

Chapter 11

TRANSPORTATION

Existing System

Roads and Streets

The existing road and street system is shown in Figure 11-1. The Blaine Road and the Grandview Road, easterly from Blaine Road, are on the State Highway system, namely, State Route 548. All other roads in the area are county roads. Whatcom County Public Works Department classifies roads in the Birch Bay area as follows:

State Highway

- Blaine Road from Grandview Road to the Blaine City limits
- Grandview Road from Blaine Road to Interstate Highway 5

Major Collector Roads

- Grandview Road from Blaine Road to Pt. Whitehorn Road
- Pt. Whitehorn Road from Grandview Road to Birch Bay Drive
- Birch Bay Drive from Point Whitehorn Road to Birch Point Road
- Birch Point Road from Birch Bay Drive to Semiahmoo Drive
- Semiahmoo Drive from Birch Point Road to Semiahmoo Parkway
- Kickerville Road from Grandview Road to Bay Road
- Bay Road from Blaine Road to Kickerville Road
- Birch Bay-Lynden Road from Harbor View Rd. to Kickerville Road
- Harbor View Road from Birch Bay Drive to Lincoln Road
- Shintaffer Road from Birch Bay Drive to Lincoln Road
- Lincoln Road from Semiahmoo Parkway to Harborview Road

Minor Collector Roads

- Jackson Road from Grandview Road to Birch Bay Drive
- Alderson Road from Birch Bay Drive to Blaine Road
- Kickerville Road from Bay Road to Loomis Trail Road

Local Access Roads

- All other roads built in Whatcom County owned right-of-way, in the Birch Bay area, are to be considered local access roads.

All roads in the Birch Bay area are two lane roads with pavement width ranging from 9 feet to 11 feet per lane. There are no traffic signals in the area. Channelization and pavement markings exist primarily along Birch Bay Drive and Birch Bay - Lynden Road. In total, there are 74.9 miles of road. Since all roads are two lane roads, the lane miles total 149.8.

Traffic Volumes and Characteristics

Traffic Volumes. Average daily traffic volumes are shown in Figure 11-2. As can be expected, the highest traffic volumes of 5,000 vehicles per day and above exist along Birch Bay Drive, Blaine Road., Grandview Road and Birch Bay Lynden Road. Average daily traffic volumes on other arterial roads range from 1,000 to 5,000 vehicles per day. On summer weekends, daily traffic volumes may easily double from what is shown in Figure 11-2. Traffic volume counts are made, periodically, by Whatcom County Public Works Department and by the Washington State Department of Transportation. Traffic volumes shown in Figure 11-2 represent year 2000 conditions.

Traffic Characteristics. Traffic volumes vary each day of the week. Mondays and Fridays tend to be higher travel days of the five day work week, while Tuesday, Wednesday and Thursday volumes are lower. Saturday and Sunday travel is normally higher than the average week day, particularly in a resort area such as Birch Bay.

Traffic volumes also vary from month to month. Low traffic volume months are the winter months and the high traffic volume months are the summer months when the normal day to day travel is supplemented with vacation and resort related travel. It is not unusual to observe twice as much traffic on a typical summer weekend day than on a winter weekend day.

Further, traffic volumes also vary from hour to hour. On a normal weekday (Monday through Friday), the early peak traffic flow occurs around 8 A.M. in the morning. The evening peak occurs usually between 4 and 5 P.M. On a typical weekend day, the peak traffic volume can usually be observed around the noon hour.

Figure 11-1
Road Network

Roadway Capacity

Capacity

Traffic carrying capacity of a roadway link or intersection can be calculated by taking into consideration such things as traffic volumes, lane width, channelization, cross street traffic volume, percent of commercial vehicles in the traffic stream, location of bus stops, travel speeds, and pedestrian crossings. Further, traffic control devices, such as traffic signals, stop signs, etc., play a critical role in determining intersection capacity. As a general rule, a two lane road with two or more intersections per mile begins to reach capacity at 7,000 vehicles per day. In the Birch Bay area, those streets with 5,000 vehicles per day volumes can be considered near term candidates for having reached capacity. Having reached capacity means that from that point on, motorists traveling this section of the road can expect to experience greater than normal congestion and wait time at intersections.

