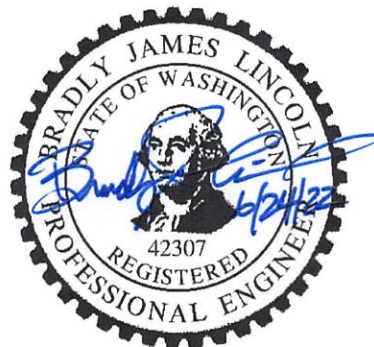
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Brodie Traffic Impact Analysis

Jurisdiction: City of Marysville

June 2022



090222088

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1. DEVELOPMENT IDENTIFICATION

Kimley-Horn and Associates, Inc. has been retained to provide a traffic impact analysis for the proposed Brodie 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 and trip distribution information to facilitate their reviews of the development. The Brodie development is located on the north side of 60th Street NE, east of 87th Avenue NE. A site vicinity map is included in Figure 1. The development is proposed to consist of 45 single-family detached residential units. The development is proposed to include a public road that will connect to 60th Street NE and provide for future connectivity to the north.

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.

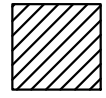
2. METHODOLOGY

The analysis contained in this report is based on the City of Marysville Traffic Impact Analysis Guidelines (TIAG) which require the analysis of arterial/arterial or other functionally classified street intersections impacted with 25 or more PM peak-hour trips. 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 Whiskey Ridge North area distribution provided by the City of Marysville.



**BRODIE
45 SINGLE-FAMILY
DETACHED UNITS**

LEGEND



DEVELOPMENT SITE

**FIGURE 1
VICINITY MAP**

CITY OF MARYSVILLE

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3. TRIP GENERATION

The trip generation calculations for the Brodie development are based on national statistics published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition (2021)*. The average trip generation rates for ITE Land Use Code (LUC) 210, Single-Family Detached Housing, has been used for the proposed units. It is important to note that the City of Marysville identifies a trip generation rate of 1 PM peak-hour trip per unit, which is higher than the ITE trip generation rate for single-family detached housing. The trip generation of the 45 units of the Brodie development is summarized in Table 1.

Table 1: Trip Generation Summary

45 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 ¹		
Splits	50%	50%	100%	26%	74%	100%	63%	37%	100%
Trips	212.18	212.17	424.35	8.19	23.31	31.50	28.35	16.65	45.00

