

Chapter 8

Needs and Issues

Introduction

During the planning process for creating this plan, short-term and a long-term needs were defined on the basis of comparing conditions forecast for the year 2025, and a set of standards identified in Chapter 7. This was done for each of three sets of growth scenarios and resulted in three sets of needs. The final set of needs is a synthesis of these three scenarios, recognizing that there is a good deal of uncertainty as to which growth scenario will actually occur over the long-term and less over the short-term.

Needs

Needs were determined by a combination of sources. The first was to collect the long range plans of the various jurisdictions. These needs were checked against the modeling results and gaps were filled. In some cases neither the modeling nor the agency plans identified needs. This was particularly true for intelligent transportation systems (ITS) projects and for various types of programs.

Capital improvements include widening existing roadways, building new roadways, adding parking lots, building new ferries, building transit facilities, building trails and other non-motorized facilities, and other similar projects. Capital projects primarily respond to the need for additional capacity to meet demand. Most capital projects provide additional capacity for facilities that are now or soon will be over capacity. However, it is possible to have a need that is not evident until a facility is built. An example of this would be a new transit route that does not relieve an over capacity route, but adds service where none exists. A new highway can also be cost effective if it provides significant travel time savings for a large number of travelers. This can be true of non-motorized facilities as well.

Examples of programs are transportation demand management (TDM), access management, and ITS. Programs combine the building of new facilities; influence upon the design of existing facilities; and coordination of actions to create safer and more efficient means of providing transportation services.

The level of detail provided in a regional or metropolitan transportation plan will not usually provide enough detail to clearly define future projects. Therefore more detailed studies must be conducted to provide details such as

location, alignment, and project impacts. These studies result in better cost estimates and are the basis for acquiring initial project funding. Two subsequent stages of project planning, preliminary design and construction plans refine this information even further. Final costs for a project are not known until construction is actually completed. A good example of a needed study is Interstate 5. The traffic analysis identifies capacity deficiencies, and it is already known by observation of current conditions that many of the interchanges require design changes to improve operations. Better defining what these projects will look like requires preliminary design studies and then actual project design. Each of these steps will cost more than this entire plan because of the engineering and detailed data requirements.

Issues

Significant issues face policy makers in making investment choices in transportation projects and programs. The first is always how to pay for improvements. In the last 16 years expenditures by public agencies for transportation services have grown significantly in Skagit County on a per person basis, even after adjusting for inflation. However, family income in Skagit County has grown at an even faster rate during that time, resulting in public funded transportation projects and services taking a smaller percent of the public's earnings. While this would appear to be a win-win situation, needs still far outstrip resources, especially on the state system, both for highways and ferries.

Taxes for transportation services are not usually indexed to inflation, so increases are necessary occasionally just to keep up. Most transportation service providers (for instance highways, ferries, and transit) use different sources of income from each other, and thus they can be seen as competing for funding with each other, since the tax payer is sensitive to the total cost. Policy makers must make decisions as to how much to ask for each mode, just as tax payers must decide how much they support each.

Further decisions must be made within each of these modes as to how much will be spent on things such as maintenance, capacity, safety, and enhancement. Each of these has numerous aspects. For instance, enhancement covers the environment, design and appearance quality, and service quality.

Still another issue is accessibility, or how easy is it to use the service. Highways are usually available 24 hours a day, 365 days a year. However, it is not always easy to get onto a street or highway, either because of location or because of restrictions. Freeways are less common in terms of location as well as offering less frequent access points. The trade off is that speeds are higher and accidents are less frequent. Local streets also have low accident rates, but they

have low speeds and low traffic volumes. In between, collector and arterials must balance access with safety and traffic movement.

Transit and ferry systems are not always available, both from the viewpoint of time and location. The operators of these systems and the policy makers that oversee them must decide how much of their resources will go into coverage, and how much will go into frequency of service. Exclusive non-motorized facilities are also usually available 24 hours a day, 365 days a year, and are usually easy to get onto, but they too can take on the characteristics of freeways, with restricted access. Trails may be harder to get to because there are fewer of them. This problem is partially solved by shared use of other facilities such as use of highway shoulders and bike racks on buses.

