

6. Transportation Element

1. INTRODUCTION

The Growth Management Act (GMA) changed the way that cities plan and develop comprehensive plans. The GMAQ requires fast growing counties and cities in them to develop comprehensive plans to manage that growth including consideration and coordination of transportation and capital facilities issues. The Act requires consistency among city, county and adjacent jurisdiction plans.

Pursuant to the GMA, transportation elements of comprehensive plans must include the following elements:

- Inventory of all transportation facilities and services (land, air and water including public transportation considerations);
- Land-use assumptions used for travel forecasts;
- Level-of-service (LOS) standards for all arterial and transit routes;
- Specified actions for bringing any facilities or services below established levels-of-service into compliance;
- Traffic forecasts (based on adopted land-use plan) to provide information on the location, timing, and capacity needs of the future; and
- Identification of system expansion needs and transportation system management needs to meet current and future demands.

This Transportation Element was initially developed by the Whatcom County Council of Governments. The City of Nooksack updated the chapter in 2004 and again in 2016.

2. TRANSPORTATION GOALS, POLICIES AND OBJECTIVES

The purpose of a plan's goals, policies and objectives is to provide a framework under which to develop and evaluate a system's alternatives. As an integral part of the planning process, the plan's goals and policies should be reviewed on a regular basis.

Citizen input is a key to identifying the needs of the community. A public meeting was held on September 30, 1993 to present draft transportation goals and objectives. The goals, policies and objectives in this plan were developed from both the results of that public meeting and subsequent input received from the citizens of Nooksack during the public hearing process.

Transportation goals and policies.

GOAL 1: Provide for safe and efficient movement of people and goods.

GOAL 2: Encourage energy conservation and minimize impacts on the environment.

- GOAL 3: Provide a transportation system that maintains the city's high quality of life for its citizens.
- GOAL 4: Cooperate and coordinate among federal, state and other local jurisdictions in transportation planning to ensure a seamless, effective system.
- GOAL 5: Coordinate with other jurisdictions, such as the state, in planning transportation improvements to make the best use of financial resources available for transportation improvements.
- GOAL 6: Provide for safe and convenient pedestrian and bicycle routes where feasible.
- GOAL 7: Where practical, provide for intermodal connections, such as truck/rail facilities.
- GOAL 8: Evaluate any new land use regulations for opportunities to improve or maintain the city's transportation system.
- GOAL 9: Re-evaluate traffic impacts to city streets from any substantial external change or shift, such as changes in trade and tariff laws, significant shifts in the Canadian economy, or any development with regional transportation implications.
- GOAL 10: Coordinate transportation planning and construction with neighboring jurisdictions and with the state.
- GOAL 11: Ensure that facilities necessary to maintain adopted levels of service (LOS) standards are provided concurrent with proposed development.

Policy: The City sets LOS “D” (V/C ratio of 0.8 during p.m. peak hours) for non-HSS state routes within city limits.

Policy: The City sets LOS “D” for city designated principal arterial streets.

Policy: The City should require concurrency review in conjunction with all development proposals and should not issue permits or approvals for proposed developments that would cause a local roadway to operate below the adopted LOS standard.

Policy: Where a proposed development would cause a local roadway to no longer operate at the adopted LOS standard, the City should require mitigation sufficient to ensure that the adopted LOS standard is maintained.

Policy: The City should coordinate with the Washington State Department of Transportation (WSDOT) with regard to state routes.

Policy: The City should participate in the regional planning processes coordinated by WCCOG.

Policy: The City should coordinate with Whatcom County with regard to county arterials and collectors.

3. EXISTING CONDITIONS

Analysis of existing conditions provides a baseline of information about the City's transportation system: existing traffic conditions, roadway classifications and conditions, available non-automobile transportation options and currently identified needs. An inventory of these items, required by the Growth Management Act, provides a basis for developing the city's transportation plan.

The city's most significant environmental features affecting historic and future development are the Nooksack and Sumas Rivers and their associated flood plains. The Burlington-Northern and Santa Fe rail line also significantly limits transportation alternatives within Nooksack. The city is linked to the state highway system by SR 9 (Nooksack Avenue) and SR 544 (Columbia Street). Other roads providing significant access to Nooksack include South Pass Road and Breckenridge Road from the east, Tom Road from the west, and Gillies Road from the north (Figure 6-1. Street System). The existing land uses are described in the land use chapter (Chapter 3).