Level of Service

One cannot go very far in discussing capacity before discussing level of service. At a very high level of service, the traffic carrying capacity of a roadway link is very low while at the low level of service, the traffic carrying capacity is very high. The Whatcom County Public Works Department has set the tolerable level of service at level "D" throughout the County. Levels of service from A though F are described below in Table 11-1.

Capacity of the Existing System

Applying the above listed level of service standards, to existing traffic conditions and volumes in the Birch Bay area, the conclusion is that, at the year 2000, there were no significant traffic congestion problems on an average weekday. Weekend conditions, particularly during the summer months, have not been analyzed. Roadway systems are generally designed to meet the average annual conditions and not the peak weekend conditions. To design a roadway system to handle a peak weekend condition is very costly and the facility stays unused throughout most of the year.

Figure 11-2
2000 Traffic Volumes

**Table 11-1
Level of Traffic Service and Roadway Capacity**

Level of Service	Expected Traffic Delays	Roadway Traffic Volume Capacity. Vehicles per Day*
A	Little or no delay	0 to 4,000
B	Short delays	4,001 to 6,600
C	Average delays	6,601 to 9,400
D	Long delays	9,401 to 11,300
E	Very long delays	11,301 to 15,700
F	Extreme delays	15,701 and above

Assumptions: Suburban or rural setting. Two-lane road, not influenced by signalized intersections. Roadway not built to standard. Average travel speeds less than 40 mph. Directional split 60/40. Heavy vehicles, 6 percent. Peak hour factor, 0.91. Terrain, rolling and level.

** Values used by the Whatcom County Public Works Department*

Public and Non-Motorized Transportation

Elimination of the motor vehicle excise tax subsidy for transit agencies, in January 2000, resulted in cutbacks of public transit service. Fixed route service in the Birch Bay area previously provided by Whatcom Transit has been eliminated. Only dial-a-ride service exists.

Non-motorized transportation consists primarily of bicycle and pedestrian travel. Bicycle and pedestrian travel walkways and bikeways are primarily concentrated along Birch Bay Drive. Newer road improvements, such as the Alderson Road from Birch Bay Drive to Blaine Road and Birch Bay Drive itself contain wider paved shoulders that better accommodate pedestrian and bicycle travel. It should be noted that these improvements, while appreciated by the community, do not meet accepted bicycle and pedestrian lane safety standards.

Forecast of Future Traffic Volumes

Traffic Generation

Traffic counts taken at select locations along Blaine Road (SR-548) by the Washington State Department of Transportation, indicate that traffic volumes have been growing steadily at the rate of 3 percent per year. Applying an across the board 1.81 increase factor (3 percent per year for 20 years) to existing traffic volumes gives an indication of potential year 2020 future traffic volumes. In addition there are four major traffic generators planned that do not exist today. The four are:

1. Commercial center at Lincoln Road and Shintaffer Road
2. Commercial center at Blaine Road and Birch Bay-Lynden Road
3. Commercial center at Blaine Road and Alderson Road
4. Multi-family development at Blaine Road and Alderson Road

Each of the four major developments generates a significant amount of traffic which spills over to the existing road network. The generated traffic volumes have been estimated using the Institute of Transportation Engineers Trip Generation Manual, Volume 5, which relates traffic generation to such measurable indicators as commercial floor area, number of apartment units, and number of housing units in a planned unit development. The amount of traffic generated by each of the four major traffic generators is shown in Table 11-2.

