

## **CITY COUNCIL AGENDA ITEM**

### **CITY OF SHORELINE, WASHINGTON**

<b>AGENDA TITLE:</b>	Discussion of the TMP Update: Draft Auto Level of Service Approach		
<b>DEPARTMENT:</b>	Public Works		
<b>PRESENTED BY:</b>	Nora Daley-Peng, Senior Transportation Planner Kendra Dedinsky, City Traffic Engineer		
<b>ACTION:</b>	<input type="checkbox"/> Ordinance	<input type="checkbox"/> Resolution	<input type="checkbox"/> Motion
	<input checked="" type="checkbox"/> Discussion	<input type="checkbox"/> Public Hearing	

#### **PROBLEM/ISSUE STATEMENT:**

The City's Transportation Master Plan (TMP) is the long-range blueprint for multimodal travel and mobility within Shoreline. The last update to the TMP was in 2011. The TMP, which serves as the supporting analysis for the City's Comprehensive Plan Transportation Element, must be updated by 2024 to align with the City's Comprehensive Plan periodic update, meet the Growth Management Act requirements, maintain the City's eligibility for pursuing future grant funding, and set transportation policies for guiding development in Shoreline.

Tonight, staff will provide the Council with a briefing on auto level of service (LOS) policies options, as part of the TMP update. These LOS policies directly influence how the City will grow as well as how it conducts development reviews and transportation concurrency assessments. In addition, these auto LOS policies guide the development of the TMP update project list and Transportation Impact Fee (TIF) program.

#### **RESOURCE/FINANCIAL IMPACT:**

There is no additional financial impact associated with the continued work on this project.

#### **RECOMMENDATION**

There is no action required tonight; this meeting will provide a briefing on draft LOS policies options as part of the TMP update. Staff is seeking Council's input on the recommended draft preferred auto LOS policy.

Approved By:            City Manager **DT**    City Attorney **MK**

## **INTRODUCTION**

The City is currently updating its Transportation Master Plan (TMP) to better serve the community's current and future transportation needs. The TMP supports all forms of travel – by foot, bicycle, skateboard, scooter, stroller, wheelchair, transit, motorcycle, automobile, etc. With the coming arrival of light rail transit, new and higher frequency bus service, new pedestrian/bicycle connections, and land use changes and growth, the TMP update provides an opportunity to better align transportation goals, objectives, and policies with the City's Comprehensive Plan.

The TMP update will provide a framework to guide investments in existing and new transportation infrastructure and programs over the next 20 years in accordance with the community's transportation priorities. The TMP update will be developed through close collaboration between City staff, stakeholders, and the public, as well as the Planning Commission and Council, to help improve mobility and quality of life.

## **BACKGROUND**

In fall 2020, the City launched a multi-year process to update the TMP with the goal of adoption by the end of 2022. On October 26, 2020, Council discussed and approved authorization to execute a consultant contract to support the TMP update. The staff report for that discussion can be found at the following link: [Authorizing the City Manager to Execute a Professional Services Contract with Fehr & Peers in the Amount of \\$548,651 for the Transportation Master Plan Update](#).

On May 24, 2021, Council discussed and agreed with the vision and goals for the TMP update. The staff report for that discussion can be found at the following link: [Discussion of the Transportation Master Plan Update](#).

On November 22, 2021, Council discussed and agreed with the project evaluation framework for the TMP update. The staff report for that discussion can be found at the following link: [Discussion of the Transportation Master Plan Update](#).

The following overview schedule shows key milestones for the TMP update process.



To date, the project team has assessed existing conditions, conducted two rounds of public outreach, developed the TMP Vision, Goals, and Project Evaluation Framework. The team is now working on multimodal LOS policies, draft modal plans, a process for prioritizing projects, and is preparing to launch Outreach Series 3 in April.

Tonight, Council will receive an overview of auto level of service (LOS) policy options that define the adequacy of general-purpose vehicle capacity and flow on City arterials as part of TMP update. A presentation and discussion on multi-modal LOS in the TMP update will be held April 2022. These LOS policies directly influence how the City will grow as well as how it conducts development reviews and transportation concurrency assessments. In addition, LOS policies guide the development of the TMP update project list and Transportation Impact Fee (TIF) program.

## **DISCUSSION**

Tonight, staff will provide an overview of auto LOS policies options, as part of the TMP update.