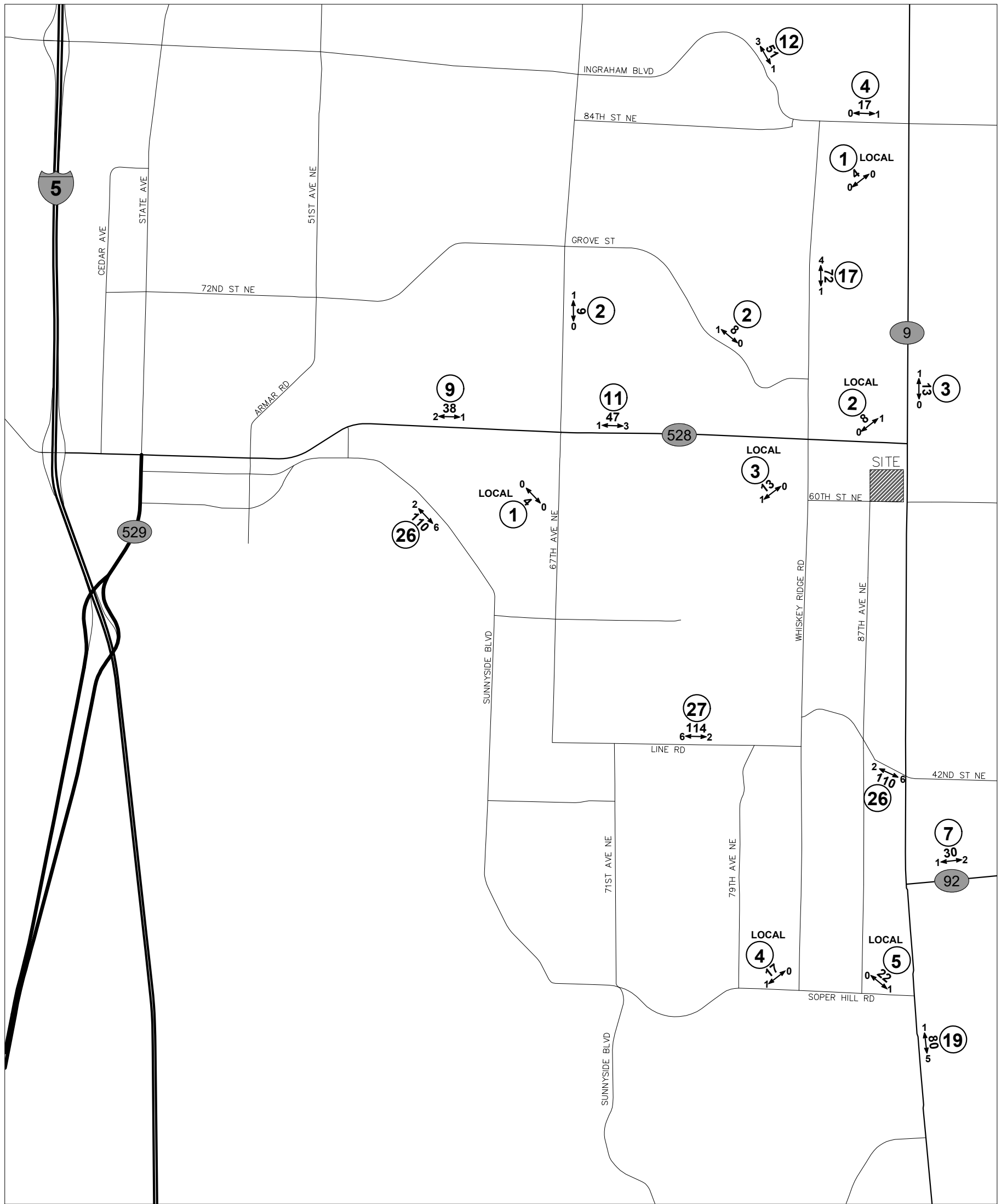
The Brodie development is anticipated to generate approximately 424 average daily trips (ADT) with approximately 32 AM peak-hour trips and 45 PM peak-hour trips.

4. TRIP DISTRIBUTION

The distribution of trips generated by the Brodie 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 west, twenty-seven percent along 44th Street NE and eleven percent along SR-528. Approximately 31% of the trips generated by the development will travel to and from the east, twenty-six percent along E Sunnyside School Road and five percent along SR-528. Approximately 19% of the trips generated by the development will travel along 83rd Avenue NE north of SR-528. The remaining 12% of the trips generated by the development are expected to travel to and from local areas in the site vicinity, nine percent north of Soper Hill Road and three percent west of 83rd Avenue NE. The overall trip distribution is not anticipated to change with planned roadway improvements in the site vicinity. Detailed trip distributions are shown in Figure 2 for the AM peak-hour and Figure 3 for the PM peak-hour.

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 an approach or departure. There are not any Snohomish County key intersections that are anticipated to be impacted by 3 directional peak-hour trips generated by the Brodie development.

¹ This trip generation rate is based on City of Marysville guidelines.



