
2006 Concurrency Report

A Report on the LOS of Snohomish County's Arterial Units as of April 2006

This report updates the report dated March 2005.

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Transportation and Environmental Services Division

May 2006

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Summary

The 2006 concurrency report documents the County's arterial circulation network performance with respect to LOS conditions and identifies strategies being undertaken to alleviate LOS deficiencies. The measurement of arterial system performance covers the period from March 2005 (the date of publication of the previous report) to March 31, 2006. The following is a summary of the current LOS status on the arterial circulation network:

Arterial Units in Arrears

Snohomish County Code (SCC) 30.91A.290 defines "Arterial unit in arrears" as "any arterial unit operating, or forecast to operate within six years, below the adopted LOS standard contained in SCC 30.66B.100, unless a financial commitment is in place to complete improvements or implement strategies that are forecast to remedy the deficiency within six years."

Eight (8) Arterial Units are in Arrears

- 20th ST SE (South Lake Stevens Road to SR 9)
- 20th ST SE (SR 9 to Off-Ramp to SR 204 Merge and SR-2 Trestle)
- 35th AV SE (168th ST SE to Seattle Hill Road)
- 180th ST SE (Broadway Ave to SR 9)
- 180th ST SE (35th AV SE to SR 9)
- Airport Way (99th Ave SE to SR 9)
- Marsh Rd (Lowell Larimer Rd to SR 9)
- Seattle Hill Rd (35th AV SE to SR 96)

Five (5) Arterial Units are at Risk of Falling into Arrears

- 35th AV SE from Grannis Road to 168th ST SE
- 35th AV SE from Seattle Hill Road to 144th ST SE (Mill Creek City Limits)
- Airport Way from 99th AV SE to Snohomish City Limits
- Alderwood Mall Pkwy. from Lynnwood City Limits to 164th ST SW
- Larch Way from Mountlake Terrace C/L to Cypress Way (south leg)

One Arterial Unit Currently at Ultimate Capacity

The County currently has one arterial unit designated as ultimate capacity, Snohomish-Woodinville Road, from King County line to SR 522.

List of Acronyms Used in This Report

AUIA	Arterial Unit in Arrears
DPW	Snohomish County Department of Public Works
LOS	LOS
SR	State Route (state highway)
WSDOT	Washington State Department of Transportation
TIP	Snohomish County's six-year transportation improvement program. The current TIP was adopted on November 21, 2005 for the years 2006-2011

2005 -2025 Transportation Element of the GMA Comprehensive Plan

In December of 2005, the Snohomish County Council adopted the "ten-year update" to its Growth Management Act (GMA) Comprehensive Plan including the Future Land Use Map and the 2005-2025 Transportation Element (TE) which replaces the 1995 Transportation Element. Among other things, this update to the TE identifies \$463 million dollars of major improvements to County arterials that will likely be needed to support the County's future land use element by providing the capacity needed to accommodate the planned growth without causing the transportation LOS to drop below the adopted standards. Thus, the update to the TE relates directly to the ability of Snohomish County Public Works to maintain concurrency and/or minimize the duration for which arterial units are in arrears.

The 2005 update to the Transportation Element also included revised LOS standards which will be substantially the same as the previous standards adopted in 1995, but with three significant refinements. The standards will be substantially the same in that LOS will continue to be measured on arterial units, average travel speed will still be one measure, and LOS E for urban and LOS C for rural will still apply to most roads. The three significant refinements are as follows:

1. The arterial LOS standard has been expanded to a two-step evaluation process. Step one determines whether or not average daily traffic volumes (ADT) on an arterial unit exceed predefined thresholds. If they do, then step two evaluates whether or not average travel speed falls below predefined minimums speeds. One effect of using ADT as the threshold step in the test is to allow lower travel speeds on arterials with low volumes and arterials already improved to ultimate capacity. (See section on LOS Standards later in report.)
2. Some rural arterials with urban traffic characteristics have been assigned the urban standard. Thus, the LOS standard has changed for a few roads from LOS C to LOS E. The criterion for these determinations, as well as a list of the selected arterials is included in the adopted TE. Future amendments could occur in conjunction with the county's annual docketing process.
3. The adopted TE includes a separate LOS standard for certain public facilities needed to support residential development which allows an average travel speed five miles-per-hour slower than for other types of developments. The determination of whether or not a proposed development will qualify for the lower LOS standard is based upon a set of criteria in a new section of code, Chapter 30.66B.103 SCC. In addition, public developments which use the lower LOS standard to achieve concurrency will be required to provide additional mitigation in the form of transit compatibility or transportation demand management (TDM).

These refinements to LOS standards will help allocate limited public resources more efficiently by focusing on improvements that will have the most effect for the most citizens.

Discussion on Arterial Units in Arrears

Overview of Concurrency for Developments and the 20th ST SE Arterial Unit in Arrears

The concurrency requirements of Snohomish County Code (Chapter 30.66B) require that for every development application the County determines whether or not capacity exists (and will likely exist) when the development adds its new trips to the road system, taking into consideration not only the traffic that is on the roads today, but all of the new traffic that will be added to the roads when all of the developments that have previously been deemed concurrent are occupied. The “system” the County uses to do this is based on review of traffic studies showing not only how many new trips a development will generate, but what roads those trips are likely to be added to.

Currently, 20th ST SE, from South Lake Stevens Road all the way to SR 2 has been identified as a road that will fail the County’s LOS Standard (because of lack of capacity) once all of the developments in the pipeline (deemed concurrent but not yet built) are added to the arterial, specifically for the AM westbound when commuters are trying to get across the trestle. The County has thus designated 20th ST SE as an “arterial unit in arrears” (AUIA) meaning it fails the County’s LOS test (average forecast travel speed of 13 mph).

20th ST SE would not be in arrears, if the county had a funding commitment in place for improvements that would remedy the LOS deficiency, but at this time the County is still several millions of dollars lacking in being able to fully fund the needed improvements. However, finding these funds is a very high priority for the county at this time, and the County is actively seeking state and federal grant funds and exploring other options such as bonding, Public Works Trust Fund loans and developer contributions. The goal is to achieve full funding within the next year so that 20th ST SE can be taken out of arrears, and developments that would add trips to 20th ST SE (specifically more than 3 trips in the morning peak hour westbound) can be deemed concurrent.

In the meantime, some development activity is proceeding on Cavalero Hill from smaller plats which do not generate enough new trips to trip the three peak-hour trip threshold. Note that there is one more issue with respect to 20th ST SE. Even if all of the planned improvements on 20th ST SE are completed, it is not clear that it will actually create enough additional capacity to simply lift the arterial unit in arrears. That is because the real source of westbound delay is the merge of two lanes of traffic (20th ST SE and SR 204) into one lane of traffic (for the US-2 trestle crossing the flood plain). Thus, the county is also exploring other options to deal with this larger issue such as a traffic signal at the merge and/or a westbound AM high-occupancy vehicle (HOV) lane which would allow persons in buses, vanpools, and carpools to achieve higher average travel speeds by bypassing all or part of the queue that backs up from the merge.

20th ST SE from South Lake Stevens Road to SR 9 (#316)

This arterial unit is still in arrears as of the date of this report, but a major widening on this portion of 20th ST SE and adjacent portions of SR 9 is fully funded for construction within six years so the “in arrears” status may change in the next few months following detailed LOS analysis.