Capacity

There are overlaps between capacity and accessibility, but there are also clear differences. The overlap occurs in frequency and coverage, while size is largely a capacity issue. This plan addresses all three capacity issues proposing more facilities and services, more frequent services, and facilities with more capacity. The latter applies particularly to highways, where additional lanes increase capacity. Although airports, rail – both freight and passenger and water ports receive less attention than some other modes in this plan, they have the same issues.

Airports must increase the number of runways if capacity is exceeded as well as the size of those runways if larger planes are to be accommodated. The same is true for hanger space, terminal capacity, and tower control services. For water ports the issues are docking spaces, terminal capacity, and shipping lanes and for rail it is number of rail lines, one or two tracks per line, terminal capacity, highway crossings, and bridge clearances. The latter is a particularly important issue because it determines whether or not freight trains can be double-stacked or not. This plan does not delve into these issues but is more concerned with the issue of connectivity to these systems, or intermodal connectivity.

In the past the issue of intermodal connectivity has been dealt with in Skagit County with one of the first rural freight studies in the nation. While still useful, this study needs updating at some time in the not too distant future.

Table 8-1 lists projects proposed in the time period of 2006 to 2025. These projects have either been identified by the responsible agency or through the analysis conducted for this plan. As land use developments occur during this time period it is certain that additional projects will be required to address specific impacts. Those projects shown in the shaded areas are projected to occur within the first six years. The discussion of the financial constraint in Chapter 9

provides additional information regarding assumptions between the six-year plan and the 20-year plan.

**Table 8-1
Proposed Projects – 2006 to 2025**

Anacortes			
M/R*	Project	Description	Cost
R	SR20 and Commercial I/S	Construct roundabout	\$450,000
R	Oakes Avenue	Add left turn lanes	\$1,000,000
R	Sunset Avenue	Bike lanes and ped facilities	\$600,000
R	SR 20	Add traffic signal	\$1,000,000
R	Waterfront Trail	Build multi-purpose pathway	\$4,500,000
R	6th Street Reconstruction	Reconstruct failing 6th Street	\$1,700,000
R	Fidalgo Bay Road	Reconstruct Fidalgo Bay Road	\$5,700,000
R	Pennsylvania Avenue	Construct roadway connection	\$700,000

Burlington			
M/R*	Project	Description	Cost
M	Nevitt Road Improvements	Construct new collector arterial	\$2,700,000
M	George Hopper I/C	Widen Interchange	\$1,500,000
M	Spruce Street	Extend roadway to the south	\$3,000,000
M	Burlington Blvd.	Widen roadway	\$2,500,000

Mount Vernon			
M/R*	Project	Description	Cost
M	Local Street Improvements	REET	\$1,500,000
M	College Way	Intersection Improvement	\$1,162,000
M	College Way	Signal Upgrades	\$100,000
M	Freeway Drive		\$2,145,000
M	Roosevelt Avenue Extension		\$7,664,000
M	Downtown Park n Ride	Construct Park n Ride Lot	\$2,500,000
M	SR 538 @ I-5 I/C Improvements	Interchange Improvements	\$2,900,000
M	Martin Road Improvements		\$1,450,000
M	Water Front Revitalization		\$2,500,000
M	Signal Hoag / LaVenture Road	New Traffic Signal	\$250,000
M	Riverside Dr-Hoag to College Wy		\$300,000
M	Main Street Reconstruction	Reconstruction	\$2,829,600
M	College Way/26th St Traffic Sig.	New Traffic Signal	\$175,000
M	Hospital Access Improvements	26th Street	\$600,000
M	Division Street Channelization	Channelization	\$30,000
M	Kulshan Trail Extension	Trail Extension	\$800,000
M	Blackburn Rd - 18th Street to Little Mountain Road		\$1,726,000
M	Blackburn Road - Little Moutain to Eaglemont		\$2,191,000