Roadway Classification Systems

There is a direct relationship between functional classification and roadway design standards. R.C.W. 35.78.10 and R.C.W. 47.26.180 require jurisdictions to adopt a street classification system consistent with state and federal requirements. Federal, State, and local agencies adopt roadway design standards to carry vehicular traffic volume at specific speeds.

Several different classification systems have been developed and are in use in Washington State. Each system has been developed to fill specific design, reporting, and funding requirements for different agencies. The Federal Highway Administration (FHWA) system is used to prioritize and fund federal highway projects. The WSDOT system is used to set State highway project priorities. The State Transportation Improvement Board (TIB) uses the system identified in R.C.W. 35.78 to determine funding eligibility for local projects.

Washington State DOT Classification System

WSDOT has developed five functional classifications for roads in rural areas based on R.C.W. 35.78.010 and R.C.W. 47.26.180. SR 9 (Nooksack Avenue) and SR 544 (Columbia Street) are classified as collectors by WSDOT.

Whatcom County Road Classification System

County roads entering the city are classified by Whatcom County Code 12.08.020. Whatcom County bases the classification system on the state and federal functional classification system. Whatcom County classifies Gillies Road and Breckenridge Road as minor collectors, and South Pass Road as a major collector.

Nooksack Functional Classification

R.C.W. 35.78.10 and R.C.W. 47.26.180 require each city to adopt, by ordinance, a functional classification system for its street system. R.C.W. 47.26.180 provides that cities outside Census-designated urban areas should develop one category of arterial streets. Nooksack is outside Census-designated urban areas and is eligible to designate one category of arterial street.

The city's ordinances do not include an ordinance defining the city's street network in terms of functional classification.

Access Control Classification

R.C.W. 47.50.010 requires that WSDOT designate all state routes with an access control classification. Highway access classifications identify the number of, and the distance between, entrances on a particular roadway segment. Because turning movements disturb the traffic flow, roads with fewer access points will accommodate higher speeds. In 1993, the WSDOT established highway access classifications for all state routes. SR 9 and SR 544 through Nooksack are identified as Class 4 highways. Class 4 roads typically post speed limits between 35 and 45 mph, with intersections spaced a minimum 0.5 miles apart and driveways generally required to be at least 250 feet apart.

Level of Service

Level of Service (LOS) is an engineering standard used to judge how well a road operates. Traditional LOS is based on the amount of time delay experienced by a motorist at a traffic signal or along a road segment. For roadways, LOS A means that the roadway is free-flowing and is free from traffic congestion. LOS F means that the route is so heavily congested that traffic no longer flows in a steady stream -- the number of cars exceeds the road's capacity.

Although levels of service are normally defined qualitatively, a standard set of engineering calculations assigns LOS rankings to roads, intersections, or other facilities. The roadway design, number of lanes, number of access points, amount of truck use, and intersection controls all affect the LOS of roadways and intersections.

The Growth Management Act requires that the transportation chapter of the county and city comprehensive plans set regionally coordinated level of service (LOS) standards on all principal

arterial and transit routes. The definition of level of service is left to the discretion of the local jurisdiction. HB1487 clarifies that WSDOT is responsible for establishment of LOS on Highways of Statewide Significance (HSS). The portions of SR9 and SR544 within Nooksack are not HSS.

Volume to Capacity Ratio

Nooksack levels of service will be defined in terms of the peak hour volume-to-capacity ratio (V/C ratio). The V/C ratio is calculated by dividing existing or projected volume of a particular road segment by its capacity in trips per peak hour. If the result ranges from zero (0) to one (1), the segment is operating within capacity. As the result nears one (1) and exceeds it, the section will begin to operate less efficiently and safely. Increasing volume-capacity- ratios imply that as growth occurs, road improvements may have to be made to maintain levels of service. While a relationship between V/C ratio and level of service is not strictly defined, the relationship shown in the table below is typically regarded as a standard and is considered as such in defining the level of service classifications for the City of Nooksack.

Table 6-1: Relationship between Level of Service and V/C Ratios

Level of Service	V/C Ratio Range	Typical Flow Conditions
A	0.0 to 0.5	Free flow; individual users virtually unaffected by presence of others in traffic stream.
B	0.5 to 0.7	Within range of stable flow, but presence of others in traffic stream begins to affect individual behavior and freedom to maneuver within traffic stream
C	0.7 to 0.8	Within range of stable flow; individual users significantly affected by presence of others
D	0.8 to 0.9	High density, but stable flow; speed and freedom to maneuver are severely restricted; ability to maneuver within traffic stream becomes difficult.
E	0.9 to 1.0	Operating conditions are at or near capacity level; all speeds reduced to low, uniform value; freedom to maneuver within traffic stream extremely difficult
F	Greater than 1.0	Forced or breakdown flow; amount of traffic approaching a point exceeds the amount that can transverse point and queue forms; operations within queue characterized by extremely unstable stop-and-go waves

Nooksack Level of Service

The busiest roads in Nooksack are SR9 (Nooksack Avenue), SR544 (Columbia Street), South Pass Road and W 2nd Street. These roads are operating at a LOS A. We therefore conclude that all of Nooksack’s transportation network is now operating at LOS A.