Background

This arterial unit went back into arrears effective November 10, 2004. The history of this arterial illustrates several aspects of the county’s concurrency management system including the use of the inventory of developments in the pipeline to estimate future LOS, the vacillation of some arterial

units into and out of arrears status, and the coordination between the county and the state in improving the road system.

This arterial unit originally went into arrears in 2000 because of deficient LOS in the westbound direction in the morning caused by delay at the intersection of 20th ST SE with SR 9. Many commuters headed to work from the residential areas east of SR 9 use 20th ST SE to get to the I-5 corridor and are delayed getting past the intersection of 20th ST SE with SR 9. From 2000 until 2003, new development applications in the area stopped, because of inability to gain concurrency.

The county determined that widening 20th ST SE to five lanes between 99th AV SE and 91st AV SE would remedy the LOS deficiency, took steps to program, design and fully fund those improvements, and was able to take the arterial out of arrears on December 12, 2003 following council adoption of the six-year transportation improvement program.

Lifting 20th out of arrears opened the door for more new development applications, and within a short time concurrency had been granted for large developments that would add significant numbers of new trips to the arterial unit. As each development was deemed concurrent, its trips were added into the pipeline, the future LOS was estimated, and the projected average travel speed dropped, until in 2004 it went below the minimum 13 mph needed to meet the adopted standard. On November 10, 2004 the arterial unit went back into arrears. Once again, developments impacting this arterial unit cannot be deemed concurrent.

The LOS deficiency on this arterial unit cannot be remedied without improvements to SR 9. However, in the 2005 session, the Washington State Legislature passed (and the governor signed) a new transportation revenue package to fund 274 projects across the state over the next 16 years. The package includes:

- 9.5 cents gas tax increase phased in over four years \$5.5 billion
- Vehicle Weight Fee on passenger cars \$908 million
- The light truck weight fee increase \$436 million
- Annual motor home fee of \$75 \$130 million

Among the projects is \$123 million dollars for construction within the next six years to increase traffic flow and enhance motorist safety traveling the SR 9 corridor from Clearview to Arlington. This group of projects will widen to two lanes in each direction, add left and right turn lanes where needed and improve seven intersections along this section of SR 9 including SR 96, SR 92, 20th St. SE (Hewitt Ave), Soper Hill Road/Lundeen Parkway, SR 528, 84th St. NE, and SR 531/172nd St NE. Other improvements include upgrading the existing illumination and traffic signals and modifying the drainage system at each intersection. Therefore, with respect to the arterial unit being discussed in this section (20th ST SE between South Lake Stevens Road and SR 9), the improvements on SR 9 at 20th ST SE are shown in the TIP under number E.27.03 as being fully-funded for construction within six years.

The County's improvements for 20th ST SE between South Lake Stevens Road and SR 9 are shown in two segments on the TIP as follows:

- TIP # E.27.01, 91st AV SE to 99th AV SE (which includes SR 9 to 99th AV SE)
- TIP # E.27.02, 99th AV SE to South Lake Stevens Road

Both TIP #E.27.01 and #E.27.02 are shown as fully-funded for construction within six years. The scope of these improvements includes two travel lanes and two bicycle lanes in each direction, a center two-way-left-turn lane, full urban improvements (curb, gutter, sidewalk, and enclosed drainage), and intersection improvements at all major intersections.

The DPW is currently engaged in a study to determine if these improvements will remedy the LOS deficiency for this arterial unit. Following completion of this study DPW will reevaluate the "in arrears" status for this arterial unit.

20th ST SE from SR 9 to Off-Ramp to SR 204 Merge and SR-2 Trestle (#238)

Improvements to this arterial unit are in various stages of design and funding. Overall, the arterial unit is not yet fully-funded for improvements that would remedy the LOS deficiency within six years.

This arterial unit is treated as three separate sections in the County's adopted 2006-2011 transportation improvement program (TIP) as follows from east to west:

- TIP # E.27.01, 99th AV SE to 91st AV SE (which includes SR 9 to 91st AV SE)
- TIP # E.27.04, 91st AV SE to Cavalero Road
- TIP # E.27.05, Cavalero Road to SR-204

Improvements to the portion of this arterial unit (from 91st AV SE to SR 9) are fully funded for construction within six years (as described in the previous section).

The County's improvements for 20th ST SE between 91st AV SE and Cavalero Road are shown in the currently-adopted TIP under project number E.27.04 as not fully-funded for construction during the years 2009-2011. Like the improvements to the east, the scope of these improvements also includes two travel lanes and two bicycle lanes in each direction, a center two-way-left-turn lane, and full urban improvements (curb, gutter, sidewalk, and enclosed drainage).

The County's improvements for 20th ST SE between SR-204 and Cavalero Road are shown in the TIP under project number E.27.05 for preliminary engineering during the period 2009-2011.

Background.

Effective November 8, 2004, 20th ST SE from SR 9 to the Off-Ramp to the SR 204 Merge and the SR-2 Trestle (Arterial Unit #238) was determined to be in arrears based on projections of future LOS. The history of this arterial unit is closely related to the conditions on the arterial units further to the east in the 20th ST SE corridor. As described in the previous section, when the arterial unit on 20th ST SE between S. Lake Stevens Road and SR 9 was taken out of arrears in 2003, significant numbers of new development applications for the Cavalero Hill area were submitted, resulting in the addition of significant numbers of new trips in the pipeline. All of these new vehicular trips have been added to the pipeline of traffic to be considered when forecasting LOS. When considering all additional pipeline trips and the additional capacity from funded and programmed improvements to the road network, the average travel speed on 20th ST SE from SR9 to the Off-Ramp to the Merge with SR 204 in the AM peak hour is forecast to be below the 13 mph standard needed to meet the concurrency requirements.

The main operational constraints for this arterial unit in the westbound direction is the merge of 20th ST SE with SR 204. Currently, the capacity of the Highway 2 trestle, and the merge conditions from westbound Highway 2 to I-5 also constrain operations in this corridor, but the extension of HOV lanes currently being constructed on I-5 north to the interchange with US 2 are expected to remove this constraint. The County is currently engaged in a study to determine possible short-term improvements to the 20th ST / SR 204 merge.

35th AV SE from Seattle Hill Road to 168th ST SE (# 204)

Effective November 25, 2005, Arterial Unit #204, 35th Ave SE from Seattle Hill Road to 168th St SE was determined to be in arrears. This urban minor arterial provides access and circulation to the rapidly growing commercial and residential area of the East Mill Creek UGA and Silver Firs and Snohomish Cascade neighborhoods.

Under current conditions, this arterial unit has an acceptable LOS with northbound, average travel speeds in the PM peak hour of approximately 18 mph. The threshold for acceptable is LOS E represented by a travel speed of 13 mph or faster for this type of roadway. SCC 30.66B requires large developments (those that generate in excess of 50 peak hour trips) to forecast future LOS by adding pipeline traffic from developments previously deemed concurrent to the existing traffic volumes and modeling future travel speed along the corridor. In order to be deemed concurrent, the urban arterial units impacted by these large developments must be projected to operate at LOS E in the future condition.