* M = MPO; R = RTPO

Mount Vernon, continued			
M/R*	Project	Description	Cost
M	North 30th Street		\$1,844,500
M	15th Street Reconstruction	Reconstruction	\$1,500,000
M	Hickox Road/I-5 I/C Completion	Interchange Completion	\$5,000,000
M	I-5/SR 536 I/C	New Frontage Rd Access to I-5	\$14,921,000
M	Lions Park Trail Extension	Trail Extension	\$90,000
M	Roosevelt Avenue Extension	New Construction	\$6,979,500
M	North 30th Street		\$1,343,000
M	LaVenture Rd		\$200,000
M	30th Street Imprvts South of Fir		\$206,000
M	13th Street Reconstruction	Reconstruction	\$1,250,000
M	Broad Street	Reconstruction	\$2,530,000
M	4th Street Reconstruct (Fir to I-5)	Reconstruction	\$600,000
M	River Dike Trail System	Construct Trail System	\$500,000
M	30 Street (Blackburn to Division)		\$330,000
M	College Way Extension	New Construction	\$50,000,000
M	Fir Street Widening	Street Widening	\$1,146,000
M	Freeway Drive		\$1,536,000
M	Market Street Extension	New Construction	\$700,000
M	Broadway Extension	New Construction	\$810,000
M	South Second St. Improvements		\$3,300,000
M	Roosevelt Ave Extension	New Construction	\$800,000
M	South 3rd Street		\$536,000
M	Cleveland Avenue Connection	New Construction	\$250,000
M	Path and Trail Projects	Trail Construction	\$614,000
M	Maddox Creek PUD Trail	Trail Improvements	\$34,400
M	Digby Road Improvements & Maddox Creek Relocation	Road Improvements & Creek Relocation	\$100,000

Sedro-Woolley			
M/R*	Project	Description	Cost
M	McGarigle Road & Fruitdale	Add 2 lanes	\$3,000,000
M	F&S Grade Rd (SR 20)	Widen & Realign	\$4,000,000
M	SR 9	Connect pedestrian facilities	\$1,000,000
M	Jones Rd/John Liner Road	Widen roadway	\$2,500,000
M	SR 20	Capacity improvements	\$1,000,000
M	F&S Grade Road	Add bike lane and sidewalk	\$1,500,000
M	SR 20	Add bike facility	\$150,000
M	State Street	Sidewalks	\$100,000
M	Reed Street	Add curb, gutter, and sidewalk	\$1,750,000
M	SR 20	Add traffic signal	\$250,000
M	Cook Road	Add traffic signal	\$175,000
M	SR 20	Widen RR Bridge	\$2,500,000
M	Hodgin Loop	New roadway	\$750,000

* M = MPO; R = RTPO

Skagit County			
M/R*	Project	Description	Cost
M	SR 20	Construct new gavel path	\$49,000
M	Anderson Laventure	Construct new arterial	\$9,250,000
R	Best/McLean Intersection	Safety redesign & reconst	\$685,000
R	Burlington Alger Bridge	Reconstruct Bridge	\$1,250,000
M	Peterson Road	Widening and sidewalk	\$2,250,000
M	Engineering Study to	Protect Trans Infrastr	\$1,362,000
M	F&S Grade Rd/SR 20 Intersct	Redesign & Reconst. I/S	\$100,000
R	Ferry Boat Replacement	Replace aged ferry boat	\$3,500,000
M	Four Bridge Corridor	Improve & lengthen Xings	\$8,513,000
M	McGarigle/Fruitdale Rd/Sedro-Woolley	Reconstruct	\$3,000,000
M	George Hopper I/C	Widen Overpass	\$300,000
M	Hodgin Rd in Sedro-Woolley	Construct new arterial	\$900,000
R	Prairie Road #1	Widen & Resurface	\$2,010,000
R	Prairie Road #2	Widening	\$645,000
R	Kelleher Road #2	Widening	\$642,000
R	LaConner Whitney Road	Add Ped. slough bridge	\$300,000
R	Lake Cavanaugh	Widening	\$740,000
M	Helmick Road	Widening	\$4,400,000
R	Kelleher Road #1	Widening	\$642,000
M	Farm to Market Road	Widening	\$3,345,000
M	Farm to Market Road	Reconstruct	\$725,000
R	Cascade River Road	Paving gravel roadway	\$1,120,000
M	Downtown Parking Garage	Parking garage/Ped brdg.	\$2,500,000
M	Riverside/College I/S	Intersection Impvts	\$900,000
M	So Mount Vernon Exit Study	Study to upgrade I/S	\$300,000
M	SR 536/Skagit River Bridge	Study to Rpl SR 536 Brdg	\$300,000

Regional			
M/R*	Project/Program	Description	Cost
M	Region	Develop Regional Architecture	\$50,000
M	Region	ITS Projects	\$5,000,000