**Table 11-2
Trip Generation, Weekday Traffic**

Development	Trip Generation Measure	Number of Trips
1. Comm. Center, Lincoln/Shintaffer	15 acres	3,000
2. Comm. Center, Blaine/BB-Lynden	110 acres	13,000
3. Comm. Center, Blaine/Alderson	70 acres	9,000
4. Multi-Family, Blaine/Alderson	1,168 units	7,600
Total		32,500

2020 Forecasted Traffic Volumes

Overlaying the generated auto trips as shown in Table 11-2 on the baseline or ambient 20 year forecast of auto travel generates a 2020 traffic volume map as shown in Figure 11-3. The 2020 traffic flow map contains the assumption that the forecasted population, housing, commercial areas and other development are fully built out. As expected, heavy traffic volumes show up on Blaine Road, Grandview Road, Birch Bay - Lynden Road, Harborview Road, Birch Bay Drive, Shintaffer Road and Lincoln Road.

Ability of Existing Roads to Serve Future Volumes

A key question in any transportation plan is "How well can the existing road system accommodate the future forecasted traffic volumes?" In Birch Bay's situation, the answer is "Not very well." Comparing year 2020 forecasted traffic volumes with roadway capacity at the level "D" (see Table 11-1) shows that overloads occur along Grandview Road, Blaine Road, Birch Bay - Lynden Road, Harbor View Road, and Birch Bay Drive as shown in Figure 11-4. Before one can begin to propose a transportation plan and prescribe specific remedies to alleviate overloads, one has to visit the vision statement and the goals and policies.

Transportation Vision, Goals and Policies

Vision Statement

East-west traffic movement between Birch Bay and I-5, that has been a problem for years, has improved significantly. Birch Bay - Lynden Road and Grandview Road, have been widened by providing adequate shoulders and center left-turn lanes.. Blaine Road also functions as a north-south collector/distributor road taking the traffic load off Birch Bay Drive, leaving it for local access traffic and for bicycles and pedestrians. A number of pay parking lots have appeared east of Birch Bay Drive, camouflaged and tucked away behind commercial facilities with their storefronts facing Birch Bay Drive. Bus service has improved considerably, enabling workers to travel to out-of-the-area job locations in Semiahmoo, Blaine, BP and Bellingham. Pedestrian and bicycle trails have become an integral part of all major road improvements. For example, along the trail, Bicyclists can now travel, in their own right-of-way from the Canadian border to Bellingham and further south. Birch Bay Drive, which used to

function as a north-south arterial road, now has resemblance to a beach-front promenade, integrating the people oriented development on the east side of the Drive with the water oriented activities on the west side

Goals and Policies

- Goal TR 1: To reduce unnecessary vehicle traffic on Birch Bay Drive.
- Goal TR 2: To provide safer, more effective collector routes to Birch Bay – Lynden Road, Interstate 5 and the City of Blaine.
- Goal TR 3: To coordinate local traffic planning with the City of Blaine, Whatcom County, Washington State, the Whatcom County Transportation Authority and other agencies.
- Goal TR 4: To become a community that achieves success in providing viable public and alternative transportation to reduce automobile traffic.
- Policy TR-4a: Provide streets, arterials and trails that link, to the greatest extent possible, housing and commercial developments.
- Policy TR-4b: Provide streets and arterials that maximize pedestrian and bicycle use.
- Policy TR-4c: Whenever possible, separate vehicle and pedestrian and bicycle traffic.
- Policy TR-4d: Commit to alternative transportation by working closely with Whatcom Transit Authority and others to establish park-and – ride lots and van pooling programs.

Figure 11-3
Traffic Volumes – Year 2020

Figure 11-4
Roadway Capacity Deficiencies – Year 2020

Proposed Transportation Plan

The proposed transportation plan, as shown in Figure 11-5, is based on the following vision, goals and policies, principles and assumptions.

1. Meets the transportation vision statement as articulated above.
2. Meets the transportation goals and policies as articulated above.
3. Meets the Growth Management Act goals of serving the needs of the land use plan.
4. Commits to level of service “D” as the acceptable level of service.
5. Establishes transportation concurrency requirements.
6. Requires developer paid on-site transportation improvements and off-site impact mitigation.