With the addition of pipeline traffic, the future northbound PM travel speeds on 35th Ave SE reduce to approximately 8 mph northbound. Since improvements by DPW to remedy the LOS deficiency have not been funded, the arterial unit was determined to be in arrears. Several developers have been given conditional concurrency based on their offers to construct improvements to the intersection of 35th Ave SE and Seattle Hill Road to extend the northbound right turn pocket from its current length of 75 feet to 425 feet. These improvements would result in a forecast future northbound travel speed on the arterial unit of just over the threshold 13 mph in the PM peak hour. Currently a comprehensive improvement at this intersection has been included in the adopted TIP (E.28.04) but is not shown as fully funded.

180th St SE from Broadway Ave to SR 9 (#262)

LOS E is the adopted standard for this urban arterial unit on 180th ST SE, located on the east side of SR 9. A travel time study conducted in February 2001 shows that this unit was *operating* at LOS F for the westbound movement onto SR 9, during the morning and evening peak periods. It was declared "in arrears" on March 21, 2001. Congestion occurs primarily because of drivers heading west on 180th ST SE turning left to go south on SR 9. There is no turn lane or protected left-turn signal. The situation is compounded slightly by poor sight distance looking west which limits the ability of drivers making this left turn to see the eastbound cars approaching the intersection. Thus, as cars wait to turn left, cars trying to go straight or turn right are caught in the queue.

The County is currently working on a feasibility study for the 180th ST SE corridor between SR 527 and Broadway Avenue (TIP # E.41.01. The study began in 2005 and will be finished in 2006. Note that WSDOT has funding for improvements to SR 9 as far north as 176th ST SE, including the intersection of 180th ST SE and SR 9. These improvements are expected to begin in 2010-2011 and will have a positive effect on the LOS for this arterial unit and the other unit on 180th ST SE described in the next section. These improvements are expected to be substantially complete by the Spring of 2013, just beyond the six-year window for concurrency.

180th St SE from 35th AV SE to SR 9 (#350)

The adopted LOS standard for this urban arterial unit on 180th ST SE, located outside the urban growth area on the west side of SR 9, is LOS E. A travel time study conducted in February 2001 shows that during the PM peak period, this unit was operating at LOS F for

the eastbound movement onto SR 9. It was declared “in arrears” on March 21, 2001. Congestion occurs for the same reason as the arterial unit on the east side of SR 9. Congestion occurs primarily because of drivers heading east on 180th ST SE turning left to go north on SR 9. There is no turn lane or protected left-turn signal.

Airport Way from 99th Ave SE to SR 9 (#353)

The adopted LOS standard for this urban arterial unit on Airport Way on the east side of SR 9, is LOS E. Both Marsh Road and Airport Way are impacted by delay at the signal with SR 9. Traffic congestion is further compounded by traffic at the stop-controlled intersection of Springhetti Road and Airport Way and its close proximity to SR 9. Based on travel time studies conducted in 2000, 2001, and 2002 the westbound LOS is consistently LOS F. This unit was declared “in arrears” on December 8, 2000.

In 2005, Public Works, in coordination with WSDOT, completed a feasibility study that identified specific improvements for the Airport Way / Marsh Road / SR 9 intersection. The study included the use of a traffic simulation model to determine which improvements would effectively improve operating conditions and travel times. For improved traffic flow for all movements at the Airport Way / Springhetti Road and Marsh Road / SR 9 intersections the model shows that the most important elements are

- prohibiting the northbound left-turn lanes from Springhetti Road to Airport Way (though this causes significant queues on the Broadway Avenue approach to SR 9),
- making SR 9 five lanes approaching and departing Airport Way/Marsh Road in both directions, and
- adding a southbound left-turn lane from Airport Way onto Springhetti Road, and
- adding a westbound right-turn lane and left-turn lane on Broadway Avenue approaching SR 9 so that final channelization includes three westbound approach lanes.

The TIP (#E.38.02) shows construction in 2009-2011. However, the improvements are not yet considered fully-funded. DPW and WSDOT have continued to coordinate their funding and design of improvements at this location.

Currently, WSDOT is the lead agency for all of the improvements at this location and is developing the scope of work for the consultant that will be providing the public outreach and design services. It is likely that this effort will utilize the improvements identified through the county's feasibility study discussed above as one alternative for consideration.

Marsh Road from Lowell Larimer Road to SR 9 (#198)

Effective June 18, 2004 Marsh Road between Seattle Hill Road and SR9 was determined to be in arrears. Marsh Road is an urban arterial unit with an adopted standard of LOS E. With no improvements programmed and funded to remedy the LOS deficiency, DPW has determined that it is in arrears. The following paragraphs provide more detailed information.

The afternoon eastbound direction of travel for Marsh Road has a history of operating at a deficient LOS. Since June of 2000, travel time studies on this arterial unit have consistently been recorded below the adopted standard for a rural arterial. However, there were two programmed and funded projects that were expected to provide operational relief to Marsh

Road. One was the reopening of Lowell-Snohomish River Road between Everett and Snohomish. A second project was the widening to five lanes and extension of 134th Place SE/ Cathcart Way from Seattle Hill Road to SR9. Both of these projects provide alternative routes between the urban areas on the east and west and effectively added 3 eastbound lanes of capacity to the one existing lane on Marsh Road. Analysis of future conditions performed by DPW indicated that these two projects would result in Marsh Road operating at an acceptable LOS.

Lowell-Snohomish River Road reopened in January 2002. Cathcart Way was opened in May 2003. By the spring of 2004 travel patterns using the two new routes had stabilized, but the expected diversion of traffic and the anticipated improvement in travel time on Marsh Road was not as great as anticipated. Travel time studies determined that arterial unit was operating at LOS F with an average speed of 14.8 mph for eastbound travel in the afternoon peak hour. There are no programmed and funded projects in the county's six year Transportation Improvement Program (TIP), or in the Washington State Department of Transportation (WSDOT) budget that would remedy the LOS deficiency.

Improvements to the LOS on this arterial unit would require significant improvements to the intersection of SR9 and Marsh Road which were identified in the feasibility study described under Airport Way above, and are not yet fully funded, but expected to be constructed within the next six years.

Seattle Hill Road from 35th AV SE to SR 96 (#202)

Effective August 25, 2005, Arterial Unit #202, Seattle Hill Road from 35th Ave SE to 132nd St SE (SR 96) was determined to be in arrears. This urban minor arterial provides access and circulation to the rapidly growing commercial and residential area of the East Mill Creek UGA and Silver Firs and Snohomish Cascade neighborhoods.

Under current conditions, this arterial unit has an acceptable LOS with northbound and southbound, PM, average travel speeds of approximately 19 mph and 25 mph, respectively. The threshold for acceptable is LOS E represented by a travel speed of 13 mph or faster for this type of roadway. SCC 30.66B requires large developments (those that generate in excess of 50 peak hour trips) to forecast future LOS by adding pipeline traffic from approved developments to the existing traffic volumes and modeling future travel speed along the corridor. In order to be deemed concurrent, the urban arterial units impacted by these large developments must be projected to operate at LOS E in the future condition.