The Washington State Department of Transportation has adopted, as an element of its State Highway System Plan, LOS C for state highways in rural areas and LOS D for state highways in established or projected urban growth areas (UGAs). Whatcom County is proposing LOS C for county roads outside UGAs, and LOS D for county roads in the Nooksack UGA. As seen in the policies above, the City of Nooksack has adopted LOS D for city-designated arterial streets, and LOS matching WSDOT's LOS for state routes within city limits.

Existing Roadway Conditions

City Street Design Standards

The American Association of State Highway Traffic Officials (AASHTO) has adopted standards that are the bench marks for most road design standards and functional classification. The city has adopted by ordinance AASHTO standards for new roads as part of the city's subdivision development standards. These standards are not applicable to existing City roads.

Traffic Volumes

Traffic volumes represent the number of vehicles that pass a point on a road during a specified time. Because volumes vary seasonally and during the day, roads are normally designed to meet the highest volume (peak). Traffic volumes can be used in conjunction with the roadway design to determine the operating level of service of a road segment. Congestion occurs when the volume of traffic exceeds the road's capacity (the number of vehicles that theoretically should be able to use the road). As the population of a region grows, the volume of vehicles is likely to grow, increasing the potential for congestion on the facility. Identifying areas with existing high traffic levels is useful to judge where future traffic problems will occur.

Using household travel data traffic count data, the Whatcom Council of Governments (WCOG) developed a transportation model that addresses all roadways in the regional transportation system. Following its initial development, the WCOG model was calibrated to increase the reliability of the results generated. As part of the 2016 comprehensive plan update, WCOG utilized the model to generate average daily trip (ADT) and p.m. peak hour traffic volumes for all roadways in the regional system, including for those roadways within the City of Nooksack. See Table 6-2, below. Some roadway segments with relatively high levels of traffic include:

1. SR 9 (Nooksack Ave) at SR 544 (Columbia Street).
2. Madison Street between E. 1st Street and SR 9.
3. South Pass Road between Hertel Way and SR 9.
4. W. 2nd Street between Harrison Street and SR 544.

Table 6-2: Traffic Counts on Streets in the Regional System, 2013

Street Segment	ADT	ADT	Peak Hour	Peak Hour
	N or E	S or W	N or E	S or W
SR 9 (Nooksack Avenue)	3,373	3,744	257	279
E. Madison Street	736	730	71	70
SR 544 (Columbia / E. Main St.)	3,879	3,645	336	259

No local road segment in Nooksack experienced a p.m. peak hour volume greater than 300 vehicles. SR 9 southbound showed the highest volumes, with 279 vehicles during the p.m. peak hour. Operationally, this means that the city’s streets are operating at LOS C or better. See Table 6-3.

Table 6-3: Volume Over Capacity Ratios and Level of Service on Streets in the Regional System, 2013

Street Segment	V/C	V/C	LOS	LOS
	N or E	S or W	N or E	S or W
SR 9 (Nooksack Avenue)	0.41	0.37	A	A
E. Madison Street	0.09	0.19	A	A
SR 544 (Columbia / E. Main St.)	0.42	0.37	A	A

The WCOG model results for existing conditions are also shown in Figure 6-2 in terms of average daily trips and level of service.

Pavement Conditions

Figure 6-3 Pavement Conditions displays the street pavement conditions for Nooksack streets. This analysis was determined using a windshield survey and does not reflect an engineering analysis of pavement conditions. As seen in Figure 6-3, street pavement conditions vary from fair condition to very-good condition. Table 6-4 provides an inventory of existing street and sidewalk facilities. The table contains a list of streets, dimensions, pavement conditions, and presence of sidewalks.

