
2007 Concurrency Report

A Report on the LOS of Snohomish County's Arterial Units as of March 2007

This report updates the report dated April 2006.

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Transportation and Environmental Services Division

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2007 Concurrency Report Executive Summary

The 2007 concurrency report summarizes the level-of-service (LOS) of Snohomish County's arterial road system and the strategies by the Department of Public Works to remedy LOS deficiencies. This report covers the period from April 2006 (the date of publication of the previous report) to March 2007.

Arterial Units in Arrears (AUIA)

Snohomish County Code defines arterial unit in arrears (AUIA) as any arterial unit operating (or within six years forecast to operate) below the adopted LOS standard, unless a financial commitment is in place for improvements (or strategies) to remedy the deficiency within six years. Any new development that adds more than three directional peak-hour trips to an AUIA cannot be deemed concurrent and cannot be approved.

Concurrency Management System

A review of Snohomish County's concurrency management system is available on the County's web site. The web site includes the full 2007 concurrency report, previous concurrency reports, and many other documents related to the County's traffic mitigation and concurrency regulations. (The site is called the '30.66B' site because Chapter 30.66B is the County's traffic mitigation and concurrency ordinance.) The path and internet address starts at the Snohomish County home page and follows the DPW organizational chart as follows:

[http://www1.co.snohomish.wa.us/
Departments/Public_Works/
Divisions/TES/
ProgramPlanning/3066B/](http://www1.co.snohomish.wa.us/Departments/Public_Works/Divisions/TES/ProgramPlanning/3066B/)

Six (6) Arterial Units are in Arrears

- 20th ST SE (SR 9 to the SR 2 Westbound trestle entrance)
- 35th AV SE (168th ST SE to Seattle Hill Road)
- 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)
- York Road/35th AV SE (Grannis Road to SR 524)

Three (3) Arterial Units are No Longer in Arrears

- 20th ST SE (South Lake Stevens Road to SR 9)
- 180th ST SE (Broadway Ave to SR 9)
- 180th ST SE (35th AV SE to SR 9)

Twelve (12) Arterial Units are at Risk of Falling into Arrears

- 4th AV W from Everett City Limits to 112th ST SW
- 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)
- 164th ST SW/SE from I-5 to Mill Creek

- Airport Road / 128th ST SW from SR 99 to I-5
- Airport Way from 99th AV SE to Snohomish City Limits
- Alderwood Mall Pkwy. from Lynnwood City Limits to 164th ST SW
- Gibson Road from 128th ST SW to SR 99
- Larch Way from Mountlake Terrace C/L to Cypress Way (south leg)
- Lincoln Way from Beverly Park Road to Admiralty Way
- Meadow Road from 148th ST SW to 164th ST SW
- Poplar Way from Lynnwood City Limits to Brier City Limits

One Arterial Unit is Designated as 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. See previous concurrency reports for a discussion about this road.

Table 1: Summary of Level-of-Service (LOS) Status

Below is the annual summary of the current and past LOS status of arterial units:

	'00	'01	'02	'03	'04	'05	'06	'07	% of Total ('07)
* LOS above screening level	174	185	225	261	258	255	252	** 250	83%
LOS below screening level	68	60	42	34	37	40	64	53	17%
Total number of arterial units	242	245	267	295	295	295	316	303	100%
Breakout of arterial units below the screening level:									
Monitoring level	31	18	20	10	10	18	25	23	8%
Operational analysis level	29	33	15	17	21	14	30	22	7%
Arterial units in arrears	7	8	6	6	5	7	8	*** 7	2%
Total below screening level	68	60	42	34	37	40	64	53	17%

* See *Review of Concurrency Management System* described above for an explanation of the various ‘tiers’ of the concurrency management system. In simple terms, arterial units above the screening level are those clearly passing the LOS test. Below the screening level, as congestion increases, the level of analysis typically goes from monitoring to operational analysis which determines if the arterial unit is in arrears.

** Includes one arterial unit at ultimate capacity.

*** One of these arterial units has two numbers (337 and 420) because it is on the border between transportation service areas (TSAs) and thus counts as two arterial units.

2007 Concurrency Report

The 2007 concurrency report summarizes the level-of-service (LOS) of Snohomish County's arterial road system and the strategies by the Department of Public Works to remedy LOS deficiencies. This report covers the period from April 2006 (the date of publication of the previous report) to March 2007.