### **Measuring Vehicle Operations**

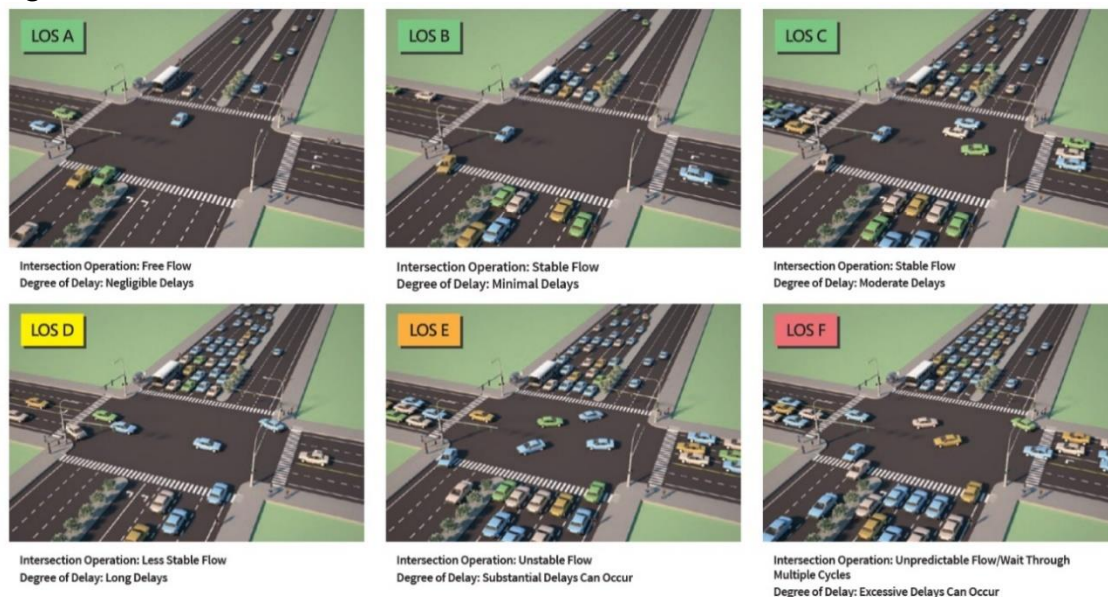
Jurisdictions in Washington have significant flexibility in choosing level of service standards appropriate for their cities. Shoreline currently uses two standards: an intersection LOS standard that is supplemented with a roadway volume to capacity (V/C) ratio standard.

### **Shoreline's Current Intersection LOS Policy**

The operational performance of intersections within Shoreline is measured using a standard methodology known as level of service (LOS). LOS represents the degree of congestion at an intersection based on a calculation of average delay per vehicle at a controlled intersection, such as a traffic signal or stop sign.

Individual LOS grades are assigned on a letter scale, A-F, with LOS A representing free-flow conditions with no delay and LOS F representing highly congested conditions with long delays, as illustrated below in **Figure 1**. LOS assessments are conducted specifically for the peak hour of traffic volumes, which usually occurs between 4:00-6:00 p.m. As such, the LOS assessment represents the worst-case scenario, whereas the intersection likely performs with significantly lower delays most of the day.

**Figure 1: Intersection Level of Service**



**Table 1** includes the definition of each intersection LOS grade from the 6th Edition Highway Capacity Manual (HCM) methodology, which is based on the average control delay per vehicle. Signalized intersections have higher delay thresholds compared with two-way and all-way stop-controlled intersections. HCM methodologies prescribe how delay is measured at different types of intersections. For signalized and all-way stop intersections, LOS grades are based on the average delay for all vehicles entering the intersection. For two-way stop-controlled intersections, the delay from the most congested movement is used to calculate LOS.

**Table 1: Intersection Level of Service Criteria Based on Delay**

Level of Service	Signalized Intersections (seconds per vehicle)	Stop-Controlled Intersections (seconds per vehicle)
<b>A</b>	<= 10	<= 10
<b>B</b>	10 to 20	10 to 15
<b>C</b>	20 to 35	15 to 25
<b>D</b>	35 to 55	25 to 35
<b>E</b>	55 to 80	35 to 50
<b>F</b>	> 80	> 50

Source: 6th Edition Highway Capacity Manual

It is worth noting that while LOS A represents the lowest traffic delay, it is not necessarily the ideal standard to strive for as it is largely unattainable in more urban environments and significantly limits desired redevelopment. While little to no delay might be convenient for drivers, it may also indicate that resources and space dedicated to streets could be better used for other purposes, such as sidewalks, bike lanes, greenery, on-street parking, or other urban amenities.

The City's current LOS policy requires LOS D at signalized intersections on arterials and most unsignalized intersecting arterials.