With the addition of pipeline traffic, the future travel speeds on Seattle Hill Road reduce to approximately 10 mph northbound and 11 mph southbound in the PM peak hour. No improvement projects to address these LOS deficiencies are fully funded in the county's 2006-2011 Transportation Improvement Program (TIP). Conditional concurrency certificates have been granted to several large development that impact the northbound PM movement. These developments have been conditioned to construct a right-turn pocket for northbound Seattle Hill Road at 132nd Street SE (SR 96) that brings forecast travel speed to an acceptable LOS at approximately 17 MPH. Similar conditions will be placed on any other developments impacting this northbound PM movement.

In the southbound direction, the improvement needed to provide acceptable LOS is likely to be a 250-foot-long westbound right-turn pocket on Seattle Hill Road at 35th Avenue SE. This improvement would bring the forecast southbound travel speed to an acceptable LOS of approximately 20 MPH in the PM peak hour.

Currently a comprehensive improvement at this intersection has been included in the adopted TIP (E.28.04) but is not shown as fully funded, dependant on uncertain developer funding.

Discussion on Arterial Units at Risk of Falling into Arrears

An arterial unit that consistently operates at or approaches the LOS standard can be described as “at risk of falling into arrears.” This is not a formal designation. It is based on the professional judgment of the County Traffic Engineer and is intended mainly as information for the concurrency reports.

35th AV SE from Grannis Road to 168th ST SE (#207 and #336)

This arterial unit originally went into arrears in June of 2003 after the arterial unit was projected to have an average travel speed less than 13 miles per hour (the LOS E threshold for this classification of urban arterial). The reason for the decline in LOS was the large number of developments in the area that had been deemed concurrent and were “in the pipeline” meaning that the forecasts of future LOS included the trips that will be added to the road system when the developments are occupied. It was determined that adding northbound and southbound turning lanes on 35th AV SE would remedy the projected LOS deficiency, but this improvement was not programmed and funded in the county’s six-year Transportation Improvement Program (TIP).

Nevertheless, subdivision applications submitted after the date in which the arterial unit went into arrears were granted concurrency on the condition that they construct the turning lanes needed to maintain LOS. Conditional concurrency imposes conditions on a development such that new trips cannot be added to the road system until improvements to remedy the LOS deficiency are completed. Thus, these developments would not be allowed to get building permits until the improvements were under contract and would not be able to get a final inspection on homes until the project was complete.

One of the developers with conditional concurrency prepared plans and specifications, and completed construction of the improvements identified as necessary to remove the arterial unit from arrears. On November 16, 2004 Traffic Operations conducted a travel time study on the improved corridor and determined the current operating speed to be 26.0 miles per hour. Analyses were also performed on the corridor with the improved conditions and with pipeline traffic and yielded a projected average travel speed of 13.9 miles per hour. On this basis, the arterial unit in arrears status of 35th Avenue SE, between Grannis Road and 168th Street SE was removed, effective December 16, 2004.

Because of the continued robust development in the vicinity of this arterial unit, it is highly likely that the projected LOS will once again fall below 13 miles per hour and the arterial unit will go back into arrears. The most recent future LOS analysis for this arterial unit indicated a future average travel speed of 13.8 miles per hour for the critical time/direction of AM southbound. The source of delay are the intersections at 180th ST SE and at Grannis Road.

TIP #E.28.02 programs \$3.6 million dollars for intersection improvements at 35th AV SE and 180th ST SE, but this project is not considered fully-funded at this time. TIP #E.28.03 programs \$1.5 million dollars for signal and channelization improvements at the intersection of 35th AV SE and Grannis Road, but this project is also not considered fully-funded at this time.

35th AV SE from Seattle Hill Road to 144 ST SE (Mill Creek City Limits) (#203)

For this urban arterial unit located in TSA D, DPW is closely watching deteriorating LOS projections for AM southbound and PM northbound. This area is impacted by large numbers of developments in the pipeline.

Airport Way from 99th AV SE to City of Snohomish City Limits (#235)

For this urban arterial unit located in TSA C, the previous concurrency report indicated that DPW was closely watching deteriorating LOS for PM northbound. Delay was occurring because of the stop-controlled intersection of Airport Way with 1st Street in the City of Snohomish and the signalized intersection one block further north with Avenue D. DPW worked with the city to create a northbound, right-turn lane at the approach to 1st Street that has improved the LOS on Airport Way. This was done by restriping the deck of the Snohomish River Bridge to provide two northbound lanes and one southbound lane. However, a 2006 travel time study shows that the effect of the improvement may not have improved LOS such that this arterial unit is no longer considered at risk of falling into arrears. TIP #38.03 programs \$10.4 million dollars towards a major widening from SR 9 to the Snohomish City limits, but the project is not fully funded.

Alderwood Mall Parkway from 164th ST SW to Lynnwood City Limits (#220)

For this urban arterial unit located in TSA D the most recent future LOS analysis estimated average travel speed of only 14.3 miles per hour in the afternoon peak hour for northbound traffic with 142 seconds of signal delay in the northbound direction at 164th ST SW. The 2005-2025 Transportation Element (TE) identifies arterial LOS improvements for Alderwood Mall Parkway including turn lanes at spot locations as needed to improve access and increased channelization at 164th ST SW to reduce northbound delay. These arterial LOS improvements have not been programmed in the currently adopted six-year TIP. If forecast average travel speed falls below 13 miles per hour, these arterial LOS improvements might be good candidates for developer-constructed improvements as part of conditional concurrency approvals.

Larch Way from Mountlake Terrace City Limits to Cypress Way South Leg (#214)

For this urban arterial unit located in TSA F, DPW is closely watching deteriorating LOS for the PM eastbound. Delay occurs at each of the intersections along Larch Way including Poplar Way, 28th AV W and Cypress Way. The most recent future LOS analysis for this arterial unit estimated average travel speed of only 13.8 miles per hour in the afternoon peak hour for eastbound traffic with estimated future average signal delays of 50 seconds at Poplar Way, 129 seconds at 28th AV W and 71 seconds at Cypress Way.

The 2005-2025 Transportation Element identified the ultimate improvements on this arterial as improvements of the existing two lanes to provide bicycle lanes and urban standards (sidewalks, planter strips). However, the arterial was identified as an Arterial LOS Improvement (ALOSI), meaning that in the next twenty years the County is only committed to turn lanes at spot locations as needed to improve access and improvements at intersections to reduce delay. These ALOSI improvements have not been identified on the currently adopted six-year TIP. If forecast average travel speed falls below 13 miles per hour, the ALOSI improvements might be good candidates for developer-constructed improvements as part of conditional concurrency approvals.

Arterial Units No Longer in Arrears

79th AV SE from 20th ST SE to 8th ST SE (#385)

This arterial unit is no longer in arrears because of changes to the adopted LOS standard effective February 1, 2006 (See subsection “Adopted LOS Standards” in Section “Review of the Concurrency Management System” of this report.) As of the date of this report, the forecast average daily traffic (ADT) for this unit was just under 6,500 (based on the current estimate of 790 ADT from recent counts plus an estimated 5,709 ADT in the pipeline from trips from developments that have already been deemed concurrent but are not yet occupied). This total forecast ADT is slightly less than the LOS (LOS) standard of 7,000 ADT for two-lane urban arterials that have not been designated as ultimate capacity. Since the arterial unit passes step one of the two-step LOS test (i.e., the ADT is less than the threshold), the second test (average travel speed) does not apply.