List of Acronyms Used in This Report

AUIA	Arterial Unit in Arrears
DPW	Snohomish County Department of Public Works
LOS	Level of Service
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, 2006 for the years 2007-2012

Arterial Units in Arrears

Overview of Concurrency 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. This concurrency determination includes two important considerations: 1. an estimate of not only the traffic that is on the road system today, but all of the new traffic that will be added to the road system when all of the developments that have previously been deemed concurrent are occupied, and 2. the additional capacity that will be provided on the road system by any improvements which will be constructed and open to the public within the next six years.

Currently, 20th ST SE (from SR 9 to the SR 2 westbound trestle entrance) 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 occupied) are added to the arterial, specifically for the AM westbound when commuters are trying to get across the trestle. The most recent future LOS analysis estimates that the average travel speed for motorists westbound in the AM will be less than the adopted standard of 13 mph. This analysis takes into consideration all of the capacity improvements that are currently fully-funded for construction and will be constructed within six years. 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).

In the meantime, some development activity is proceeding on Cavalero Hill from smaller plats which do not generate enough new trips to add more than three westbound in the morning peak hour. Also, the County continues to seek funding to construct all of the capacity improvements planned for the 20th ST SE corridor. At this time, only the section between Cavalero Hill and the trestle remains unfunded.

Note that there is one more issue with respect to 20th ST SE. Even once all of the planned improvements on 20th ST SE are completed, it is not clear that they will actually create enough additional capacity to allow the County to simply lift the AUIA. 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 continues to explore other options to deal with this larger issue such as improvements to the east end of the trestle, use of a surface route on Ebey Island, 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 SR 9 to the SR-2 Westbound Trestle Entrance(#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 2007-2012 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.

The County's improvements for 20th ST SE between 91st AV SE and Cavalero Road are also shown in the currently-adopted TIP under project number E.27.04 as fully-funded for construction during the years 2008-2009. 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 construction in 2008-2009 but these improvements are not yet fully funded.

Effective November 8, 2004, 20th ST SE from SR 9 to the SR 2 westbound trestle entrance (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 SR 2 westbound trestle entrance 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 105 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. In addition to the developer-constructed improvements, the County has programmed other improvements at this intersection in the adopted TIP (E.28.04) and is currently engaged in traffic analysis to determine if the arterial unit can be taken out of arrears.

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, DPW, 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.

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. The WSDOT project information page on the WSDOT web site indicates construction from 2008-2010 and funding of about \$5M from the 2005 Gas Tax. The project manager is Dawn McIntosh. It is likely that WSDOT's design effort will utilize the improvements identified through the county's feasibility study discussed above as one alternative for consideration. The final improvements will likely include additional lanes on all approaches to these intersections.

County TIP project E.38.03 provides for widening of Airport Way from SR 9 to Bridge #1 at the Snohomish city limits. The project is not yet fully funded. The TIP shows preliminary engineering and right-of-way acquisition for the years 2010-2012. The plan shows two lanes with rural standards for the section from SR 9 to 99th AV SE and three lanes with urban standards and bike lanes from 99th AV SE to the Snohomish city limits.

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

Effective June 18, 2004 Marsh Road between West Lowell-Larimer 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 fully-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 E with an average speed of 14.8 mph for eastbound travel in the afternoon peak hour.

Improvements to the LOS on this arterial unit will result from the WSDOT improvements to the intersection of SR9 and Marsh Road which were described under Airport Way above.

In addition, the County is finishing a feasibility study identifying improvements to the two intersections on the west end of Marsh Road. TIP project E.38.04 will improve the intersection of Marsh Road and West Lowell-Larimer Road. TIP project E.38.05 will improve the intersection of East Lowell-Larimer Road and Seattle Hill Road. Neither of these projects is programmed for more than preliminary engineering in the 2010-2012 time frame. However, in terms of LOS on Marsh Road, the intersection with SR 9 is really the key.

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 southbound AM average travel speeds of about 16 mph and northbound PM average travel speeds of about 15 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 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 7 mph northbound in the PM peak hour. No improvement projects to address these LOS deficiencies are fully funded in the county's 2007-2012 Transportation Improvement Program (TIP). Conditional concurrency certificates may be granted to large developments that impact the northbound PM movement if they offer to construct improvements to remedy the LOS deficiency.