### **Shoreline's Current Roadway Volume-to-Capacity (V/C) Ratio Policy**

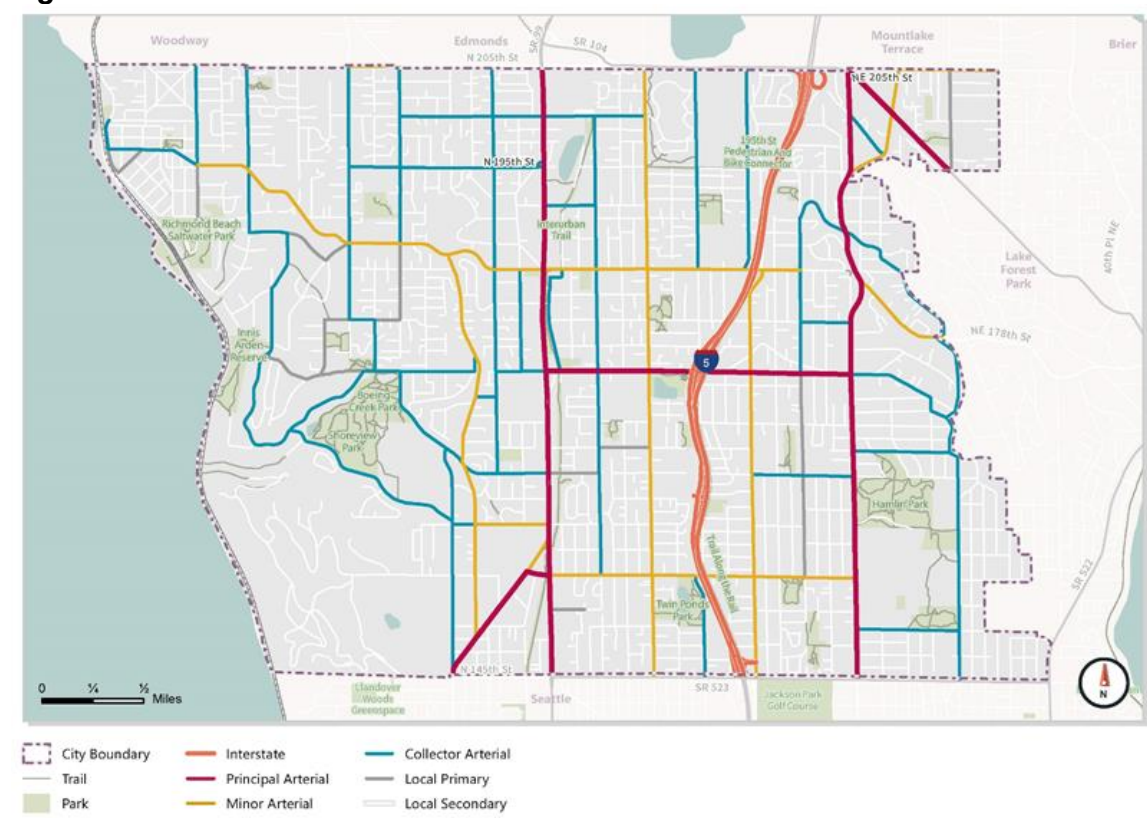
In addition to the intersection LOS, Shoreline currently uses a standard that evaluates the highest peak hour traffic volume divided by the assumed hourly volume capacity of the roadway. This is referred to as a volume to capacity (V/C) ratio. The City currently applies a documented V/C Ratio standard of 0.90 or lower for principal/minor arterials.

**Figure 2** shows the functional classification of Shoreline's streets.

The following two roadway segments are exempted from this standard:

- Dayton Avenue N from N 175th Street to N 180th Street
- 15th Avenue NE from NE 150th Street to NE 175th Street

**Figure 2: Shoreline's Street Functional Classification**



## **ANALYSIS – OPTIONS CONSIDERED**

### **Options for Updating Intersection LOS Policy**

The project team considered three potential options for intersection level of service (see **Table 2**). Options include staying with the status quo and making modifications that would provide more flexibility and nuance to ensure that roadway conditions are still comfortable for people walking, bicycling, riding transit, and other non-auto modes.