* M = MPO; R = RTPO

SKAT			
M/R*	Project	Description	Cost
M	Chuckanut P&R Phase I	Expand P&R Lot	WSDOT
M	Connect w/Island & Whatcom	Add Service	*\$339,806
M	Add weekend service	Add Weekend Service	*\$145,631
M	Shelters & Benches	Add Shelters & Benches	\$100,000
M	New Farebox System	Install New Farebox System	\$282,779
M	Chuckanut P&R Phase II	Exp P&R Lot	\$2,545,009
M	Mount Vernon D.T. Parking Garage	Construct Parking Garage	\$2,000,000
M	Purchase New Vans	Purchase 2 Vans	\$1,162,785
M	Connect w/Everett	New Service	*\$329,909
M	Bus Pullouts & Lanes	Construct Bus Pullouts & Lanes	\$120,000
M	Enhance Service	Reduce headways	\$347,754
M	Expand Alger P&R Facilities	Expand Park & Ride Lot	\$18,303
M	Maintenance Bays	Add Maintenance Bays	\$1,372,712
M	Anderson Road P&R	Construct P&R Lot	\$888,487
M	Maintain Skagit Station Facilities	Maintain facilities	*\$12,939
M	Increase Everett Station Service	Increase service	*\$129,391
M	7th Year Maintenance	Maintain facilities	\$20,937
M	Expand Skagit Station Lot	Expand P&R Lot	\$3,000,000
M	Decrease Weekday Headway	Decrease headway to 30 min.	*\$1,020,000
M	Decrease Saturday Headway	Decrease headway to 30 min.	*\$272,000
M	Decrease Weekday Headway	Decrease headway to 10 min.	*\$2,040,000
M	Decrease Saturday Headway	Decrease headway to 10 min.	*\$544,000

Service costs are for one year

WSDOT			
M/R*	Project/Limits	Description	Cost
M	I-5 Old 99 (Conway/Hickcock Rd.) to Whatcom Co Line	Pre-Design Study (APDR)	\$7.1 M
M	I-5 Kincaid to George Hopper	Auxiliary lanes and I/C Improvements	\$28 M
M	I-5 Skagit River	Skagit River Bridge	\$54 M
M	I-5 Chuckanut (SR 11) Interchange	Interchange Improvements	\$10 M
M	I-5 SR 536 Interchange	Replace interchange to increase capacity	\$15 M
M	Downtown Mount Vernon	Park & ride lot with Ped Bridge	\$2.5 M
M	I-5 Old 99 to SR 536	Widen to 6 lanes	\$36 M
M	I-5 SR 536 to Skagit River Bridge	Widen to 6 lanes	\$57 M
M	College Way	RDP Update/Corridor Analysis	\$0.1 M
M	College Way	Intersection Improvements	\$1.5 M

* M = MPO; R = RTPO

WSDOT, continued			
M/R*	Project/Limits	Description	Cost
M/R	SR 9 Big Lake to Whatcom Co Line	Access Management Plan	\$0.25 M
M/R	SR 20 Sharpes Corner to Swinomish Slough Bridges	Safety Improvements/ add interchanges	\$36.5 M
R	SR 20 Swinomish Slough Bridges to SR 536	Safety Improvements/ add interchanges	\$36.5 M
R	SR 20 Spur Commercial Ave. to Ferry Landing	Safety, Capacity, and Non-Motorized Improvements	\$20 M
M	SR 20 Interstate 5 to Sedro Woolley	Widen to 4 lanes	\$20 M
M	SR 20 I-5 to Fruitdale	Corridor Analysis/RDP	\$0.5 M
M	SR 536 SR 20 to Skagit River Bridge	Develop Corridor Mang Plan/RDP/Bridge Design	\$0.45 M
M	SR 536 Skagit River	Bridge Replacement	\$20 M
M	SR 20 Sedro Woolley CL to Fruitdale	Widen to 4 lanes	\$9 M
R	SR 20 Rosario Road to Sharpes Corner	Widen to 4 lanes with access management	\$47 M
M	SR 538 North 30th St. to east city limit	Bicycle route	\$1 M
R	SR 20 Sedro-Woolley to County Line	Implement North Cascades CMP (includes safety rest area vicinity of Rockport)	\$5.5 M
R	SR 11 I-5 to Whatcom County Line	Implement Scenic Highway Corridor Management Plan	\$0.15 M
R	SR 9 MP 29.50 – MP 98.20	Scenic Highway Corridor Mang Plan	\$0.25 M

* M = MPO; R = RTPO

The Washington State Department of Transportation (WSDOT) projects do not have a six-year designation because it is not known which projects will be funded within that time frame. When this information is known and identified in WSDOT plans, it will be adopted by reference.