In the southbound direction, the improvements needed to provide acceptable LOS on Seattle Hill Road include additional channelization at 35th Avenue SE and these improvements are included in the adopted TIP (E.28.04) and are fully funded in terms of the improvements on Seattle Hill Road. Arterial Unit 204 is also affected by improvements at the intersection of Seattle Hill Road and 35th AV SE (see also discussion above for AU #204).

York Road/39th AV SE from Grannis Road to SR 524 (#337 and #420)

This arterial unit went into arrears in December of 2006 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 arterial unit when those developments are occupied. In May 2006 this arterial unit was operating at LOS E in the most congested peak hour and direction which is southbound in the morning with a measured average travel speed of 15.3 mph based on twelve travel time runs. The arterial unit was determined to be in arrears based on a recent travel speed forecast of 10.1 mph. The primary operational constraint is the intersection of York Road with SR 524 and the close proximity of this intersection with the immediate intersection to the north of York and Jewell Road. One remedy to this constraint is the extension of the southbound right-turn lane on York Road and the modification of the operation of the intersection of York and Jewell Road. As of the writing of this report, the intersection of York and Jewell had also been determined to be an inadequate road condition (IRC). There are currently no projects identified on the six-year TIP to remedy the LOS deficiency on this arterial unit. DPW continues on several fronts to improve the road system. Developments impacting the arterial unit and/or the IRC have been able to proceed conditioned upon their agreeing to construct improvements to remedy the LOS deficiency and/or eliminate the IRC. DPW is also working with development east of this location to build another north-south arterial parallel to York/39th/35th. And, DPW continues to analyze the traffic operations in this corridor to evaluate different improvement alternatives.

Note that this arterial unit has two numbers because it is on the border between two transportation service areas (TSAs) and is thus counted as two arterial units in the summary tables.

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.

4th AV W from Everett City Limits to 112th ST SW (#352)

Recent travel time studies by developers on this arterial unit suggest the possibility that LOS may be failing for this arterial unit, though current construction on the overpass of 112th ST SW across I-5 may be an indirect cause. The Transportation Element identifies needed widening of this arterial unit to from three lanes to five lanes with bicycle lanes and urban standards. The adopted 2007-2012 Transportation Improvement Program includes a design report for the corridor (E.39.01) and intersection improvements at 108th ST SW (E.39.02) and 112th ST SW (E.39.03). DPW will conduct travel time studies later this year.

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 at 180th ST 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 AUJA status of 35th Avenue SE, between Grannis Road and 168th Street SE was removed, effective December 16, 2004.

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, and this project is considered fully-funded at this time for construction by 2009. TIP #E.28.03 programs \$2.2 million dollars for signal and channelization improvements at the intersection of 35th AV SE and Grannis Road, and this project is also considered fully-funded at this time for construction by 2009. The most recent future LOS analysis for this arterial unit, which assumed the completion of these improvements, indicated a future average travel speed of 14.1 miles per hour for the critical time/direction of AM southbound. Because of the continued robust development in the vicinity of this arterial unit, it is highly likely that the projected LOS will again fall below 13 miles per hour and the arterial unit will go back into arrears at some point in the future.

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. Currently a comprehensive improvement at this intersection has been included in the adopted TIP (E.28.04) and is shown as fully funded. The most recent future LOS analysis, assuming these improvements, estimated future LOS at about 15.6 mph. Like other arterial units in this corridor, because of the continued robust development in the vicinity, it is highly likely that the projected LOS will again fall below 13 miles per hour and the arterial unit will go back into arrears at some point in the future.

164th ST SE/SW from I-5 to Mill Creek (#218)

Recent future level-of-service (LOS) analysis developers suggest the possibility that LOS may be failing for this arterial unit. Major improvements in this corridor were completed in 1998. Currently, DPW monitors LOS on this arterial in real time and makes adjustments to signal timing from the traffic operations center as needed to minimize congestion. Also, DPW has submitted an engineer's report and recommendation to the County Council that this arterial unit be designated as ultimate capacity.

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 enough so that this arterial unit could no longer be 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.

Airport Road / 128th ST SW from SR 99 to I-5 (#228)

Like 4th AV W discussed above, recent travel time studies by developers on this arterial unit suggest the possibility that LOS may be failing for this arterial unit, though current construction on the overpass of 112th ST SW across I-5 may be an indirect cause. Major improvements in this corridor were completed in 2001. In recent years DPW has taken measures to improve traffic flow including access restrictions and signal timing coordination. Currently, DPW monitors LOS on this arterial in real time and makes adjustments to signal timing from the traffic operations center as needed to minimize congestion. Also, DPW has submitted an engineer's report and recommendation to the County Council that this arterial unit be designated as ultimate capacity.