**BRODIE
45 SINGLE-FAMILY
DETACHED UNITS**

LEGEND

AWDT
AM ← PEAK

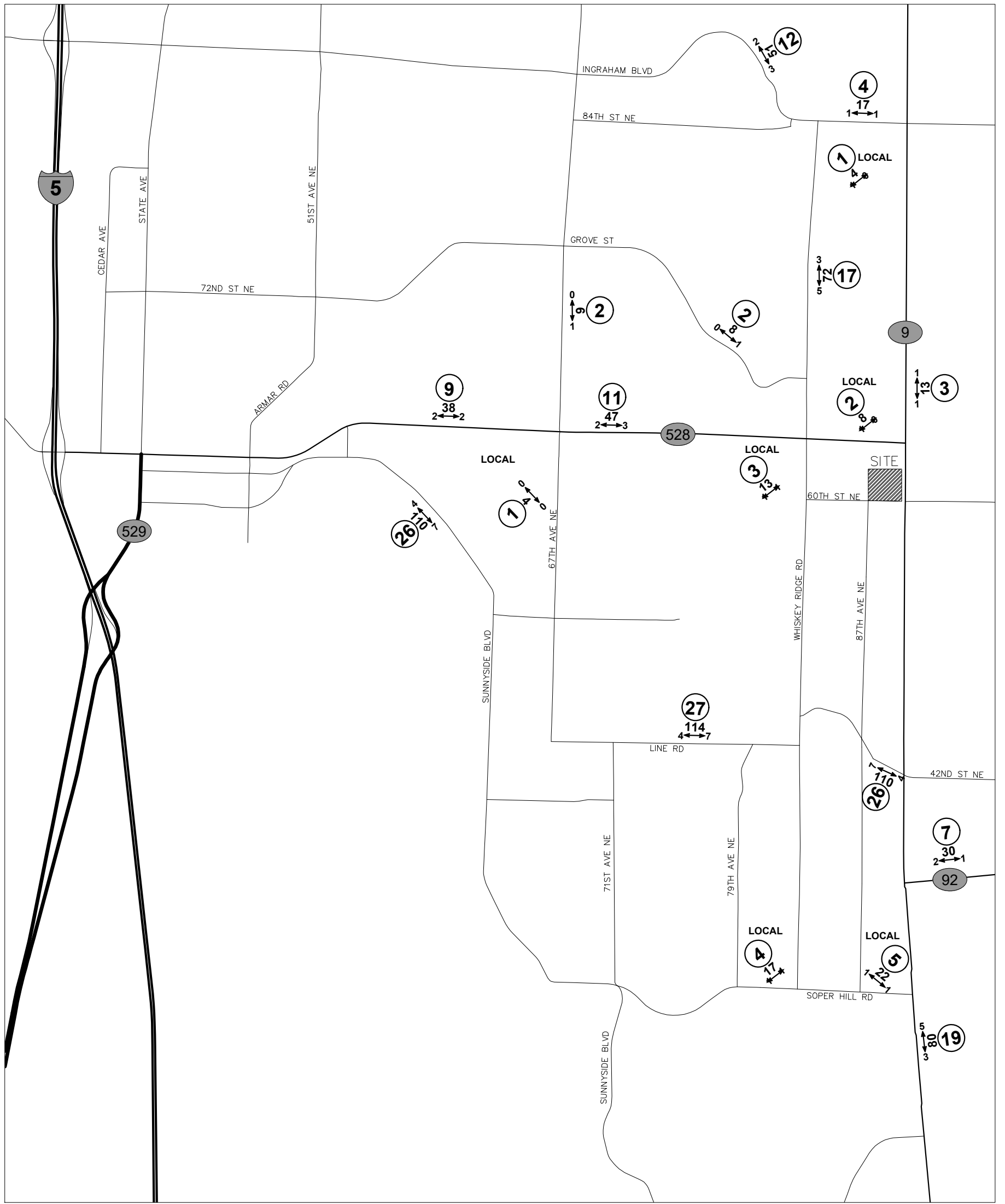
NEW DAILY TRAFFIC
NEW PEAK-HOUR TRIPS



TRIP DISTRIBUTION

FIGURE 2
DEVELOPMENT
TRIP DISTRIBUTION
AM PEAK-HOUR

CITY OF MARYSVILLE



**BRODIE
45 SINGLE-FAMILY
DETACHED UNITS**

CITY OF MARYSVILLE

LEGEND

AWDT
PM ← PEAK

NEW DAILY TRAFFIC
NEW PEAK-HOUR TRIPS



TRIP DISTRIBUTION

FIGURE 3
DEVELOPMENT
TRIP DISTRIBUTION
PM PEAK-HOUR

5. INTERSECTION ANALYSIS

The City of Marysville TIAG identifies that intersections of two arterial/arterial or functionally classified streets impacted with 25 peak-hour trips generated by a development are to be analyzed. The only intersections impacted with 25 peak-hour trips generated by the Brodie development are 60th Street NE at the site access and at 87th Avenue NE. The City of Marysville does not classify 60th Street NE and therefore neither of these intersections meet the criteria identified in the City of Marysville TIAG.

