

## Introduction

**Level of service (LOS)** is a general term referring to one or more metrics jurisdictions and agencies use to assess the performance of transportation systems. Historically, LOS and the development of **LOS standards** have focused on roads and vehicles. Common, traditional LOS measurement methods include:

- **Volume over Capacity (V/C):** The number of vehicles using a road in a set time frame divided by the number of vehicles that the road was designed to accommodate in that time frame.
- **Travel Speed:** Various measures of vehicles' speed relative to the posted speed limit.
- **Duration of congestion:** Amount of time that vehicles on a roadway are traveling at speeds below the posted speed limit (e.g., <85% posted speed, 84-70% posted speed, <70% posted speed).

Many jurisdictions around the country have adopted **multimodal LOS** measures that:

- Include traditional measures of road capacity for vehicles,
- Additionally include (and usually emphasize) *trip* capacity provided by all types of transportation (roads, vehicles, transit, bike facilities, sidewalks, trails, etc.), serving a corridor.

## The Whatcom Region's LOS Standard

### RTPO Planning Requirements & Duties

Washington state law ([RCW 47.80.030](#)) requires RTPOs (such as WCOG) to develop and establish LOS standards for the **regionally significant state routes** within their planning area (Map 1 below).

- Regionally significant state routes are those state routes not otherwise designated by the legislature as Highways of Statewide Significance (HSS).
- RTPOs are to develop the LOS standards jointly with the Washington State Department of Transportation (WSDOT).
- These LOS standards are to be included in RTPOs' long range transportation plans to encourage consistency across jurisdictions.

[RCW 47.80.023](#) assigns additional LOS-related duties to RTPOs including:

- "Review level of service methodologies used by cities and counties planning under chapter 36.70A RCW to promote a consistent regional evaluation of transportation facilities and corridors."
- "Work with cities, counties, transit agencies, the department of transportation, and others to develop level of service standards or alternative transportation performance measures."

### WCOG's Current LOS Standards for Regionally Significant State Routes

Map 1, below, shows the Regionally Significant State Routes as well as the state routes that have been designated HSS. WSDOT is the lead on developing LOS standards for HSS routes.

Currently, LOS for regionally significant state routes (non-HSS) in Whatcom County is based on a **peak-hour, volume-over-capacity (V/C) methodology**. The count of vehicles on a road segment during the busiest hour of the day (volume) is divided by the number of vehicles that the road is designed to accommodate in one hour (capacity) For example, if 800 cars are counted on a road segment that was designed to accommodate 1,000 cars per hour,  $V/C = 800/1,000 = .80$ . To describe and establish an LOS standard based on this method, the range of measures are grouped and assigned letter-grades as shown in Table 1 at right.

**Table 1:** LOS Grades Used in Current WCOG LOS Standard.

LOS Designation	V/C Range
A	0 - .59
B	.6 - .69
C	.7 - .79
D	.8 - .89
E	.9 - 1
F	> 1

Map 2, below, shows the LOS standard established for the regionally significant state routes in Whatcom County: **LOS C if the route is in a rural area and LOS D if the route is in an urbanized area.**