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

For this urban arterial unit located in TSA D a 2006 future LOS analysis estimated average travel speed of 14.3 miles per hour in the afternoon peak hour for northbound traffic. 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.

Gibson Road from 128th ST SW to SR 99 (#293)

Recent future level-of-service (LOS) analysis by developers in conjunction with development applications suggest the possibility that LOS may be approaching the adopted standard for this unit in the westbound direction in the AM and PM peak hour because of difficulties of vehicles turning left onto SR-99. DPW will continue to monitor the arterial unit in conjunction with development as it occurs in this corridor. Also, discussions have begun with WSDOT about the possibility of prohibiting left turns from Gibson onto SR 99 and from SR 99 onto Gibson Road (i.e., right in, right out). This may be facilitated by a request by the fire district for this area to signalize the intersection of SR 99 with Manor Way (the next major intersection south of Gibson).

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 AM westbound PM eastbound. Delay occurs at each of the intersections along Larch Way including Poplar Way, 28th AV W and 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 ALOS I improvements have not been identified on the currently adopted six-year TIP.

Lincoln Way from Beverly Park Road to Admiralty Way (#453)

Recent travel time studies on this arterial unit suggest the possibility that LOS may be failing for this arterial unit. DPW will conduct additional travel time studies in 2007.

Meadow Road from 148th ST SW to 164th ST SW (#454)

Recent future level-of-service (LOS) analysis by developers in conjunction with development applications suggest the possibility that LOS may be approaching the adopted standard for this unit in the southbound AM peak hour. DPW will continue to monitor the arterial unit in conjunction with redevelopment as it occurs in this corridor.

Poplar Way from Lynnwood City Limits to Brier City Limits (#278)

Like several other arterial units at risk for concurrency, recent future level-of-service (LOS) analysis by developers suggest the possibility that LOS may be approaching the adopted standard for this arterial unit. A 2006 study estimated a future average travel speed of 15 mph in the westbound PM peak hour. DPW will continue to monitor the arterial unit in conjunction with new development as it occurs in this corridor.

Arterial Units No Longer in Arrears

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

This arterial unit was taken out of arrears on August 16, 2006 based on the major widening on this portion of 20th ST SE and adjacent portions of SR 9 that is fully funded for construction within six years. Analysis in July 2006 showed that with these improvements, and with the addition of all of the trips in the pipeline, that the future average travel speed in the critical westbound morning peak hour would be approximately 20 mph. Analysis in October 2006 showed that the average travel speed would still be more than 15 mph, if an additional 50 peak-hour trips were added to the pipeline in the westbound AM peak hour. As of January 2007 only 20 additional peak-hour trips had been added to the pipeline since July 2006. The County continues to track the new trips in the pipeline and will update the analysis on a regular basis to monitor the gradual decline in average travel speed.

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 TIP. 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 could not be deemed concurrent and improvements to SR 9 were needed to remedy the LOS deficiency.

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 16 years. Among the projects is \$123 million dollars for construction within 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 SR 9 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. In July of 2006 DPW finished the study which determined that these improvements would remedy the LOS deficiency for this arterial unit and the arterial unit was taken out of arrears on August 16, 2006.

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

Two conditions have changed, which have resulted in this arterial unit no longer being in arrears. First, even though portions of it are outside the urban growth area, its level-of-service standard is now LOS E like certain other 'rural' roads similarly assigned the 'urban' LOS standard through the adoption last year of the 2005-2025 Transportation Element. Second, is a change in the limits of this unit. Arterial unit #350 used to be a 'rural' unit extending from the urban growth boundary (around 51st AV SE) to SR 9. Arterial unit #205 was an 'urban' unit extending from 35th AV SE to the urban growth boundary. Once the same LOS E standard applied to both units, then arterial unit #350 was redefined to extend from 35th to SR 9 combining the two arterial units into one. When future travel average travel speed was most recently estimated for the revised arterial unit #350, the estimated speed was 20 mph, and the arterial unit was taken out of arrears.

