

Overview of Snohomish County 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.
- If ADT on an arterial unit does not exceed the predefined threshold, then the arterial unit meets the county's adopted LOS threshold, solely on this basis. In these cases, average travel speed is not even evaluated. For example, on a 'low-volume road', travel speed will not be evaluated until the ADT threshold is exceeded. With a road designated as ultimate capacity, the same thing applies, though the volumes are very high instead of very low. Thus, there is the potential, in some cases, for a road that passes the ADT test to have average travel speeds lower than would be tolerated if the road did not. This was an intentional decision by the elected officials, designed to focus the County's resources on roads with moderate volumes and not already improved to ultimate standards.
- 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.

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.

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)

Each year in late fall the Snohomish County Council adopts a transportation improvement program (TIP) for the next six year period. 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 in the annual concurrency report lists these so-called "concurrency projects".

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 in the Concurrency Report lists the projects in the current Six-Year Network.