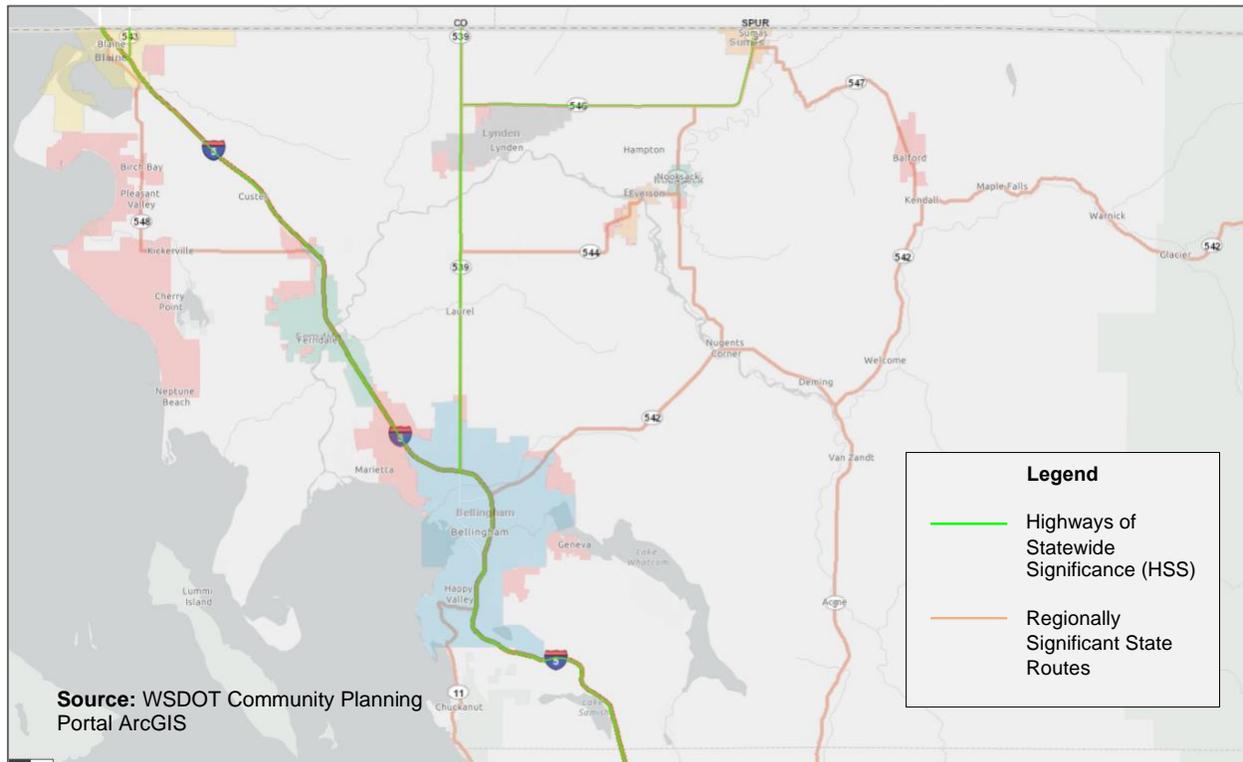
# Level of Service (LOS) Standards for Regionally Significant State Routes