The arterial unit will still be monitored closely and is considered a “critical” arterial unit because it is expected that at some point relatively soon the forecast ADT will exceed 7,000. Once it does, then the average travel speed will be tested again. Though this urban arterial is currently operating at LOS D, with an average operating speed for southbound traffic about 20 mph in both the AM and PM peak hour, under future conditions the southbound traffic on 79th Ave SE is projected to operate well below the LOS E of 13 mph. The primary operational constraint for this arterial unit is the unsignalized intersection of 79th Ave SE with 20th ST SE. The remedy to this constraint would be signalization and additional turn lanes on all legs of the intersection. The County’s Six Year Transportation Improvement Program (TIP) does not include full funding for projects to remedy this LOS deficiency. However several developments impacting this arterial unit have been deemed concurrent, based on their written offers to construct the improvements needed to remedy the LOS deficiency, and the County has been reviewing their plans for channelization and signalization of this intersection. If these improvements are constructed before the ADT threshold exceeds 7,000, then the arterial unit will likely stay out of arrears.

Arterial Units No Longer Currently at Risk of Falling Into Arrears

Certain arterial units shown “at risk” of falling into arrears in the 2005 concurrency report are no longer currently at risk as shown and discussed below.

Broadway AV from 164th ST SE to SR 9 (#261)

In the previous report DPW was closely watching deteriorating LOS for PM northbound traffic. However, the 2005 revisions to the Snohomish County Comprehensive Plan Transportation Element changed the category of this arterial unit from rural to urban. Though there continue to be relatively heavy volumes on this road, the LOS is not at risk for falling below the adopted urban standard of LOS E.

The heavy traffic volumes on this route are the result of motorists using Broadway as an alternate to SR 9. The feasibility study discussed under the section on the arterial unit in arrears on Airport Way, identified improvements to this intersection consisting of adding a westbound right-turn lane and left-turn lane on Broadway Avenue approaching SR 9 so that final channelization includes three westbound approach lanes. The TIP (#E.38.02) shows construction in 2009-2011. However, the improvements are not yet considered fully-funded.

DPW and WSDOT have continued to coordinate their funding and design of improvements at this location. Currently, WSDOT is the lead agency for all of the improvements.

Paradise Lake Road from SR 522 to the King County Line (#354)

Like Broadway Avenue, in the previous report DPW was closely watching deteriorating LOS for AM westbound traffic. However, the 2005 revisions to the Snohomish County Comprehensive Plan Transportation Element changed the category of the portions of this arterial unit located outside of the urban growth area from rural to urban. Though there continue to be relatively heavy volumes on this road, the LOS is not at risk for falling below the adopted urban standard of LOS E. Significant reductions in congestion will be provided by the interchange which has been planned for some time as part of the state's improvements on SR 522. As of March 2006, WSDOT was approximately halfway done designing this project but had only about \$6 million funded out of a total estimated project cost of about \$65 million. After money is available for this project, it will take two to three years of design work before WSDOT can start construction.

Discussion on Arterial Unit at Ultimate Capacity

SCC 30.66B.110(1) says, "When the county council determines that excessive expenditure of public funds is not warranted for the purpose of maintaining adopted LOS standards on an arterial unit, the county council may designate, by motion, such arterial unit as being at ultimate capacity. Improvements needed to address operational and safety issues must be identified in conjunction with such ultimate capacity designation."

The County currently has one arterial unit at ultimate capacity, Snohomish-Woodinville Road in TSA E.

Snohomish-Woodinville Rd (King Co. Line to SR 522 EB Ramps)

Snohomish County Council Motion No. 97- 202 designated Snohomish-Woodinville Road as being at "ultimate capacity" effective June 23, 1997. The motion laid out in detail why this action was taken and what it means for developers and the County. In the motion the Council directed DPW to improve Snohomish-Woodinville Road's operating efficiency (e.g., shoulders and/or center turn lane). In March 2000 a pre-design study to evaluate design alternatives was completed. The study confirmed that the lack of width between the railroad tracks and SR 522 at the County Line precludes the possibility of constructing additional general-purpose lanes.

As of the date of this report, the final improvements on Sno-Wood Road are complete except for final paving. The improvements include two travel lanes, a center turn lane, bicycle lanes in both directions, a planter strip, curb, and sidewalk on the west side, stormwater detention ponds, and a traffic signal at the intersection with 240th St SE. As the road approaches the SR 522 off-ramp, it widens to five lanes. This configuration matches the WSDOT proposed improvement on SR 522. The improvements were coordinated with the City of Woodinville at the south end of the project and the development of a large COSTCO store at the intersection with 240th ST SE. COSTCO constructed some of the improvements as offsets to their traffic mitigation fees.

Review of the Concurrency Management System

Purpose of Concurrency Management System

The Snohomish County concurrency management system provides the basis for monitoring the traffic impacts of land development, and helps determine if transportation improvements are keeping pace with the prevailing rate of land development. Investigation of the arterial circulation network performance through the concurrency management system, provides an overview of the current LOS conditions on the county arterials, a synopsis of arterials considered to be potential concurrency problems, and a summary of the actions and programs to remedy LOS deficiencies.

Adopted Level-of-Service (LOS) Standards

Consistent with the requirements of the Growth Management Act (GMA), Snohomish County has adopted LOS standards for its arterial roads. The County's LOS standard is measured on arterial units (predefined segments of arterials) and is based on a two-step evaluation process. Step one determines whether or not average daily traffic volumes (ADT) on an arterial unit exceed predefined thresholds. If they do, then step two evaluates whether or not average travel speed falls below predefined minimum speeds. Some points of information with respect to the LOS standards are as follows:

- The average travel speed standard for most urban roads is LOS E which in most cases translates into a numerical equivalent of 13 miles per hour.
- The average travel speed standard for most rural roads is LOS C. This numerical equivalent of this LOS C travel speed standard for rural roads varies depending on the length of the arterial unit and the number of controlled intersections.
- One effect of using ADT as the threshold in step one of the test is to allow lower travel speeds on some arterials with low volumes and arterials designated as ultimate capacity.
- Certain arterials located outside of urban growth areas but with urban traffic characteristics are assigned the urban LOS standard. Beginning with the County's adoption of the ten-year update to its comprehensive plans (effective 2/1/06) the LOS standard for some arterials changed from "C" to "E". The rural or urban identification of an arterial is now based upon the classification provided by the Transportation Element (TE), not the physical location of the arterial. The criterion for these determinations, as well as a list of the selected arterials is included in the adopted TE. Future amendments could occur in conjunction with the county's annual docketing process.

Four-Tiered Approach to Level-of-Service Measurement

The County uses a four-tiered approach to determine the LOS on the County arterial circulation network. Snohomish County measures LOS on arterial units as opposed to individual intersections. The County arterial network is disaggregated into smaller units referred to as "arterial units". Arterial unit means a road, segment of a road, or portion of a road or a system of roads, for the purpose of making LOS and concurrency determinations.

Tier One, Screening: Current peak-hour traffic counts are compared with estimated capacities for each arterial unit and average daily traffic (ADT) counts are compared with the thresholds adopted in county code. This process screens out units that are operating

at very high LOS and are not at risk for LOS deficiency. Most arterial units fall into this tier, and the County only updates traffic counts for these arterial units every three years.