Table 6-4: Nooksack Street Inventory

Street Name	Length (feet)	Width (feet)	Pavement Condition	Sidewalks
Allison Way	1,560	40	Very good	2 sides
Amareen Court	540	40	Very good	2 sides
Dennison Lane	500	28	Fair	1 side
E. 1 st Street	458	19	Fair	None
E. 2 nd Street (north of Madison)	457	18	Fair	None
E. 2 nd Street (south of Madison)	1,200	40	Very good	2 sides
E. 3 rd Street	850	18	Fair	None
E. 4 th Street	1,275	18	Fair	1 side (part)
E. Columbia Street	160	22	Good	None
E. Grant Street	334	21	Fair	1 side (part)
E. Lincoln Street	948	16-20	Fair	1 side (part)
E. Madison Street	2,300	31	Very good	2 sides
Garfield Street	327	18	Fair	None
Gillies Road	1,600	18	Fair	None
Harrison Lane	520	40	Very good	2 sides
Harrison Street	970	18-21	Good	None
Hayes Street	715	15-19	Fair	None
Hertel Way	2,075	21	Good	None
Jackson Court	540	40	Very good	2 sides
Jackson Street	635	18	Good	None
Nooksack Avenue	8,500	22-24	Fair to Good	1 side (part)
Nooksack Road	660	22	Good	None
S. Pass Road	330	22	Good	None
W. 1 st Street	1,235	15-20	Good	None/2sides
W. 2 nd Street	2,850	1/-20	Fair to good	1 side
W. 3 rd Street	1,800	13-18	Fair to good	1 side (part)
W. Columbia Street	1,750	24	Good	1 side
W. Lincoln Street	555	12	Good	None
W. Madison Street	857	17-20	Good	1 side (part)
Westview Place	540	40	Very good	2 sides

U.S. - Canadian Border Crossings

The international border crossing at Sumas is a source of both through and local traffic for Nooksack. It is one of two, 24-hour commercial and passenger vehicle crossings located in mainland Whatcom County. The crossing is located approximately 25 miles from Interstate 5, and one mile from Canadian Highway 1 (the Trans-Canada Highway). Nooksack is less than 10 miles south of the border crossing. Total crossings in Sumas are approximately one-fourth of the

number of crossings at the Blaine I-5 and Pacific Highway Crossings and about fifty percent greater than the number of crossings at Lynden-Aldergrove. Automobile crossings at Sumas account for approximately 17 percent of the total crossings at the four ports of entry from Blaine to Sumas. On average, over 2 million vehicles cross the border annually at the Sumas station. For those traveling to and from Bellingham, the route most utilized is over SR 539, SR 544 and SR 9.

Commute Patterns

The 2010 census provides a variety of information on the commute patterns and behavior of Nooksack residents. Tables 6-4, 6-5, and 6-6 reflect these patterns in a tabular format. As might be expected, the great majority, 86.7 percent, drive alone to commute to work.

Mode	Number	Percentage
Drive Alone	508	86.7%
Carpool	16	2.7%
Motorecycle	0	0.0%
Bicycle	0	0.0%
Walk	22	3.8%
Other	3	0.5%
Work at Home	37	6.3%
Total	586	100.0%

Source: *2010 Census of the Population*, U.S. Census Bureau.

Table 6-5. Hour Leaving Home for Work shows the hour Nooksack residents left their homes to go to work. Nearly one-half started their commute between 6:00 a.m. and 8:00 a.m., suggesting that most residents worked standard hours.

Time	People	Percentage	Cumulative Percentage
12:00 a.m. to 4:59 a.m.	28	5.1%	5.1%
5:00 a.m. to 5:59 a.m.	40	7.3%	12.4%
6:00 a.m. to 6:59 a.m.	137	25.0%	37.4%

Time	People	Percentage	Cumulative Percentage
7:00 a.m. to 7:59 a.m.	128	23.3%	60.7%
8:00 a.m. to 8:59 a.m.	69	12.6%	73.2%
9:00 a.m. 11 9:59 p.m.	147	26.8%	100.0%
Total	549	100.0%	100.0%

Source: 2010 Census of the Population, U.S. Census Bureau.

As shown in Table 6-6. Home to Work Travel Times, over 20 percent of the employed residents work under ten minutes from their place of residence and only 2 percent commute more than one hour. More than half of the residents commute less than 20 minutes.

Commute Time	People	Percentage	Cumulative Percentage
<10 min.	119	21.7%	21.7%
10-19 min.	191	34.8%	56.5%
20-29 min.	91	16.6%	73.1%
30-44 min.	115	21.0%	94.0%
45-59 min.	22	4.0%	98.0%
60+ min.	11	2.0%	100.0%
Total	549	100.0%	100.0%

Source: 2010 Census of the Population, U.S. Census Bureau.