Tribal Transportation Planning

Skagit County has four Federally recognized tribes, the Swinomish, Samish, Sauk-Suiattle, and the Upper Skagit. The Upper Skagit Reservation is located east of Sedro-Woolley, the Sauk-Suiattle is near Arlington, and the Swinomish Reservation is across the channel from LaConner and the Samish headquarters is in Anacortes. The Swinomish voluntarily participate fully in the regional transportation planning process with a member on the Policy Board and another on the Technical Advisory Committee, to support their belief in the need for a well coordinated regional transportation system. The Tribal transportation

planning framework is described in 25 CFR 170, updated in July, 2004, and jointly administered by the Tribe, the Bureau of Indian Affairs, US Department of the Interior, and the Federal Highway Administration (FHWA). 25 CFR 170 states, "The Indian Reservation Roads (IRR) Program is a part of the Federal Lands Highway Program established in 23 U.S.C. 204 to address transportation needs of tribes. In 1982, under the Surface Transportation Assistance Act of 1982 (STAA), Pub. L. 97-424, Congress created the Federal Lands Highway Program (FLHP). This coordinated program addresses access needs to and within Indian and other Federal lands. The IRR Program is a funding category of this program. STAA expanded the IRR system to include tribally-owned public roads as well as state and county-owned roads. Each fiscal year FHWA determines the amount of funds available for construction. The BIA works with tribal governments and tribal organizations to develop an annual priority program of construction projects which is submitted to FHWA for approval based on available funding. FHWA allocates funds to BIA which distributes them for IRR projects on or near Indian reservations according to the annual approved priority program of projects."

In keeping with the requirements of 25 CFR 175, the Swinomish Tribe has developed a six-year Transportation Improvement Program (TIP) and a long-range transportation plan. The Tribe funds their projects with a combination of IRR Program funds, other Federal grants, state grants for state routes, County roads funds for County roads, and developer funds.

Table 8-2
Swinomish 6-Year Program, 2005-2010
Adopted June 7, 2005

Route/Project Name	Description	Schedule	Est. Cost
Marina Road & Bridge, Phase 1	Roundabout extension project	2006	\$2,000,000
Village Roads - Moorage Way	Reconstruction of Moorage Way/Front St.	2006	\$200,000
Marina Road & Bridge, Phase 2	Develop remaining marina road & bridge	2007	\$4,542,000
Village Roads	Overlay & repair, selected Village roads	2007	\$3,500,000
McGlenn Island Road	Reconstruct road, causeway bridge	2007	\$500,000
Pioneer Parkway	Pedestrian safety improvements	2008	\$165,000
Pioneer Parkway	Intersection/traffic calming improvements	2008	\$326,000
Reservation Road	Widen one mile north from Snee-Oosh Rd.	2009	\$860,000
Snee-Oosh Road	Widen from Pioneer Parkway to Squi-Qui	2009	\$450,000
Snee-Oosh/Pull-Be-Damned Road	Improve Intersection (also with Sunset Dr.)	2010	\$300,000
Village Walk Trail	Construct 6,125 linear feet of trails	2010	\$25,000

The Swinomish Transportation Plan 2002 – 2007 identifies a list of short, medium, and long-range projects. Short term projects that have not been completed are combined with the medium range projects in the current 6-year plan. One project, Indian Road Widening, is shown in the long term plan. A number of studies are suggested, including the development of a 20-year transportation plan. Summarizing the findings of the LRP, the roads need safety improvements, primarily wider lanes and shoulders; a pedestrian circulation system is needed in the village center; and increased public transit service is needed.

Transit

Skagit Transit (SKAT) has a three-fold approach to expanding capacity. The approach is: add Saturday service; decrease headways on highest demand routes; and significantly increase the number of vanpools in service. Supporting strategies include: expand park and ride lots, add park and ride lots, add bus pullouts and shelters, and add inter-county service. Although not mentioned in the project list for SKAT, the regional intelligent transportation systems (ITS) proposal should consider transit to be an integral part of a regional system.