Tier Two, Monitoring: Those arterial units whose peak-hour traffic counts are approaching the estimated capacity and whose ADTs exceed the appropriate LOS threshold fall into the second tier, monitoring. Monitoring consists of more frequent traffic counts and analysis of the traffic conditions. If monitoring indicates that there may be a current LOS problem, then operational analysis is performed.

Tier Three, Operational Analysis: Operational analysis consists of travel-time studies and/or results from traffic models to determine whether or not LOS on an arterial unit is currently operating below the adopted standard.

Tier Four, Future Level-of-Service Determinations: Future LOS determinations are used to determine whether or not the LOS within six years is likely to be operating below the adopted standard with the addition of new trips expected to be added to the road system by developments already deemed concurrent. To be deemed concurrent, large developments are required to forecast adequate future LOS on critical arterial units.

A summary of the LOS status on the arterial circulation network as of March 2006 is shown in Table 1. The status for the past few years are also included in the table.

Table 1: Summary of LOS (LOS) Status

Arterial Unit Status	2000	2001	2002	2003	2004	2005	2006	2006 % of Total
LOS above screening level	174	185	225	261	258	255	252	80%
LOS below screening level	68	60	42	34	37	40	64	20%
Monitoring level	31	18	20	10	10	18	25	8%
Operational Analysis	29	33	15	17	21	14	30	9%
Arterial unit in Arrears	7	8	6	6	5	7	8	3%
Designated Ultimate Capacity	1	1	1	1	1	1	1	<1%
Total Number of units	242	245	267	295	295	295	316	100%

Ultimate Capacity

The term “ultimate capacity” refers to a designation that can be given to individual arterial units by the County Council on a case-by-case basis, following a public hearing. Snohomish

County has utilized the concept of ultimate capacity since 1991, primarily in recognition that further widening of some arterials would require unwarranted public expenditures and/or would have severe environmental or community impacts.

Amendments to Chapter 30.66B SCC adopted by the County in December, 2005, define criteria that DPW will use to make recommendations to the county council for whether or not certain arterials should be designated as "ultimate capacity." A higher ADT threshold in the LOS standard will apply to designated ultimate capacity arterials, representing the maximum possible use of the roadway. Developments impacting designated ultimate capacity arterials will be subject to additional design or mitigation requirements, but substantially lower average travel speeds will be tolerated.

The objective of ultimate capacity designation, in terms of growth management policy, is to allow growth to occur consistent with the adopted GMA land use plan, especially in situations like urban centers where increased urban densities are desired to support transit, or in other situations in which concurrency restrictions could encourage development outside the urban growth area.

Critical Arterial Units

The arterial units that are designated as arterial units in arrears, arterial units at risk of falling into arrears, monitoring and operational analysis, are collectively referred to as "critical arterial units." The county maintains a list of these units, which is updated in conjunction with this report, and reports on future LOS determination prepared by Developers. The list also shows the critical movements (i.e. AM or PM and NB, SB, EB or WB) for which LOS deficiencies have been identified.

This list of critical arterial units is provided to developers at traffic study scoping meetings.

Concurrency Determinations

Establishing Concurrency for Individual Development Applications

Snohomish County Code (SCC) Chapter 30.66B requires new developments to be reviewed for concurrency with respect to traffic impacts on the LOS of County arterials. The County has a system for making concurrency determinations based on the evaluation of the impacts of developments on arterial units in arrears. Detailed explanations of the methodology and figures can be found in the 2003 concurrency report. Upon the initial application submittal, a concurrency determination is made. Concurrency determinations are typically valid for six years from the date of determination. A development cannot be approved without a valid concurrency approval.

Table 2 shows a summary of the concurrency determinations that were made in 2005. This is up significantly from the concurrency determinations that were made in 2003. The data is organized by Transportation Service Areas and by size and type of Development. Size is determined by the number of peak-hour trips (PHT).

Table 2: Summary of Concurrency Determinations

Size / Type of Development	Transportation Service Areas						Totals by Year		
	A	B	C	D	E	F	2005	2004	2003
Small Residential (less than 7 PHT)	23	9	8	38	5	10	93	113	61
Medium Residential (7 - 50 PHT)	23	16	5	59	4	13	120	97	82
Large Residential (>50 PHT)	4	1	0	9	0	3	17	28	23
Small Non-Residential (less than 5 PHT)	0	1	1	4	1	0	7	21	7
Medium Non-Residential (5 - 50 PHT)	3	0	1	5	2	0	11	10	7
Large Non-Residential (>50 PHT)	0	0	1	3	0	0	4	4	0
Total	53	27	16	118	12	26	252	273	180

Pipeline Database and Key Intersections

The concurrency management system uses an inventory of developments in the pipeline, referred to as the pipeline database, to forecast future traffic volumes on arterial units. The term “developments in the pipeline” means developments previously deemed concurrent, but not yet built and occupied. If a development is deemed concurrent, the number of trips from its traffic distribution (trip assignment) is added to the inventory of trips from developments in the pipeline.

For each arterial unit, DPW has identified the key intersections, which contribute to the delay. Typically, each arterial unit will have a key intersection at one or both ends. Sometimes there will be one or more other key intersections along the arterial unit.

For each key intersection the possible traffic movements consist of all the possible directions in which a vehicle can go at that intersection (e.g., eastbound through, eastbound left turn, eastbound right turn, westbound through, etc.)

The traffic studies submitted by developers include trip assignments, which show the number of individual vehicle trips likely to be added to each traffic movement at each key intersection.

For each key intersection, the inventory of trips from developments in the pipeline consists of all the trips assigned from developments previously deemed concurrent. However, when a development is constructed and occupied, it is assumed that the trips from that development will show up in the actual traffic counts, and they can be removed from the pipeline inventory.

DPW maintains a database that contains all of the trip assignments at the key intersections for all developments deemed concurrent. Reports from this database provide the summations of trips for each possible traffic movement at each of the key intersections, and

are made available to developers for the purpose of preparing forecasts of future LOS conditions for concurrency determinations.

Arterial Network Planning and Programming

The concurrency management system deals with the monitoring of roadway LOS and provides input into the program planning process that leads to the annual preparation of a transportation improvement program (TIP).

Transportation Improvement Program (TIP)

The Snohomish County Council adopted the TIP for the period 2006–2011, on November 21 2005. Two sections of the TIP relating to traffic safety/intersection (Section D) and capacity (Section E) set out the projects that are expected to sustain the adopted LOS on the County’s arterial network. Table 3 lists these so-called “concurrency projects” in the 2006-2011 TIP.