It is important to identify that the intersection of 60th Street NE at 87th Avenue NE is a T-intersection with stop-control on the 87th Avenue NE approach and free movements along 60th Street NE. The only significant traffic volume on the east leg will be trips generated by the Brodie development. A qualitative review of the intersection is that the existing intersection control will be sufficient and allow adequate intersection operations with the Brodie development. The only traffic volume at the access to the Brodie development will be trips generated by the development. There are not anticipated to be opposing traffic volumes to cause any significant delay at the intersection of 60th Street NE at the access to the Brodie development.

6. TRAFFIC MITIGATION FEES

The City of Marysville has interlocal agreements with the City of Lake Stevens and Snohomish County that provides for the payment of traffic mitigation fees. The City of Marysville also has an understanding with WSDOT for the payment 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 Brodie development is proposed to include 45 units, which results in a total standard traffic mitigation fee of \$283,500.00.

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. Construction of roadway improvements east of 87th Avenue NE and a new roundabout at 87th Avenue NE are located in the City of Lake Stevens and identified in the interlocal agreement. The fees collected under this interlocal agreement are to be paid to the City of Marysville.

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 and therefore would not add any trips to the 87th Avenue NE and Soper Hill Road intersection. Therefore, the Brodie development should not be required to pay proportionate share fees under the interlocal agreement with the City of Lake Stevens.

6.3 Snohomish County

The City of Marysville and Snohomish County have an interlocal agreement that provides for the payment of traffic mitigation fees for impacts to Snohomish County roadways by City of Marysville developments. Traffic mitigation fees are based on predetermined area impacts or impacts to actual improvement projects. According to Section 3(a)2 of the *Snohomish County Traffic Worksheet and Traffic Study Requirements for Developments in the City of Marysville*, City of Marysville developments are only required to pay traffic mitigation fees for improvements in the Transportation Needs Report impacted with three directional peak-hour trips. An impact of 3 directional PM peak-hour trips generated by the Brodie development is equivalent to an impact of approximately 10%. The nearest improvement project on the Transportation Needs Report is along 88th Street NE west of 67th Avenue NE. The trip distribution shows more than 10% of trips generated by the Brodie development will be in that area; however, the detailed City of Marysville trip distribution (included in the attachments) shows only 5% of the trips generated by the Brodie development will impact 88th Avenue NE the Snohomish County improvement project. Snohomish County traffic mitigation fees should therefore not be a condition of the Brodie development.

6.4 Washington State Department of Transportation

WSDOT traffic mitigation fees for City of Marysville developments are typically required if improvement projects identify on the WSDOT Exhibit C list are impacted by 3 directional PM peak-hour trips generated by the development 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 with three or more directional PM peak-hour trips. WSDOT traffic mitigation fees should therefore not be a condition of the Brodie development.

7. CONCLUSIONS

The Brodie development is proposed to consist of 45 single-family detached units. The development is anticipated to generate approximately 424 average weekday daily trips with approximately 32 AM peak-hour trips and 45 PM peak-hour trips. The 45 single-family residential units will result in City of Marysville traffic impact fees of \$283,500.00. Traffic mitigation fees identified under the interlocal agreements with the City of Lake Stevens, Snohomish County, and WSDOT should not be required since the impacts of the development will not reach the thresholds identified in the interlocal agreements.