Safety

The Transportation Efficiency Act for the 21st Century (TEA-21) identifies seven planning factors (Chapter 2, page 3 of this document) including “Increase safety and security of the transportation system for motorized and non-motorized users”. Goal 1.i. of this plan expresses the importance of including safety considerations in all projects. This goal recognizes access management as one tool for doing so. This plan does not provide a specific safety analysis for the various transportation facilities in the county because of the short term nature of such analyses.

Drivers, vehicles, and ambient conditions contribute to accidents, with drivers being the predominant cause. Safety programs aim to reduce conditions that contribute to accidents while reducing the severity of accidents that do occur. Safety programs also aim to educate drivers in order to reduce the driver error that is such a large contributing factor in so many accidents. Nationally, the number of deaths from traffic accidents exceeds 40,000 per year. Recently the number has decreased, even as the number of vehicles and miles driven has increased, but the number is obviously unacceptably high. For Skagit County Table 8-3 shows highway fatalities for the years 1993 – 2002.

While the range of numbers of accidents is fairly narrow, it is clear that there is no pattern of increase or decrease over the years. A number of factors

can contribute to this lack of a pattern. One factor is weather. Years when inclement weather conditions are prevalent will usually have more accidents and more fatalities, especially if there is a lot of snow. Safety projects are designed to address specific issues that reduce risks of accidents.

**Table 8-3
Skagit County Highway Fatalities**

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Deaths	16	19	23	11	21	16	19	13	26	13

Finally, the random nature of accidents will cause variation when the sample size is small, and for fatalities, the size of the sample, Skagit County, is fairly small for counting fatalities on an annual basis, as the numbers indicate. Statewide and national figures are much more consistent.

Safety projects either respond to a need that has been identified by accident history or roadway conditions, such as roadway geometrics. Geometrics are physical conditions such as curves, shoulders, and lane widths. Other roadway conditions include pedestrian facilities, signage, and passing opportunities. Methods have not been developed that can reliably predict accidents over 20 year periods. Therefore there is no such analysis in this document.

Concerns over safety of the transportation system are not limited to highways. Each mode has its own areas of concern with many common themes and some distinct differences. On non-motorized facilities accidents occur because of the wide range of speeds by users and because users do not restrict themselves to the right side of the facility. These factors are more evident in contributing to accidents as usage goes up. For air travel, plane crashes are the most obvious concern, but accidents can also occur at the airport, with vehicle circulation, pedestrian circulation, and baggage handling being important concerns. Examples of concerns for transit, other than vehicle operations, are loading and unloading, and passenger movements getting to and from the bus on the adjacent facilities. In each of the cases cited above, proper facility design should reduce accidents as well as reduce their severity, when accidents do occur.

This plan places emphasis on safety by identifying major improvements that are needed to address safety situations. These include projects on SR 20 between I-5 and Sharpes Corner, SR 9 passing lanes, and improvements on I-5. Access management has become a well documented strategy for reducing

accidents and the plan recommends that the Department of Transportation conduct access management studies on SR 9, SR 536, and SR 538, where the proliferation of new access points threaten the safety of the traveling public. Access management should also be applied to local highways where conditions warrant.

Other Improvements

Maintenance and operations provide the basic services necessary to keep the existing systems effective. Maintenance includes replacing pavement, signs, pavement markings, guardrails, signal systems, and a host of other elements of the transportation system. Replacements are scheduled based on average life cycles, but unusual conditions such as severe winters can shorten these cycles and increase the average cost of maintenance. Emergency conditions such as floods can accelerate maintenance schedules even more.

Operations consist of monitoring systems and making adjustments, such as changing signal system timing. These costs are much higher in larger metropolitan areas where conditions can change more often and more severely.

Programs

Sometimes coordinated efforts produce improvements in transportation capacity, operations, and/or safety. These programs can result in projects but not necessarily.