Table 3: Concurrency Projects in the 2006-2011 TIP

**CONC	TIP #	PROJECT
CF	E.23	SNOHOMISH-WOODINVILLE RD: SR 522 TO KING COUNTY LINE
CF	E.27.01	20 ST SE CORRIDOR: PH 1: 91 AVE SE TO 99 AVE SE
CF	E.27.02	20 ST SE CORRIDOR: PH 2: 99 AVE SE TO S LAKE STEVENS ROAD
CU	E.27.04	20 ST SE CORRIDOR: CAVALERO RD TO 91 ST AV SE
CU	E.27.05	20 ST SE CORRIDOR: US 2 TO CAVALERO ROD
CU	E.28.01	35 AVE SE / 39 AVE SE: SEATTLE HILL RD TO 228 ST SE FEASIBILITY STUDY
CU	E.28.02	35 AVE SE / 180 ST SE INTERSECTION IMPROVEMENT
CU	E.28.03	35 AVE SE / GRANNIS INTERSECTION SIGNAL AND CHANNELIZATION
CU	E.28.04	35 AV SE / SEATTLE HILL RD CHANNELIZATION
CU	E.38.01	AIRPORT WAY & MARSH RD: SNOHOMISH TO SEATTLE HILL RD FEASIBILITY STUDY
CU	E.38.02	AIRPORT WAY / MARSH RD / SR 9 / SPRINGHETTI RD OPERATIONS IMPROVEMENTS
CU	E.38.03	SR 9 TO BRIDGE #1 MAJOR WIDENING
CU	E.41.01	180 ST SE: 35 AVE SE TO BROADWAY AVE FEASIBILITY STUDY

**** CONC:** Concurrency projects in the TIP are highlighted by the use of two designations, CF and CU. CF indicates a fully funded project that will eliminate a concurrency problem, or prevent a concurrency problem from occurring elsewhere in the arterial network. CU indicates a project to eliminate a concurrency problem, or prevent a concurrency problem from occurring elsewhere in the arterial network, that is *not* yet fully funded.

Six-Year Network

DPW maintains an updated list of the “six-year network.” This list is provided to developers, who are required to do traffic studies to support their applications for new developments. Analyses of future trip distributions, assignments, and forecasts of future LOS, are based on assumptions about the County’s future road network, as it will be in six years. The six-year network is made up of a list of those projects in the TIP that are fully funded, and are expected to be constructed and open within six years. Joint projects with other jurisdictions may be added to the list if they are shown to be fully funded in each jurisdiction’s TIP and are expected to be constructed and open within six years. Projects from TIPs in other jurisdictions may also be added to the list if they are fully funded. WSDOT does not produce a TIP. State projects are added to the list of future network assumptions when they have been budgeted for construction. Table 4 lists the projects in the current Six-Year Network.

Table 4: Six-Year Network

Jurisdiction	Road Name	From	To	Description	TIP#
County	148 ST SW	at Manor Way		Intersection Signalization	D.02.27
County	148 ST SW	52 AVE W	SR 99	Three lane urban + bike lanes	D.08A
County	148 ST SW	SR 99	35 AVE W	Five lane urban + bike lanes	D.08A
County	162 PL SW	22 AVE W	Ash Way	New 2 lane urban	D.31
Developer	164 ST SE`	35 AV SE	Sunset Road	New 2 lane urban	
County	20 ST SE	91 AVE SE	99 AVE SE	Five lane urban + bike lanes	E.27.01
County	20 ST SE	99 AVE SE	S Lake Stevens Road	Five lane urban + bike lanes	E.27.02
Bothell	228 ST SE	at 35 AVE SE		Intersection Signalization	City of Bothell
Tulalip Tribes	34th AV NE	116th ST NE		Intersection Realignment and Improvements	Tulalip Tribes
County	35 AVE W	at 156 ST SW		Intersection Signalization	D.02.12
County	39 AVE SE	at 212 ST SE		Intersection Signalization	D.02.31
County	51 AVE NE	at Shoultes Road/108 ST NE		Intersection Improvement	E.37.02
County	52 AVE W	at 160 ST SW		Intersection Improvements	D.02.32
County	84 ST NE	at 99 AVE NE		Intersection Widening	D.02.23

Jurisdiction	Road Name	From	To	Description	TIP#
County	84 ST NE	at 123 AVE NE		Intersection Improvements	D.02.38
County	Beverly Park Road	Airport Road	SR 525	Five lane urban + bike lanes	E.08.01
WSDOT	I 5	at 164 ST SW		Direct access bus ramp	WSDOT
WSDOT	I 5	at 172 ST NE		Interchange Improvements	WSDOT
County	Locust Way	at 15 AVE W		Intersection Improvements	D.02.35
County	Lundeen Park Way Extension	SR 9	SR 204	Three lane urban + bike lanes	E.20
County	Lundeen Parkway	at Callow Road		Intersection Improvements	D.02.34
County	Marine Drive	at Waterworks Road		Intersection Signalization	D.02.16
County	Marine Drive	at 12 AVE NW		Intersection Improvements	D.02.37
County	Snohomish-Woodinville Road	SR 522	King County Line	Three lane urban + bike lanes	E.23
WSDOT	SR 522	at Fales/Echo Lake Roads		Interchange Improvements	WSDOT
WSDOT	SR 527	132 ST SE	112 ST SE	Five lane urban + bike lanes	WSDOT
WSDOT	SR 9	SR 522	SR 524	Five lane urban	WSDOT
WSDOT	SR 9	at Bunk Foss Road		Intersection Improvements	WSDOT

Table Showing Arterial Unit Status

Table 5 shows the 2006 status of arterial units and changes between the 2005 report and the 2006 report sorted by TSA and then Road Name.

The abbreviations in the table are:

AUIA = arterial unit in arrears

M = monitoring

OA = operational analysis

TTS = travel time study

S = screening

UC = ultimate capacity

RECON = reconnaissance

FC = forecast LOS

W / IMPS = with fully-funded improvements completed or expected to be complete within six years

ADT = average daily traffic

V/C = LOS estimate based on comparison of volumes and estimated capacity

Table 5. Arterial Status in 2006 Compared with 2005

TSA	ROAD NAME	FROM	TO	UNIT		2005	2006	Notes
A	OLD PACIFIC HWY	STANWOOD C/L/276 ST NW	PIONEER HWY	101		S	M ^(V/C)	RECON 2006
A	PIONEER HWY	300 ST NW	SKAGIT CO/L	102		S	OA ^(V/C)	RECON 2006
A	MARINE DR	LAKEWOOD RD	STWD C/L	118		S	M ^(V/C)	RECON 2006
A	140 ST NE / NW	46 AVE NW	23 AVE NE	138		S	OA ^(V/C)	RECON 2006
A	140/STIMPSO N/136 ST NE	23 AVE NE	MARYSVILLE C/L	139		M	S	2006 RECON LOS EB=B, WB=B
A	27 AVE NE	MARINE DR NE	END OF CO RD	162		S	M ^(V/C)	RECON 2006
A	MARINE DR NE	I-5 SB ON/OFF RAMPS	MARYSVILLE UGB/.128 MI E 27 AVE NE	163		OA	M	2005 TTS LOS = D
A	34 AVE NE	116 ST NE	136 ST NE	248		OA	S	2006 RECON LOS NB=A, SB=B