## Appendix to *Way to Go, Whatcom*

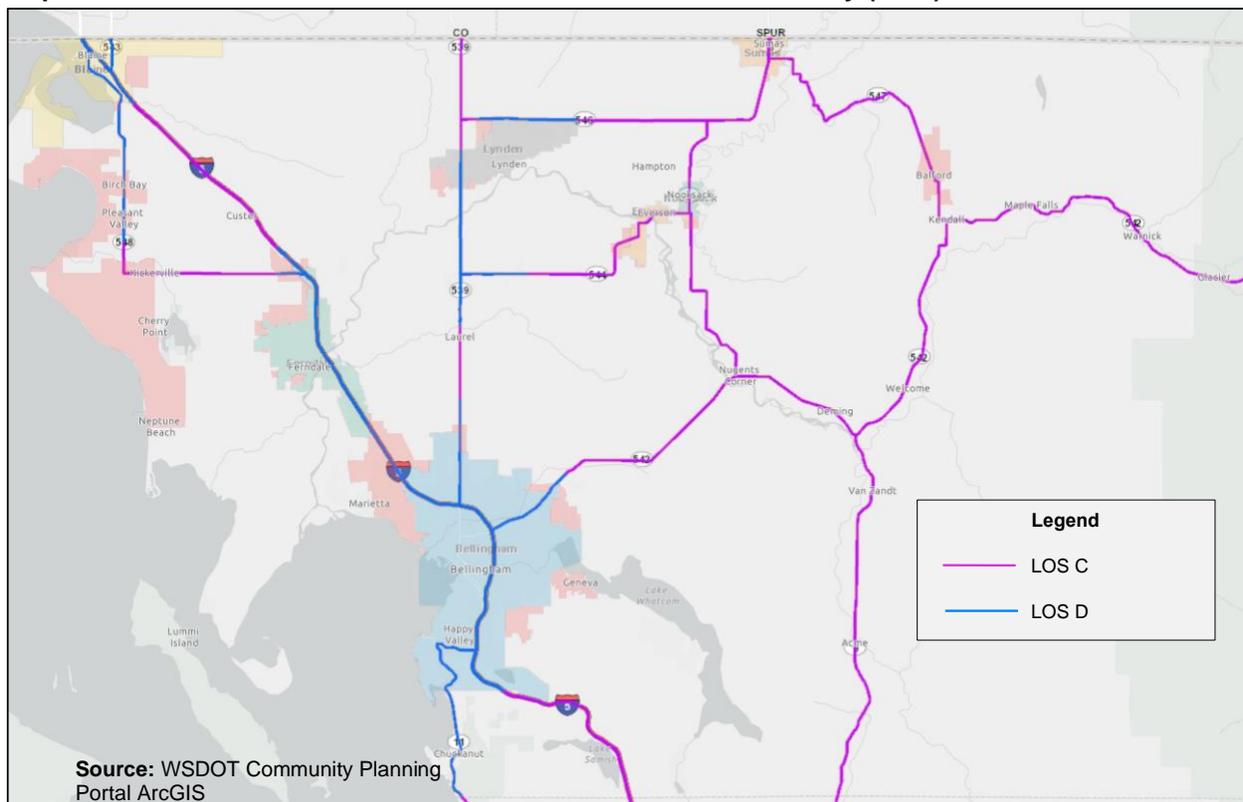


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**Map 1: State Routes in Whatcom County – HSS & Non-HSS (Regionally Significant State Routes)**



**Map 2: Current LOS Standards for State Routes in Whatcom County (2021)**



## Who Uses LOS and for What?

### WCOG

As discussed above, state law requires WCOG as an RTPO, to lead the development and adoption of LOS standards (with WSDOT) for our region’s non-HSS state routes and for documenting the establishment of these non-HSS LOS standards in its R/MTP. These actions are required for the purpose of “encouraging consistency across jurisdictions.” As will be discussed more below, it is important to point out here that **RTPOs (like WCOG) do not set LOS for the purpose of establishing concurrency requirements under Washington’s Growth Management Act (GMA).**

In addition to being a reference point for promotion of “regional consistency,” the WCOG’s uses of the adopted LOS standard are limited.

- The LOS standards set by WCOG with WSDOT only apply to a subset (non-HSS routes) of our region’s state routes (Map 1 above) – a small portion of the road miles considered part of the regional system.
- WCOG uses basic LOS measures (as defined in the Highway Capacity Manual) to summarize and visualize travel demand model outputs – current and forecast build/no-build conditions presented in the regional/metropolitan transportation plan.
- Like most agencies engaged in regional and state transportation planning, WCOG is currently using additional and more comprehensive measures and metrics to monitor transportation system performance – safety, highway (travel time reliability, freight), pavement & bridge, transit, and active transportation. Many of these measures are required under federal legislation (MAP-21 passed in 2012). Application of these measures and metrics in regional and state planning is referred to as [performance-based planning and programming \(PBPP\)](#) and has arguably superseded the 1990s-era primacy of LOS. WCOG’s implementation of PBPP is presented in its periodically updated system performance report.

### Whatcom Region Local Jurisdictions

Washington’s GMA requires local jurisdictions (who plan under GMA) to do the following.

- Establish LOS standards for the arterials and transit routes that they own (not state routes),
- Counties must include the RTPO/WSDOT established LOS standards for state routes (HSS and Non-HSS) in the transportation elements of their comprehensive plans.
- Based on their local LOS standards, cities and counties must adopt and enforce ordinances to comply with GMA’s concurrency requirements (“prohibit development approval if the development causes the LOS on a locally owned transportation facility to decline below the standards adopted in the transportation element of their comprehensive plan, unless transportation improvements or strategies to accommodate the impacts of development are made concurrent with the development”).