Access management

Access management is a set of techniques for managing access to and from the highway that includes driveway location and design, median design, signalized intersection spacing, and parking lot design. There are numerous benefits to access management including increased safety for motorized vehicles as well as non-motorized vehicles and pedestrians; preservation of capacity; reduced fuel consumption; reduced air pollution; and better appearance of the streetscape. The higher the level of use of a highway, the more restrictive access should be. Access management works best when it is applied before problems become significant. This plan proposes that studies be conducted on three state highway corridors where access problems exist and will become worse if not addressed in a coordinated manner. Those corridors are SR 9, SR 536, and College Way (SR 538). Access management is also important on some non-state highways, with Riverside Drive/Burlington Boulevard being the best example.

Transportation demand management

Commonly referred to as TDM, transportation demand management is a collection of strategies intended to reduce traffic volumes. Some of these strategies are: encouraging formation of car and van pools; transit fare subsidies; telecommunications; providing bike lockers at work sites; providing flexible work hours; and guaranteed ride home programs. These strategies are instituted by employers, SKAT, SCOG, WSDOT, and local agencies. The van pool vehicle increases identified in this plan are an example of implementing TDM.

Intelligent transportation systems

Just as with transportation demand management, intelligent transportation systems (referred to as ITS) has been around longer than its name. ITS is the use of communications technologies to improve traffic flow and reduce accidents, as well as the impacts of them. Coordination of traffic signals, radio advisories, and traffic advisory signing are three ITS applications that all drivers will be familiar with, and that existed before there was an ITS. ITS became a program when these applications started to proliferate and it became important to coordinate them so that the technologies worked together. This coordination occurs with the development of an ITS plan, referred to as an ITS regional architecture. The development of a regional architecture for a region comprised of Whatcom, Skagit, and Island counties is included in the S-RTP/MTP.

Needed Studies

As noted in Chapter 7, a regional transportation plan provides less detail than is needed to create projects in most cases and more detailed studies are required. This plan proposed that the following studies be undertaken in the near future:

- SR 9 Access management
- SR 538 Access management
- SR 536 Access management
- I-5 Pre-Design
- Park and Ride Lots Needs and Location
- ITS Regional Architecture
- Update of the Skagit Countywide Air, Rail, Water, and Port Transportation System Study
- SR 20 I-5 to Sedro-Woolley E.C.L.
- North Sound Regional Rail Study – Phase II

Related Plans & Studies

The various agencies that provide transportation facilities and service have their own transportation plans, some system plans and some facility specific. The

Growth Management Act and federal legislation specifically require that some of these plans be consistent with each other. Others provide more detail for proposals identified in the plan. Some agency plans are not required to be consistent, but consistency is clearly in the public's best interest. Thus coordination is encouraged in these cases where overlap of jurisdiction or interface occurs.

Between updates of the Metropolitan Transportation Plan (MTP) and Sub-Regional Transportation Plan (S-RTP) other studies may make recommendations that are not identified or are even inconsistent with the regional plans. The regional and/or metropolitan plans can be amended to incorporate such changes. The timing of studies with relationship to each other is an ever-present issue of the transportation planning landscape that can never be resolved, only mitigated through close coordination.

The following list is not intended to be complete but illustrative:

- Washington's Transportation Plan and Highways System Plan
- Washington State's Ferry System Plan
- Washington State DOT Route Development Plans
- Skagit County Non-Motorized Plan
- SKAT Six-Year Transit Development Plan
- North Sound Regional Rail Study
- The North Sound Passenger Ferry Opportunities Study
- Local agency Growth Management Comprehensive Plans
- Skagit Regional Airport Master Plan Update
- The Swinomish Transportation Plan

Issues

In addition to issues facing policy makers of how to allocate constrained fiscal resources, there are a number of emerging issues that should be considered for more in-depth analysis in future unified planning work programs, perhaps as formal studies, or perhaps as the subject of ad hoc coordinating committees.

School transportation safety

A recent report by the Transportation Research Board, "The Relative Risks of School Travel" identifies five risk factors for children traveling to school. They are: human, vehicular, operational, infrastructure/environmental, and societal. The report quoted a study in which researchers said the children do not become capable of making mature decisions regarding their safety until 9 to 12 years of age. This makes it incumbent upon adults to take the necessary safety measures for them until they are able to do so for themselves. These adults are parents,

school personnel, vehicle drivers, and transportation infrastructure and service providers. The potential also exists for transportation infrastructure and service providers to participate in educational efforts aimed at the other responsible entities.