TSA	ROAD NAME	FROM	TO	UNIT		2005	2006	Notes
A	SMOKEY PT BLVD	200 ST NE	SR 530	357		S	M ^(VIC)	RECON 2006
A	SMOKEY PT BLVD "Y"	SMOKEY PT BLVD	SR 530	371		S	M ^(VIC)	RECON 2006
A	MARINE DR	7 DR NW	83 PL NW	423		S	OA ^(VIC)	RECON 2006
B	84 ST NE	SR 9	SR 92	153		S	OA ^(VIC)	RECON 2006
B	N/S MACHIAS RD	LK STEV UBG / 12 ST NE	MACHIAS CUTOFF RD	176		S	OA ^(VIC)	RECON 2006
B	S LK STEVENS / MACHIAS CUTOFF RD	20 ST SE	WILLIAMS RD	179		S	M ^(VIC)	RECON 2006
B	OK MILL/CRESSWELL RD	S. MACHIAS RD	DUBUQUE RD	181		S	OA ^(VIC)	RECON 2006
B	20 ST SE	SR 2 WB TRESTLE ENTRANCE	SR 9	238		AUIA	AUIA	
B	BUNK FOSS RD/RITCHEY RD	SR 9	S.MACHIAS RD	256		OA	OA	TTS 2006
B	20 ST SE	SR 9	S LK STEVENS RD	316		AUIA	AUIA	
B	91 AVE SE	20 ST SE	SR 204	317		M	M	RECON 2006
B	CAVALERO RD	20 ST SE	LK STEVENS UGB	363		OA	S	LESS THAN 7,000 ADT
B	79 AVE SE	20 ST SE	8 ST SE	385		AUIA	M	FC ADT = 6,499
B	83 AVE SE	20 ST SE	4 ST SE	387		OA	S	FC ADT = 2,989
C	MARSH RD	LOWELL LARIMER RD	SR 9	198		AUIA	AUIA	TTS 2006

TSA	ROAD NAME	FROM	TO	UNIT		2005	2006	Notes
C	AIRPORT WY	99 AVE SE	SNOHOMISH C/L	235		OA	M	NO LONGER AT RISK W / IMPS
C	88TH ST SE / 92 ST SE	SR 2 OVERPASS	W END BRIDGE #633	237		S	OA ^(VIC)	RECON 2006
C	OLD OWEN RD	MNR UGB / 0.88 MI FROM OAKS ST	SULTAN UGB	257		S	M ^(VIC)	RECON 2006
C	BROADWAY AVE	164 ST SE	SR 9	261		OA	M	NO LONGER AT RISK: NOW URBAN
C	WOODS CR RD	INGRAHAM RD (MNR UGB)	SLAKE ROESIGER	348		S	M ^(VIC)	RECON 2006
C	AIRPORT WY	SR 9	99 AVE SE	353		AUIA	AUIA	
C	SPRINGHETT I RD	BROADWAY AVE	AIRPORT WY	445		S	M ^(VIC)	RECON 2006
D	100 ST SE	EVT C/L (370 ft. w/o 33 Ave SE)	35 AVE SE	200		S	M ^(VIC)	RECON 2006
D	35 AV SE	SR 96	100 ST SE	201		S	OA ^(VIC)	RECON 2006
D	SEATTLE HILL RD	35 AVE SE	SR 96	202		OA	AUIA	FC LOS F
D	35 AVE SE	SEATTLE HILL RD	144 ST SE (MILL CR C/L)	203		OA	OA	AT RISK BASED ON FC: TTS 2006
D	35 AVE SE	168 ST SE	SEATTLE HILL RD	204		OA	AUIA	FC LOS F
D	180 ST SE	SR 527	35 AVE SE	206		M	OA	RECON 2006
D	ALDERWOOD MALL PARKWAY	164 ST SW	LYNNWOOD C/L	220		M	OA	AT RISK BASED ON FC
D	52 AVE W	LYNNWOOD C/L	148 ST SW	222		S	OA ^(VIC)	RECON 2006

TSA	ROAD NAME	FROM	TO	UNIT		2005	2006	Notes
D	52 AVE W/BEVERLY PARK	148 ST SW	MUKILTEO C/L	223		S	OA ^(VIC)	RECON 2006
D	148 / 150 ST SW / JEFFERSON / MADISON WY	SR 99	ASH WY	225		S	OA ^(VIC)	RECON 2006
D	BEVERLY PARK RD	SR 525	AIRPORT RD (EVT)	227		OA	OA ^(VIC)	RECON 2006
D	AIRPORT/128 ST SW	SR 99	I-5 (SB RAMPS)	228		M	OA	FC LOS E
D	4 AVE W	128 ST SW	112 ST SW	229		M	OA	FC LOS E
D	132 ST SE / 134 PL SE	SR 96 (SEATTLE HILL RD)	SNOHOMISH CASCADE DR	259		S	M ^(VIC)	RECON 2006
D	36 AVE W	LYNN C/L s/o 164 ST SW	164 ST SW	287		S	OA ^(VIC)	RECON 2006
D	GIBSON RD / 134 ST SW / 4 AVE W / ASH WY	SR 99	128 ST SW	293		S	OA ^(VIC)	RECON 2006
D	4 AVE W	112 ST SW	EVERETT C/L	352		M	OA ^(VIC)	RECON 2006
D	36 / 35 AVE W	164 ST SW	SR 99	415		S	OA ^(VIC)	RECON 2006
D/E	35 AVE SE	GRANNIS RD	168 ST SE	336/207		M	OA	FC LOS E
E	SNOHOMISH WOODINVILLE RD	KING CO LINE	SR 522 (EB RAMPS)	211		UC	UC	PROJECT COMPLETED 2005
E	180 ST SE	SR 9	BROADWAY AVE	262		AUIA	AUIA	FORECAST ADT > 7,000; TTS 2006
E	FALES / ELLIOTT RD	SR 522	BROADWAY AVE	265		S	M ^(VIC)	RECON 2006 AFTER CONST.

TSA	ROAD NAME	FROM	TO	UNIT		2005	2006	Notes
E	ECHO LK RD	SR 522	LOST LAKE RD	266		S	M ^(V/C)	RECON 2006 AFTER CONST.
E	228 ST SE	39 AVE SE	SR 9	272		OA	S	NOW URBAN
E	180 ST SE	35 AVE SE	SR 9	350		AUIA	AUIA	TTS 2006
E	PARADISE LAKE RD	SR-522	KING CO/L	354		OA	M ^(V/C)	RECON 2006
E	SUNSET RD	180 ST SE	TSA D/E BOUNDARY	397		M	M	BASED ON FC
E/F	39 AVE SE	228 ST SE	SR 524	209/33 2		M	OA ^(V/C)	RECON 2006
E/F	YORK RD/35 AVE SE	SR 524	GRANNIS RD	420/33 7		M	OA ^(V/C)	TTS 2006
F	228 ST SW	LOCUST WY	BTHL C/L	212		S	OA ^(V/C)	RECON 2006
F	LARCH WAY	MLT C/L	CYPRESS WY (S LEG)	214		M	OA	AT RISK FC LOS E
F	204 ST SW	LYNN C/L	28 AVE W	215		S	M ^(V/C)	RECON 2006
F	LOCUST WY	KING CO LINE	228 ST SW	274		S	M ^(V/C)	RECON 2006
F	LOGAN RD / LARCH WY	CYPRESS WY (N-LEG)	DAMSON RD	276		S	M ^(V/C)	RECON 2006
F	POPLAR WY	LYNNWOOD C/L	BRIER C/L	278		M	M	2004 TTS LOS=D
F	228 ST SE	35 AVE SE / BTHL C/L	39 AVE SE	333		S	M ^(V/C)	RECON 2006

Note: Arterial units in all categories other than screening are considered "critical" and require additional analysis by developers for concurrency determinations (See section on Critical Arterial Units page 12.)