Attachments

WHISKEY RIDGE NORTH - EXISTING



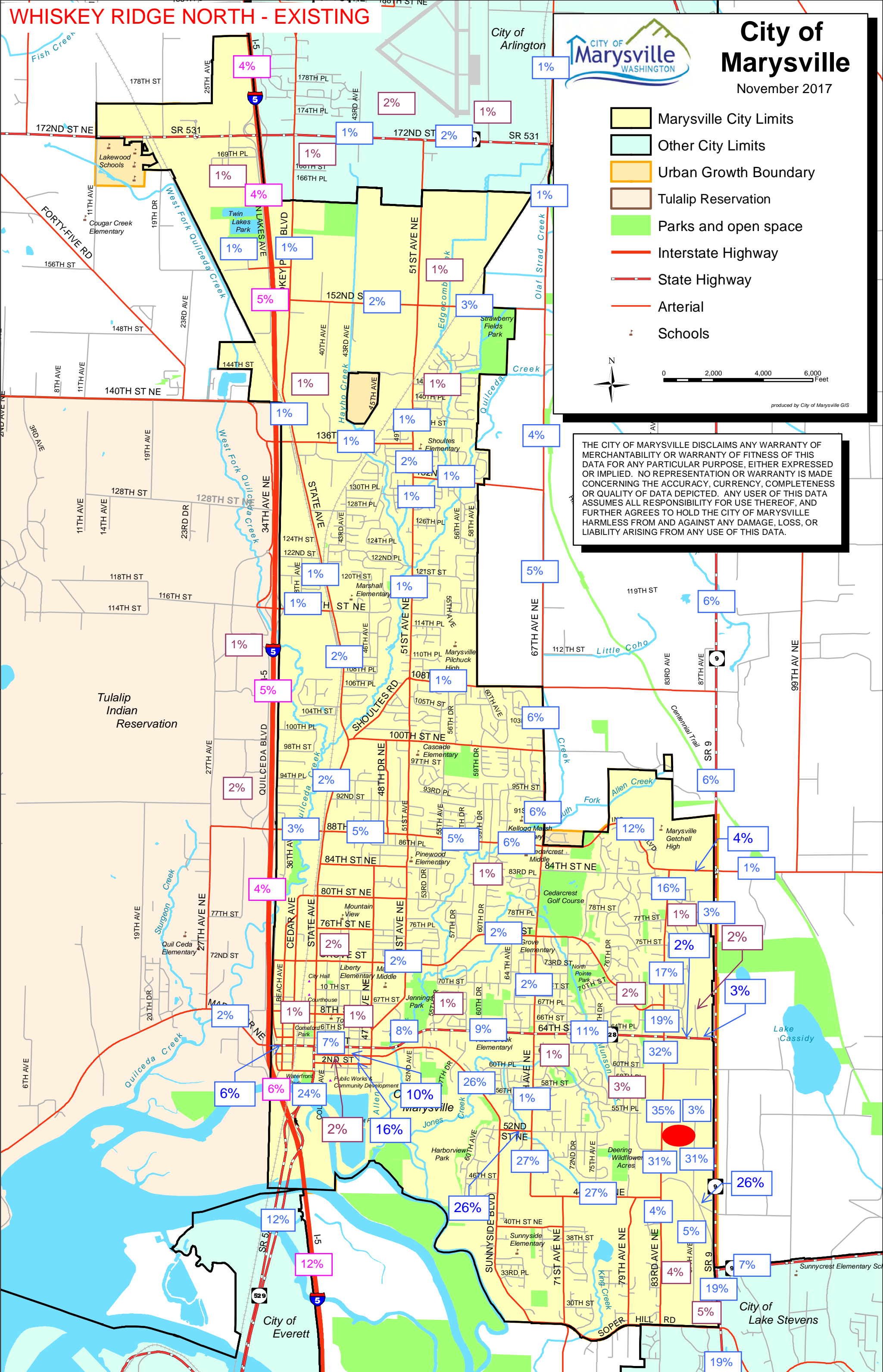
City of Marysville

November 2017

- Marysville City Limits
- Other City Limits
- Urban Growth Boundary
- Tulalip Reservation
- Parks and open space
- Interstate Highway
- State Highway
- Arterial
- Schools



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Tulalip Indian Reservation

City of Everett

City of Lake Stevens

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