The proposed transportation plan calls for the retention of State Highway 548 designation on Grandview Road and Blaine Road. Further, the proposed transportation plan calls for the designation of Birch Bay - Lynden Road, Harbor View Road, and Lincoln Road as arterial roads. Other roads shown on the proposed transportation plan, such as Birch Bay Drive, Jackson Road, Bay Road, Alderson Road, Shintaffer Road, Kickerville Road and others are collector roads.

Proposed Roadway Improvements

The transportation plan also proposes that two new routes be constructed. The first is the construction of a cut-off road from Birch Point Road to Lincoln Road. The second is the construction of a combined auto, pedestrian, and bicycle road west from Blaine Road toward, but not connecting with Birch Bay Drive in the vicinity of the existing golf course. This will provide a bike/pedestrian connection between the west end of this road and Birch Bay Drive. The transportation plan further proposes a series of existing roadway improvements and the installation of a number of traffic signals. The specific transportation improvements are listed below and are shown in Figure 11-6.

Grandview Road. Widen Grandview Road from Pt. Whitehorn Road to Blaine Road to two lanes with paved shoulders to accommodate bicycles. Provide left turn pockets at Jackson Road. Widen Grandview Road to four lanes from Blaine Road to Interstate 5. Provide left turn lanes at the intersection at Blaine Road and at Kickerville Road. Provide a traffic signal at the intersection of Grandview Road and Blaine Road. Widen Point Whitehorn Road for shoulders, as currently planned in the six year Transportation Improvement Program.

Figure 11-5
Transportation Plan

Figure 11-6
Proposed Roadway Improvements Year 2020

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Blaine Road. Widen Blaine Road to four lanes from Grandview Road to Lincoln Road. Provide a two-way left turn lane (in the middle) through the commercial and multi-family residential area at Blaine Road and Alderson Road. Provide left turn lanes at the intersections of Blaine Road and Alderson Road and Blaine Road and Arnie Road. Provide left turn lanes and a traffic signal at the intersection of Blaine Road and Birch Bay - Lynden Road. Provide left turn lanes and a traffic signal at the intersection of Blaine Road and Lincoln Road. Improve the Blaine Road bridge, crossing California Creek. Further, add shoulders north of Lincoln Road.

Birch Bay - Lynden Road. Widen Birch Bay - Lynden Road to four lanes from Harborview Road to I-5. Widen shoulders along Birch Bay - Lynden Road from Kickerville Road to Interstate 5 to accommodate bicycles. Provide left turn lanes at the intersections of Birch Bay-Lynden Road with Kickerville Road, Blaine Road and Harborview Road. Provide a two-way left turn lane (in the middle) from Harborview Road to Blaine Road. Provide traffic signals at the intersections of Birch Bay - Lynden Road with Harborview Road and Blaine Road. Provide bicycle lanes and pedestrian walkways along Birch Bay - Lynden Road from Harborview Road to Blaine Road.

Lincoln Road. Finish constructing the gap in Lincoln Road between Harborview Road and Blaine Road. Widen Lincoln Road with adequate shoulders from Shintaffer Road to Blaine Road. Provide left turn lanes along Lincoln Road at Shintaffer Road, Harborview Road and at Blaine Road. Provide a traffic signal at the intersection of Lincoln Road and Blaine Road.

Development along Lincoln Road should be set back from the road and clustered with limited direct access to Lincoln Road. The existing pedestrian/bicycle path along Semiahmoo Drive within the Blaine City Limits should be extended along the South side of Lincoln Road to Blaine Road prior to approval of new development projects along Lincoln Road. These improvements may be funded by a Local Improvement District, developer financing with latecomer fees, grant funding, traffic impact fees, or a combination of sources. A 25 foot landscaped buffer with suitable plant materials to provide an all season vegetative barrier between Lincoln Road and proposed development shall be required as a condition of new development approval.