The implication of this data is that most residents commute to work places outside the city limits. The high drive-alone rate may reflect a lack of transportation options for commuters and the lack of ride sharing programs to promote carpooling.

Accidents and Safety

Review of accident records from 2011 through 2015 revealed too few reported accidents to draw statistically significant conclusions. The majority of the reported accidents occurred primarily along Nooksack Avenue between Columbia Street and Lincoln Street.

Scenic and Recreational Highways Program

The 1991 Transportation Budget Bill (E.S.H.B. 1231) directed the review of all state routes for the Scenic and Recreation Highway System. The goal of the program was to identify those highways that have significant natural, cultural or recreational characteristics. SR 9 from Arlington to the Canadian Border was included in the Scenic and Recreational Highway System.

Designation of a highway as part of the Scenic and Recreational highway system does not require the city to adopt regulatory (zoning and land use) controls. The City may consider development actions consistent with the intent of the legislation to attempt to preserve the scenic characteristics of SR 9.

Rail Service

Freight

The Burlington-Northern Railroad operates a north-south rail line that runs east of Nooksack Ave (SR 9). This rail line connects Sumas with Sedro-Woolley, and continues south to Burlington where it connects to the primary north-south rail corridor between Vancouver, B.C., and Seattle. The route supports moderate freight volumes. It will continue as an active part of the Burlington Northern freight operations. A spur line north of Nooksack runs west from Sumas to the City of Lynden. Freight trains use this spur approximately once a week.

Passenger Rail

As of March 1995, passenger rail service in Whatcom County was reinstated. Future plans include additional runs.

In 1990, the U.S. Congress designated the Portland, Oregon to Vancouver, B. C. rail corridor as a high-speed passenger rail corridor. This has provided the impetus for a preliminary long range high-speed rail plan by the State. The high-speed rail service would operate the trains at over 150 miles per hour, as compared to the existing 80 miles per hour service by Amtrak. The future of high-speed rail in this corridor is questionable at this time due to funding constraints.

Overland Freight

Transportation of goods by trucks often influences a city's transportation system. Trucks accelerate more slowly, are less maneuverable and have longer stopping distances. Vehicle

weight also affects local road conditions by decreasing the quality of the road surface. SR 9 through Nooksack is a major regional truck route. SR 544 is also heavily used by trucks.

According to data compiled by the WCOG, truck crossings at the Sumas International border crossing represent approximately 24 percent of heavy vehicle traffic crossing the border in mainland Whatcom County. SR 9 serves as the commercial vehicle route for through-trucks meeting U.S. weight restrictions to and from the international border.

No information is available that identifies locally generated truck trips or travel patterns.

Air Transportation

The nearest air facility is the Lynden Municipal Airport, primarily used by private aircraft and charters. The Bellingham International Airport, operated by the Port of Bellingham, provides commercial air carrier and charter services.

Port Facilities

There are no port facilities located in the Nooksack area. The Port of Bellingham operates all public ports in Whatcom County.

Demand Management Strategies and Commute Assistance

Currently, there are very few privately organized or operated commuter assistance programs or services in Nooksack. This situation is reflected in the high percentages of drive-alone trips shown in Table 6-4 and 20-40 minute commute times shown in Table 6-6. Whatcom Council of Governments coordinates a number of programs to support commute trip reduction and alternative transportation modes, including the Whatcom Smart Trips Program.

Public Transit

Fixed Route Service

The Whatcom Transportation Authority (WTA) provides fixed route bus service to Nooksack. Five in-bound routes and four out-bound routes to and from Bellingham are provided daily. WTA also offers flex-service in Nooksack and the surrounding area where riders who are unable to travel to a bus stop on the fixed route can arrange for a regularly scheduled bus to make a stop at a location within the defined “flex” service area.

Transportation For Persons With Disabilities and For Senior Citizens

The Whatcom Transportation Authority provides specialized para-transit service to Nooksack.

Taxi Services

There are no taxi services based in Nooksack. However, several taxi companies provide county-wide service, which includes service to Nooksack.

Bicycle Facilities

Bicycles serve many transportation purposes in a community providing low-cost mobility as well as recreation.