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

Effective February 5, 2007 arterial unit (AU) 262, 180th St SE between SR 9 and Broadway Ave SE was determined to be no longer in arrears. When it went into arrears in March of 2001, it was designated as a rural arterial and travel time studies had determined that westbound, PM traffic was operating at LOS "F". Furthermore, there were no programmed and funded projects in the county's six-year Transportation Improvement Program (TIP) that would remedy this level-of-service deficiency. Two conditions changed the circumstances for AU 262. First, the 10 Year Comprehensive Plan Update designated that certain rural arterials that carry urban traffic shall have their LOS measured against the urban standard. AU 262 is one of these so designated rural arterials. For urban arterials LOS "E" is tolerated but LOS "F" is not. The threshold between LOS "E" and "F" for this classification of urban arterial is 13 mph. Second, the Washington State Department of Transportation (WSDOT) has a programmed and funded project to widen SR 9 from SR 524 to 176th St SE with a substantial completion date of spring 2013 (within six years). The proposed improvements on SR 9 will include the intersection of SR 9 and 180th St SE. A travel time study conducted for the redefined AU 262 on March 29, 2006, determined the westbound, PM, peak hour traffic speed to be 15 mph. An analysis of AU 262 with pipeline conditions and the WSDOT proposed improvements determined the future operating speed for westbound, PM, peak hour traffic to be 19 mph. Thus, in accordance with DPW Rule 4225.060, a memo dated February 5, 2007 notified the DPW Director that 180th St SE between SR 9 and Broadway Ave SE, AU-262 had been taken out of arrears.

Summary Tables

Table 1: Summary of LOS (LOS) Status

Below is the annual summary of the current and past LOS status of arterial units:

	'00	'01	'02	'03	'04	'05	'06	'07	% of Total ('07)
* LOS above screening level	174	185	225	261	258	255	252	** 250	83%
LOS below screening level	68	60	42	34	37	40	64	53	17%
Total number of arterial units	242	245	267	295	295	295	316	303	100%
Breakout of arterial units below the screening level:									
Monitoring level	31	18	20	10	10	18	25	23	8%
Operational analysis level	29	33	15	17	21	14	30	22	7%
Arterial units in arrears	7	8	6	6	5	7	8	*** 7	2%
Total below screening level	68	60	42	34	37	40	64	53	17%

* See *Review of Concurrency Management System* described above for an explanation of the various 'tiers' of the concurrency management system. In simple terms, arterial units above the screening level are those clearly passing the LOS test. Below the screening level, as congestion increases, the level of analysis typically goes from monitoring to operational analysis which determines if the arterial unit is in arrears.

** Includes one arterial unit at ultimate capacity.

*** One of these arterial units has two numbers (337 and 420) because it is on the border between transportation service areas (TSAs) and thus counts as two arterial units.

Table 2: Summary of Concurrency Determinations

Table 2 shows a summary of the concurrency determinations that were made in 2006. This is up significantly from the concurrency determinations that were made in 2005. 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).

	Transportation Service Areas (TSAs)						Totals by Year		
	A	B	C	D	E	F	2006	2005	2004
Small Residential (less than 7 PHT)	36	42	18	46	10	16	168	93	113
Medium Residential (7 - 50 PHT)	34	39	13	88	16	25	215	120	97
Large Residential (>50 PHT)	10	0	1	17	2	4	34	17	28
Small Non-Residential (less than 5 PHT)	0	0	0	2	1	0	3	7	21
Medium Non-Residential (5 - 50 PHT)	1	0	1	5	5	1	13	11	10
Large Non-Residential (>50 PHT)	1	0	0	5	2	0	8	4	4
Total	82	81	33	163	36	46	441	252	273

Table 3: Concurrency Projects in the 2007-2012 TIP

The Snohomish County Council adopted the TIP for the period 2007-2012, on November 21 2006. 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 2007-2012 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
CF	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
CF	E.28.04	35 AV SE / SEATTLE HILL RD CHANNELIZATION
CU	E.31.02	52 AV W FROM LYNNWOOD CITY LIMITS TO BEV-ED ROAD
CU	E.32.04	51 AV NE AT 136 ST NE INTERSECTION IMPROVEMENT
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	AIRPORT WAY: SR 9 TO BRIDGE #1 MAJOR WIDENING
CU	E.41.01	180 ST SE: 35 AVE SE TO BROADWAY AVE FEASIBILITY STUDY
CU	E.48	88 ST NE: 44 DR NE TO 61 DR NE FEASIBILITY REPORT