### WSDOT, State Routes, and Local Jurisdictions (Gray Areas)

#### WSDOT

As mentioned above, state law directs WSDOT to:

- Be the lead in setting LOS standards for state highways of *statewide significance* (HSS) in consultation with the local jurisdictions the routes are in (see Map 1 above),
- Work with RTPOs who are given the lead in setting LOS standards for non-HSS state routes (highways of regional significance).

# Level of Service (LOS) Standards for Regionally Significant State Routes

## Appendix to *Way to Go, Whatcom*



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Washington's GMA is clear that concurrency requirements do not apply to HSS routes. But the GMA does not discuss (and thus leaves as an open question) whether the state can or should or should not apply GMA-based concurrency policies to non-HSS state routes. (GMA's lack of guidance on concurrency with respect to non-HSS routes leaves the same question for local jurisdictions and this is discussed below.) While WSDOT does monitor development and require developers to fund mitigations – directly as part of access management and/or indirectly through the State Environmental Policy Act (SEPA) – **WSDOT does not currently apply a GMA-based concurrency policy on non-HSS routes.**

Irrespective of GMA, when a local jurisdiction becomes aware of a development application that would likely impact a state route, it informs WSDOT. WSDOT will decide whether to request analysis, be included as an interested party under SEPA, and possibly request mitigation via the local jurisdiction's administration of the SEPA process. If the developer's impact is directly on the state-owned highway (e.g., a new access point), WSDOT will define developer requirements directly.

### Local Jurisdictions

As briefly noted above, the GMA is silent on whether a local jurisdiction can or should or should not extend and apply their GMA concurrency ordinances to non-HSS state routes. Practices vary.

If local jurisdictions choose to apply their concurrency ordinances to non-HSS routes, the LOS standard set by the RTPO (with WSDOT) is not legislatively connected to concurrency regulation. A jurisdiction could choose to reference the RTPO-established LOS standard (and this would align with the expectation of consistency) but the GMA's silence on these issues leaves local jurisdictions with some gray areas to navigate. And, if the anticipated impact to a non-HSS route is significant, WSDOT would also be involved and overall requirements for development would extend beyond GMA concurrency into the significantly longer list of SEPA threshold determinations (traffic volume, LOS, safety, transit, channelization, active transportation, etc.).

## Looking ahead – LOS and Overall System Performance

As part of its continuing planning process and work program, WCOG will:

- Use the adopted regional LOS standard as part of its modeling, system assessments, and long-range plan documentation.
- With WSDOT, monitor and review the need to *adjust* the current, regional LOS for regionally significant state routes (non-HSS). (Adjustments being changes to the standard using the current LOS measure of peak-hour VoC on a road segment)
- Discuss over the next two years (2022-2024) regional interest and state and national trends towards developing and adopting a regional, **multimodal level of service standard**.
- Encourage regional evaluation of local jurisdictions' and WSDOT's adopted LOS standards to encourage maximized consistency.
  - Consistency of LOS standards across jurisdictions.
  - Consistency with regional transportation system goals. Local, regional, and state transportation plans document goals of providing an integrated, multimodal system. Updating LOS standards to account for and promote using all types of transportation would align with adopted goals.
  - Consistency with emerging state policy. As part of its current work to update the state Highway System Plan, WSDOT is reviewing approaches to adopting a multimodal LOS for HSS state routes. A regional discussion of updating LOS standards is timely and can hopefully be complemented by the discussions and decisions at the state-wide level.
- Pursue all the above in the context of contemporary shifts towards comprehensive performance-based planning and programming (PBPP) and highlight questions for decisions makers such as:
  - At the state level, should LOS be more-clearly incorporated into a holistic PBPP framework?
  - Should state law be clarified regarding concurrency and non-HSS routes?