No bicycle lanes or designated bicycle routes have been planned or constructed within Nooksack. The relatively wide street sections in Nooksack accommodate bicycles as well as motorized vehicles. No county-wide bicycle trails are planned within the city limits. The proposed Bay to Baker Trail through Everson and Whatcom County would provide access from Nooksack to Bellingham and the Mt. Baker recreational. The Bay to Baker trail proposal would use abandoned railroad right-of-way for most of its 74-mile project. The City will continue to coordinate with other jurisdictions in the region through the Whatcom Council of Governments to support to planning and funding of regional bicycle facilities.

Pedestrian Facilities

A complete sidewalk system does not exist within the city limits (Figure 6-4. Sidewalk System). Sidewalks are found on the north side of Columbia Street (SR 544) and on the west side of Nooksack Avenue between Hayes Street and Columbia Street. In 2008 a sidewalk was constructed on the west side of W. Second Street and the north side of W. Madison Street connecting SR 544 to SR 9. All new subdivisions, including the Village of Nooksack and the developments to the west of W. Third Street, have included construction of full sidewalks throughout.

Sidewalks are typically not found in residential areas, except where new developments have occurred. New construction design standards require sidewalks be installed on both sides of new residential access streets and in cul-de-sacs. This requirement results in many unconnected sidewalks as new construction occurs. Streets where partial sidewalks have been constructed include: Nooksack Avenue, Jackson Street, W. Second Street and Madison Street.

Except for requirements under City subdivision regulations, there is no ordinance or program providing or promoting connection between pedestrian facilities. The City pursues projects to connect pedestrian facilities when state grant funding becomes available, such as through the Transportation Improvement Board (TIB). The City will continue to coordinate with other jurisdictions in the region through the Whatcom Council of Governments regarding planing for and funding of facilities that provide pedestrian connections in the region.

4. TRANSPORTATION FUNDING

The Nooksack City Council annually adopts a Six-Year Transportation Improvement Program (TIP) as required by the Transportation Improvement Board (TIB) of the State of Washington. The adoption of the Six-Year TIP qualifies the city to receive grant funding through the TIB and other agencies. These projects are included in the city's annual Capital Improvement Plan.

Table 6-7 2016-2021 Six Year Transportation Improvement Program shows the city's roadway and sidewalk projects scheduled during the six-year period. These projects upgrade or reconstruct local road and sidewalk segments, subject to funding availability. The W. Madison Street sidewalk project has been awarded a \$122,000 grant from the Transportation Improvement Board. None of the other projects has non-local funding that has been secured. Projects requiring non-local funding will be prioritized based on the City's success at securing needed funding.

The capital facilities chapter addresses the long-range funding program for the transportation capital facilities. Projects utilizing local funds will be prioritized based on the project years identified in the 6-year TIP.

Table 6-7. 2016-2021 Six Year Transportation Improvement Program (Funds in thousands)									
Project Title Street Name Terminal Beginning and End Work Description	Length (miles)	State Fund Code	State Funds	Local Funds	1st Year	2nd Year	3rd Year	4th Thru 6th	Project Total
East 4th Street Reconstruction East 4th Street Gillies Rd. to E. Madison St. Reconstruct	0.24	TIB	855	45				900	900
	Total		855	45	0	0	0	900	900
West 2nd Street Resurfacing West 2nd Street Columbia St. to Madison St. Resurface West 2nd Street	0.5	TIB	324	36				360	360
	Total		324	36	0	0	0	360	360
West Madison St. Sidewalk West Madison Street SR 9 to West 1st St. Add sidewalk	0.06	TIB	122	7	129				129
	Total		122	7	129	0	0	0	129
Harrison Street Sidewalk Harrison Street SR 9 to West 3rd Street Construct new sidewalk	0.18			200			200		200
	Total			200	0	0	200	0	200

Table 6-7. 2016-2021 Six Year Transportation Improvement Program (Funds in thousands)										
Project Title Street Name Terminal Beginning and End Work Description	Length (miles)	State Fund Code	State Funds	Local Funds	1st Year	2nd Year	3rd Year	4th Thru 6th	Project Total	
	Total								200	
West Hayes Street Resurfacing West Hayes Street SR 9 to West 3rd Street Resurface West Hayes Street	0.19			150				150	150	
	Total			150	0	0	0	150	150	
E. Lincoln Storm Drainage E. Lincoln Street E. 1 st to E. 4 th Streets Install storm drainage facilities	0.19			100		100			100	
	Total			100	0	100	0	0	100	
Nooksack Avenue Sidewalk Nooksack Avenue Hayes Street to Tom Road Add sidewalk	0.22			150				150	150	
	Total			150	0	0	0	150	150	
	Program Total		1,301	688	129	100	200	1,560	1,989	

5. NEEDS ASSESSMENT

Introduction

Citizen participation is an important part of any planning process. Encouraging participation makes the adopted plans more responsive to the needs and issues of the community. Nooksack encouraged public participation through initial open meetings of the Planning Commission and a community-wide transportation workshop. Additional public input was received during the public hearing process in 2016.