**** 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.

Table 4. Arterial Status in 2007 Compared with 2006

Table 4 shows the 2007 status of arterial units and changes between the 2006 report and the 2007 report sorted by TSA and then Road Name. The abbreviations in the table are:

- AUIA** = arterial unit in arrears
- OA** = operational analysis
- S** = screening
- RECON** = reconnaissance
- W / IMPS** = with fully-funded improvements completed or expected to be complete within six years
- M** = monitoring
- TTS** = travel time study
- UC** = ultimate capacity
- FC** = forecast LOS
- ADT** = average daily traffic
- V/C** = LOS estimate based on comparison of volumes and estimated capacity

TSA	RD NAME	FROM	TO	U/R	UNIT	2006	2007	2007 Notes
A	27 AVE NE	MARINE DR NE	END OF CO RD	R	162	M	M	FC LOS B
A	140 ST NE / NW	46 AVE NW	23 AVE NE	R	138	OA	S	EB & WB LOS A
A	MARINE DR	7 DR NW	83 PL NW	R	423	OA	S	RECON PM EB A, WB A

TSA	RD NAME	FROM	TO	U/R	UNIT	2006	2007	2007 Notes
A	MARINE DR	LAKEWOOD RD	STWD C/L	R	118	M	S	RECON PM NB A, SB A
A	MARINE DR NE	I-5 SB ON/OFF RAMPS	MARYSVILLE UGB	R	163	M	M	FC LOS C
A	OLD PACIFIC HWY	STANWOOD C/L	PIONEER HWY	R	101	M	S	RECON PM NB A, SB A
A	PIONEER HWY	300 ST NW	SKAGIT CO/L	R	102	OA	S	RECON PM NBA, SB A
A	SMOKEY PT BLVD	200 ST NE	SR 530	R	357	M	S	RECON PM NB A
A	SMOKEY PT BLVD "Y"	SMOKEY PT BLVD	SR 530	R	371	M	M	RECON PM NB C
B	84 ST NE	SR 9	SR92	R	153	OA	S	RECON PM EB A, WB A
B	20 ST SE	SR 2 WB TRESTLE	SR 9	U	238	AUIA	AUIA	
B	20 ST SE	SR 9	S LK STEVENS RD	U	316	AUIA	OA	
B	79 AVE SE	20 ST SE	8 ST SE	U	385	M	M	
B	91 AVE SE	20 ST SE	SR 204	U	317	M	M	RECON 2007
B	BUNK FOSS RD	SR 9	S.MACHIAS RD	R	256	OA	M	TTS 2007
B	DUBUQUE RD	S. MACHIAS RD	STORM LAKE RD	R	188	S	M	RECON 2007
B	N/S MACHIAS RD	LK STEV UGB	MACHIAS CUTOFF	R	176	OA	S	RECON PM NB A, SB A
B	OK MILL/CRESSWELL	S. MACHIAS RD	DUBUQUE RD	R	181	OA	S	RECON PM EB A, WB A
B	S LK STEVENS RD	20 ST SE	WILLIAMS RD	U	179	M	M	RECON 2007
C	88TH ST SE / 92 ST SE	SR 2 OVERPASS	BRIDGE #633	R	237	OA	M	RECON PM EB B
C	AIRPORT WY	99 AVE SE	SNOHOMISH C/L	U	235	M	OA	TTS 2007
C	AIRPORT WY	SR 9	99 AVE SE	U	353	AUIA	AUIA	
C	BRDWAY AVE	164 ST SE	SR 9	U	261	M	S	RECON PM NB B, SB B
C	MARSH RD	LOWELL LARIMER RD	SR 9	R	198	AUIA	AUIA	
C	OLD OWEN RD	MNR UGB	SULTAN UGB	R	257	M	S	RECON PM EB A, WB A
C	SPRINGHETTI RD	BRDWAY AVE	AIRPORT WY	R	445	M	OA	TTS 2007
C	WOODS CR RD	INGRAHAM RD	SLAKE ROESIGER	R	348	M	S	RECON PM NB A, SB A
D	36 / 35 AVE W	164 ST SW	SR99	U	415	OA	OA	RECON 2007 AM
D	36 AVE W	LYNN C/L	164 ST SW	U	287	OA	M	RECON PM NB D, SB B
D	100 ST SE	EVT C/L	35 AVE SE	U	200	M	M	RECON PM EB D, WB C
D	132 ST SE / 134 PL SE	SR 96	SNOH. CASC. DR	U	259	M	M	RECON 2007 WB AM
D	148 ST SW /MAD. WY	SR99	ASH WY	U	225	OA	OA	RECON 2007
D	164 ST SW / SE	I-5 NB RAMPS	MILL CR C/L	U	218	S	OA	TTS 2007
D	180 ST SE	SR 527	35 AVE SE	U	206	OA	M	TTS LOS C
D	35 AV SE	SR 96	100 ST SE	U	201	OA	S	RECON PM NB B, SB C
D	35 AVE SE	168 ST SE	SEATTLE HILL RD	U	204	AUIA	AUIA	TTS 2007
D	35 AVE SE	SEATTLE HILL RD	144 ST SE	U	203	OA	OA	FC LOS E
D	4 AVE W	112 ST SW	EVERETT C/L	U	352	OA	OA	TTS 2007
D	4 AVE W	128 ST SW	112 ST SW	U	229	OA	OA	FC LOS E
D	52 AVE W	LYNNWOOD C/L	148 ST SW	U	222	OA	OA	RECON 2007
D	52 AVE W	148 ST SW	MUKILTEO C/L	U	223	OA	OA	RECON 2007
D	AIRPORT/128 ST SW	SR 99	I-5 (SB RAMPS)	U	228	OA	OA	TTS 2007
D	ALD. MALL PARKWAY	164 ST SW	LYNNWOOD C/L	U	220	OA	OA	FC LOS E
D	BEVERLY PARK RD	SR 525	AIRPORT RD (EVT)	U	227	OA	M	FC LOS D