Birch Point Road. Widen Birch Point Road by providing adequate shoulders from Shintaffer Road to the middle of section 22 where Birch Point Road turn sharply to the south. Construct a new two lane roadway section with wide shoulders beginning in the middle of section 22 and running north to and connecting with Semiahmoo Drive. This section of the road should be built concurrently with the buildout of the surrounding residential area. To relieve

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traffic congestion on Birch Bay Drive, construct a cut-off road from Birch Point Road, east of the entrance to Birch Bay Village and connecting diagonally with Lincoln Road west of Shintaffer Road. The specific alignment and roadway design shall be determined by Whatcom County at some later date.

Harborview Road. Widen Harborview Road from Birch Bay Drive to Drayton Harbor Road by providing adequate shoulders for bicycles. Widen the section of Harborview Road to three lanes (two-way left turn in the middle) from Birch Bay Drive to Lincoln road. Build left turn lanes along Harborview Road at the intersections with Birch Bay Drive, Birch Bay - Lynden Road, and Lincoln Road.

Kickerville Road. Widen Kickerville Road from Loomis Trail Road to Grandview Road by providing adequate shoulders. Install left turn lanes along Kickerville Road at the intersections with Birch Bay - Lynden Road and at Grandview Road.

Commercial Area Access Road. Construct a new road, west from Blaine Road and in the vicinity of the golf course, terminating in a cul-de-sac east of Birch Bay Drive at a parking lot. The roadway should accommodate two auto lanes, two dedicated bicycle lanes and two pedestrian walkways.

Birch Bay Drive. Reconstruct Birch Bay Drive from Shintaffer Road to Alderson Road by constructing a berm on the water side of the Drive. On top of the berm, construct a combined pedestrian and bicycle path. Keep the Birch Bay Drive roadway as a two auto-lane facility. Prohibit on-street parking and provide intermittent off-street parking lots on the east side of Birch Bay Drive.

Public Transportation. Restore public transportation service to the Birch Bay area.

Action Strategies

1. Coordinate with the Whatcom County Public Works Department to add Birch Bay transportation projects to the County 6-year Transportation Improvement Plan (TIP). Provide input in the annual update of this plan and participate in public hearings on the TIP and annual budget to encourage funding of Birch Bay projects.
2. Work with Whatcom County to develop a transportation impact fee program to finance the transportation improvements recommended in the

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Birch Bay Community Plan. Road impact fees are charges assessed on new development, as a condition of approval, to pay for road improvements needed to serve new growth.

3. Work with Whatcom County and Birch Bay property owners to establish Local Improvement Districts to upgrade roads, shoulders and pedestrian facilities in areas where existing roads do not meet County Road Standards or where existing traffic exceeds the established Level of Service. A Local Improvement District is a special transportation improvement district formed and funded by property owners to privately finance specific capital improvements
4. Consider the formation of a Road Improvement District to allow specific improvements to be paid for by properties that directly benefit from the improvements. The funding mechanism involves the sale of Road Improvement District bonds. The bonds are redeemed from district voted property taxes. A Road Improvement District in the Birch Bay area may consist of a few large lots or the entire Birch Bay Community area. The creation of a Road Improvement District and the funding of it must be approved by the voters residing in the District.
5. Actively pursue grant funding for transportation, bicycle and pedestrian facilities in Birch Bay. Where possible, partner with local developers, Whatcom County Parks, Birch Bay State Park, the Whatcom County Bicycle and Pedestrian Advisory Committee and the Whatcom Council of Governments to coordinate pedestrian facilities with public and private recreational facilities and the Coast Millennium Trail.
6. Contact the State Department of Transportation and Whatcom Council of Governments to obtain information about the process and schedule for funding needed improvements to State facilities, and work with State elected officials to encourage funding of improvements to Blaine Road, Grandview Road and the Birch Bay Lynden Road/ I-5 Interchange.
7. Provide input in the Whatcom Transportation Authority (WTA) plan for public transportation, and work toward restoring bus service and developing a Park and Ride facility to serve Birch Bay.
8. Work with the Whatcom County Public Works Department to develop a low impact road standard with a narrower roadway and bioswales to reduce impervious surfaces and increase stormwater infiltration. Apply this standard to low traffic roads where appropriate to protect wetlands or other critical areas.