Planning Commission

The Nooksack Planning Commission met with the Whatcom County Council of Governments staff to assess and review the progress of the Transportation Element and to discuss issues relating to transportation.

Public Workshop

A community-wide Transportation Workshop was held on September 30, 1993 to identify the needs and issues of the community. The workshop program included an introduction to transportation planning, a review of the draft goals, objectives, and existing conditions, and a transportation questionnaire. There was also time provided for questions from the community. Of the people in attendance, ten completed a questionnaire discussing issues, needs and how best to pay for them. Although the number of questionnaires was not a statistically valid sample of the community as a whole, the survey provided information about some community interests.

Identified Needs and Issues

The following is a list of community concerns as identified during the community workshop and Planning Commission.

- The need for a local public bus system, especially for the senior citizens and disabled in the community.
- Local streets operating at a higher use.
- Improvements to intersections along Nooksack Avenue, especially at Columbia Street and Madison Ave.
- Need for sidewalks on W. 2nd Street between Columbia St. and Madison Street. [Project has been completed.]
- A strong sentiment for developers to pay their "fair share" of the costs of transportation improvements throughout the city.

These concerns were reviewed and confirmed by the City Council as part of the 2016 update of the comprehensive plan.

6. FUTURE CONDITIONS

Chapter three (Land Use) of this comprehensive plan specifies anticipated growth and future land use expectations within the existing city limits and designated UGA. The assumptions and transportation forecasts in this section are based on the land use information presented in Chapter three.

Anticipated future conditions were evaluated to model traffic distribution resulting from local and regional growth. The "Anticipated Growth" scenario is based on careful consideration of most-likely development as presented in chapter three.

The “Anticipated Growth” scenario includes increases in residential, commercial, and industrial land uses. These increases in land use were factored into the regional transportation model developed by the WCOG.

Trip Generation

Development patterns in a community will generate distinctive traffic impacts on a transportation network based on the land use. The WCOG transportation model was based on a household travel study and was calibrated to match closely with existing traffic count data.

Table 6-8 shows projected Average Daily Trips (ADT) and P.M. Peak Hour Volumes forecast for the "Anticipated Growth" scenario for the year 2036.

Table 6-8: Traffic Counts on Streets in the Regional System, 2036

Street Segment	ADT	ADT	Peak Hour	Peak Hour
	N or E	S or W	N or E	S or W
SR 9 (Nooksack Avenue)	4,653	5,939	336	380
E. Madison Street	1,121	1,174	121	99
SR 544 (W. Columbia / E. Main St.)	5,470	5,218	390	324

Residential zones produce the greatest ADT and the highest number of P.M. peak hour trips of all land use categories. Because the Residential land use category is the highest trip generator for Nooksack's expected future land uses, it has the greatest single impact on the road network.

As development occurs, the city should look to the SEPA process to mitigate the traffic impacts at the:

1. South Pass Rd/SR 9 (Nooksack Ave)/Columbia Street intersections.
2. E. Madison Ave/SR 9 (Nooksack Ave) intersection.

Traffic signals may need to be installed at the South Pass/SR 9 (Nooksack Ave)/Columbia Street, and East Madison Ave/SR 9 (Nooksack Ave) intersections when the warrants are met.

Level of Service Considerations

Based on the discussion of functional classification in the previous section, the city should adopt Level Of Service "D" on Nooksack Ave (SR 9) and Columbia Street (SR 544) as state routes in urban (incorporated) areas. These same routes should also be designated as "SECONDARY ARTERIALS" within the city limits. The results of the WCOG model show that these facilities are not likely to exceed LOS "C" even under full build-out conditions.

Twenty year traffic projections were developed for the City of Nooksack using existing peak hour traffic count information and projections of the location and amount of future growth in the Nooksack Urban Growth Area.

Present peak hour traffic counts for many of the road sections were developed using traffic counts performed by WCOG and information supplied by WSDOT. These traffic counts were used to calculate how current trips are distributed. The regional transportation model developed by the WCOG distributed trips generated under the Anticipated Growth scenario to numerous Transportation Analysis Zones throughout the county.