Security

The security of our transportation system from terrorism has become a visible issue since the attack on the World Trade Center and the Pentagon in September of 2001 and more recently the London underground transit system bombings in July of 2005. The transportation system can be the target or the instrument for terrorism. Terrorism on the transportation system threatens the employees of the system, travelers, and the facilities. Countermeasures are classified as prevention, preparedness, response, and recovery. Executing a security program requires the coordinated efforts of all governmental levels as well as business and citizens.

Many of the agencies that respond to acts of terrorism also respond to other types of disasters, such as hurricanes, fires, and earthquakes. Thus any resources expended and measures taken to reduce the possibility of and impacts of terrorism can have beneficial effects on preparedness for other types of disasters. While efforts to prepare for other types of disasters are highly visible, they are not for terrorism, for obvious reasons. Thus this discussion is very general in nature.

Terrorists select targets that are highly visible, economically important, have symbolic meaning, or sentimental value. They look for shock value; want to instill public fear; seek to have psychological impact; and draw attention to their group. In transportation they target bridges, tunnels, pipeline crossings, rest areas, isolated stretches of rural roads, key routes, cargo in transport, and adjacent areas. Local agencies wanting to reinforce the efforts to combat terrorism focused on the transportation system should refer to the five volume set of documents NCHRP Report 525, Surface Transportation Security, published by the Transportation Research Board, from which the above material was taken.

The American Trucking Association (ATA) has two terrorist specific programs, Highway Watch and Trucking Information Sharing. The first offers training to truckers on how they can take advantage of their opportunities to observe and report possible terrorist activities. The second is an information exchange program for truckers, available at the ATA website.

For Skagit County, the Washington State Department of Transportation is particularly concerned with issues of the border crossing with Canada in Whatcom County and the upcoming 2010 Winter Olympics in British Columbia. As with all risk management, the first goal is to prevent acts of terrorism, then to

mitigate the affects if possible, and finally to respond quickly and effectively to the impacts of events that do occur.

Operations

The Federal Highway Administration classifies operations as emergency preparedness, traffic control devices, road weather management, traffic incident management, and work zone mobility and safety. In recent years transportation agencies have begun to recognize the importance of including operations in transportation planning. One of the most evident ways that this can occur is in the development of the regional intelligent transportation systems (ITS) architecture which provide infrastructure for each of these operational areas.

Environment

The human-built environment has a significant impact upon the natural environment and nowhere is this more evident than in the transportation system. Transportation facilities consume land, usually with non-permeable surfaces; create barriers to natural water flow and animal migration; destroy the habitat of animals and plants; and dump air, noise, and other pollutants into the system. The best way to address these impacts is to avoid them, but when that is not possible, they should be reduced to the degree possible, and when that is not possible, mitigated. All three of these strategies usually incur costs that are reflected in project costs. These investments in the environment result in increased quality of living, or prevent a decrease in quality of living.

As noted, the first strategy is to avoid impacts. The best strategy for doing so is to reduce the amount of travel, or use of efficient modes of travel that minimize impacts such as car pools, van pools, and transit. When these strategies are not available, environmental quality can be improved by using fuel efficient vehicles and maintaining them to maximize fuel efficiency and prevent fluid leaks. Intelligent transportation systems (ITS) promote good environmental stewardship by reducing unnecessary travel by providing directions, reporting of highway incidents, and weather conditions. Interconnected signal systems smooth out the flow of traffic and reducing wasteful and polluting idle time at intersections.

The Skagit RTP and MTP include projects to encourage the reduction of vehicular trips. All of the projects in the plan will undergo environmental reviews to assure that they consider and incorporate environmental mitigation.

Access and Connectivity

Good access to and from destinations reduces travel and increases the ability of people and goods to move from point to point. Access to a variety of modes as well as access between modes is an important element of any transportation system. The pedestrian trip is the only one that can be conducted by one mode only. At a minimum all vehicular trips will contain a pedestrian element. Too often that element is forgotten in facility design, particularly in parking lot design, resulting in inconvenience as well as safety concerns for the pedestrian. This plan emphasizes the connection of modes and encourages safety in design. The proposed downtown Mount Vernon parking garage, for instance, will include a pedestrian bridge to the multi-modal center. The transit element of the plan includes the construction of transit shelters and bus pullouts to improve the pedestrian/bus interface. Many other such interfaces will be considered in the design of transportation projects identified in the plan.