TSA	RD NAME	FROM	TO	U/R	UNIT	2006	2007	2007 Notes
D	GIBSON RD	SR99	128 ST SW	U	293	OA	OA	RECON PM EB D, WB D
D	LINCOLN WY	BEVERLY PARK RD	ADMIRALTY WY	U	453	S	OA	RECON 2007
D	MEADOW RD	164 ST SW	148 ST SW	U	454	S	OA	FC LOS E
D	MERIDIAN AVE S	MEADOW PL SW	SR96	U	298	S	OA	FC LOS E
D	SEATTLE HILL RD	35 AVE SE	SR 96	U	202	AUIA	AUIA	TTS 2007
D/E	35 AVE SE	GRANNIS RD	168 ST SE	U	336/207	OA	OA	FC LOS E
E	180 ST SE	35 AVE SE	SR 9	U	350	AUIA	M	FC LOS D
E	180 ST SE	SR 9	BRDWAY AVE	U	262	AUIA	M	
E	ECHO LK RD	SR 522	LOST LAKE RD	R	266	M	M(V/C)	2007 RECON
E	FALES / ELLIOTT RD	SR 522	BRDWAY AVE	R	265	M	M(V/C)	2007 REON
E	PARADISE LAKE RD	SR-522	KING CO/L	R	354	M	M(V/C)	2007 RECON
E	SNO WOODINVILLE RD	KING CO LINE	SR 522	U	211	UC	UC	
E	SUNSET RD	180 ST SE	TSA BOUNDARY	U	397	M	M	2007 RECON AM
E/F	39 AVE SE	228 ST SE	SR 524	U	209/332	OA	M	FC LOS C
E/F	YORK RD/35 AVE SE	SR 524	GRANNIS RD	U	420/337	OA	AUIA	FC LOS F
F	204 ST SW	LYNN C/L	28 AVE W	U	215	M	OA	TTS LOS E
F	228 ST SE	35 AVE SE / BTHL C/L	39 AVE SE	U	333	M	M(V/C)	RECON 2007
F	228 ST SW	LOCUST WY	BTHL C/L	U	212	OA	OA	RECON 2007 AM
F	LARCH WAY	MLT C/L	CYPRESS WY	U	214	OA	OA	TTS 2007
F	LOCUST WY	KING CO LINE	228 ST SW	U	274	M	S	RECON LOS B
F	LOGAN RD / LARCH WY	CYPRESS WY (N-LEG)	DAMSON RD	U	276	M	M	RECON LOS C
F	POPLAR WY	LYNNWOOD C/L	BRIER C/L	U	278	M	OA	TTS 2007