Volume to Capacity Ratio

Volume to Capacity Ratio is calculated by dividing the existing capacity for a particular road section by the projected or existing traffic volume on that road section. If the result ranges from zero (0) to one (1) the section is operating within capacity. As the result nears one (1) and exceeds it the section will begin to operate less efficiently and safely. High Volume to Capacity Ratios imply that as anticipated growth occurs road improvements may have to be made to increase capacity.

In terms of future traffic volumes as a percentage of roadway capacity (V/C ratio) growth within the city limits and urban growth area will not cause LOS to exceed "D." The V/C ratios for local roads in the regional system for the "Anticipated Growth " scenario are shown in Table 6-9 and do not exceed 0.60. It is anticipated that all roadways in Nooksack will be operating at LOS B or better the year 2036

Table 6-9: V/C and LOS on Streets in the Regional System, 2036

Street Segment	V/C	V/C	LOS	LOS
	N or E	S or W	N or E	S or W
SR 9 (Nooksack Avenue)	0.56	0.52	B	B
E. Madison Street	0.16	0.13	A	A
SR 544 (W. Columbia / E. Main St.)	0.49	0.47	A	A

The results of the WCOG model for the regional system for the year 2036 are also shown in Figure 6-5.

While V/C ratios and their correlation to LOS may be set at any level by jurisdictions, it is generally accepted that .70 is a threshold for LOS "C," .80 for LOS "D," .90 for LOS "E," and 1.0 for LOS "F." For comparison, the City of Bellingham has set an LOS of "F" for all facilities within the existing city limits.

The City has a policy of not issuing permits and approvals for projects that would cause a local roadway to operate below the adopted level of service standard. Under the concurrency policy, facilities necessary to maintain the adopted level of service must be provided concurrent with the proposed development. Given the relatively good levels of service currently shown on the roadways within Nooksack, significant issues related to concurrency are not anticipated within the planning period. SEPA review can be used to maintain acceptable operational levels on city streets, if necessary.

SR 9 Realignment

It is no longer anticipated that WSDOT will pursue realignment of SR 9 in the vicinity of Nooksack.

Access Management

The city will continue to look at the management of parking and driveway access in the commercial areas. Commercial development near the SR 9/South Pass Road intersection may adversely impact the intersection of a new alignment of SR 9.

Railroad Crossings

The city has two local right-of-way crossings over the Burlington-Northern rail line. One crossing is at S. Pass Road and the second is at East Madison Street. A third crossing, at Baird Lane, that was an unsignalized crossing, has now been closed. Nooksack has recently upgraded the E. Madison Street crossing with signals and gates.

Pedestrian and Bicycle Facilities

The existing conditions section shows that there are many individual segments of sidewalks in Nooksack. In the past, as development has occurred, sidewalk segments were constructed without any provision for developing a system of interconnected sidewalks. With all recent developments, the City has worked to ensure that each development is linked to the main sidewalk system through town.

Complete Streets

The city will consider the adoption of a “Complete Streets” policy that will specify design and operational features to be included in public rights-of-way that will enable safer access for all users, regardless of age, ability or mode of transportation. The city recognizes that our “Mainstreet” (SR 9) is a state highway; therefore, the city wants to work with WSDOT to facilitate modal opportunities that help us achieve our vision for a more connected and walkable downtown. Our goal is to improve safety, accessibility and aesthetic appeal of the city so we increase mobility, draw visitors, promote business growth and add value to our community’s character and identity.

7. RECOMMENDATIONS

The City has identified the following action items related to implementation of the transportation chapter of this comprehensive plan:

1. Establish a functional classification system for the city's street network. The state roads (SR9, SR 544) and South Pass Road should be classified as secondary arterials, others listed by TIB are currently classified (Madison, and W 2d ST.)
2. Adopt LOS "D" for all state routes within the existing city limits and a policy to set "D" for state routes with in urban Growth areas as they are annexed
3. The roadway design standards adopted for subdivision developments should be adopted for all city streets provided they correlate with AASHTO standards for small cities as endorsed by the Washington Association of Cities.
4. Work collaboratively with WSDOT and through the WCOG to develop any additional road design standards and to obtain the greatest amount of available funding for road projects.
5. Adopt a program for sidewalk system completion along arterial streets.
6. Incorporate the 1980 design guidelines for bicycle paths and lanes as an element of its road standards.
7. Breckenridge Road outside the city limits is narrow and may not adequately accommodate traffic from denser residential development units. Functional classification of this facility and annexation of the area north of the road or collaboration with the county and developer(s) may be needed to acquire funds necessary to improve this facility if and when development is proposed.