**Table 2: Options for Updating Intersection LOS**

<b>1. No Change</b>	<b>2. District Approach</b>	<b>3. District Approach + Corridor Averaging</b>
<ul style="list-style-type: none"> <li>LOS D at intersections.</li> </ul>	<ul style="list-style-type: none"> <li>LOS D at intersections in residential settings.</li> <li>LOS E at intersections adjacent to higher land uses.</li> </ul>	<ul style="list-style-type: none"> <li>Instead of applying LOS D or E to individual intersections, group multiple intersections along a corridor and use the average delay of the group.</li> <li>Average LOS D in residential settings.</li> <li>Average LOS E at intersections adjacent to higher land uses.</li> </ul>

1. No Change	2. District Approach	3. District Approach + Corridor Averaging
<ul style="list-style-type: none"> <li>• Most conservative – results in requiring the most mitigation/growth projects.</li> <li>• Concern that TIF would be too high, discouraging redevelopment.</li> <li>• Concern that it could result in much larger and costly intersection improvements with greater impacts than Option 2 (District Approach) and Option 3 (District Approach + Corridor Averaging) to pedestrian comfort and safety, as well as the natural environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Allows for a more context sensitive approach and better balance to modal priorities in denser areas.</li> <li>• Results in fewer mitigation/growth projects compared to Option 1 “No Change” but slightly more compared to Option 3 “District Approach + Corridor Averaging”.</li> <li>• Relatively simple to administer.</li> <li>• Travel time and delay will be greater than Option 1 along corridors adjacent to higher land use.</li> </ul>	<ul style="list-style-type: none"> <li>• Even greater flexibility resulting in even fewer mitigation/growth projects than Option 2 “District Approach”</li> <li>• Challenging to determine how to group intersections without seeming arbitrary.</li> <li>• More difficult to administer than Option 1 or 2.</li> <li>• Travel time and delay will be greater than Option 1 or Option 2 along corridor adjacent to higher land use.</li> </ul>

### **Options for Updating V/C Ratio Supplemental LOS Standard**

The project team discussed two main options for the segment V/C ratio supplemental LOS standard (see **Table 3**); whether the City should continue using the segment V/C ratios as a supplemental measure or remove the supplemental measures altogether.

***Table 3: Options for Updating V/C Supplemental LOS Standard***

1. Keep it the same (0.9 V/C)	2. District	3. Remove V/C
<ul style="list-style-type: none"> <li>• Apply a 0.9 V/C ratio to all principal and minor arterials within the City.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply 0.9 V/C ratio to 0.90 to principal/minor arterials within low density land use areas.</li> <li>• Apply 1.1 V/C ratio to principal/minor arterials within high density land use areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove V/C standard throughout the entire City.</li> </ul>



1. Keep it the same (0.9 V/C)	2. District	3. Remove V/C
<ul style="list-style-type: none"> <li>Retaining the 0.9 VC on some corridors in the City is likely infeasible as it would require a large investment including significant property acquisition to meet this LOS.</li> <li>In conflict with modal priorities in City's denser areas, as mitigating to meet standards would mean wider, less pedestrian-friendly corridors.</li> <li>Difficult to administer from a development review perspective, as there is no accepted industry standard for how capacity is calculated.</li> </ul>	<ul style="list-style-type: none"> <li>Encourages growth in target areas/discourages growth in areas of the City that lack robust supportive transportation infrastructure.</li> <li>Context sensitive.</li> <li>Balance modal priorities in growth centers.</li> <li>Consistent with intersection LOS.</li> </ul>	<ul style="list-style-type: none"> <li>Removing the 0.9 V/C standard eliminates the issues described in Option 1 and allows for simplicity in reviewing for concurrency.</li> <li>However, removing the standard weakens the City's ability to discourage significant growth in areas that lack robust supportive land uses and transportation choices as alternatives to auto-dependency.</li> </ul>

### **DRAFT PREFERRED OPTION**

In working through potential refinements to best align the City's transportation standards with the Shoreline Comprehensive Plan and TMP Vision and Goals, the team developed the following proposed staff recommendation.

#### **Intersection LOS**

The project team recommends Intersection LOS Option 2 (See **Table 2**) with some refinements. After thinking through how to apply a context sensitive standard, staff looked at applying a district approach to intersections within the City's Candidate Countywide Centers<sup>1</sup> (listed below). This approach would align areas where the City could accept higher levels of delay with where the City expects and wants to encourage growth.

- 148th Street Station Area
- 185th Street Station Area
- Shoreline Place

<sup>1</sup> Countywide growth centers serve important roles as places for equitably concentrating jobs, housing, shopping, and recreational opportunities. These are often smaller downtowns, high-capacity transit station areas, or neighborhood centers that are linked by transit, provide a mix of housing and services, and serve as focal points for local and county investment. On December 1, 2021, the Growth Management Planning Council (GMPC) approved the City of Shoreline's 148th St. Station Area, 185th St. Station Area, Shoreline Place, and Shoreline Town Center as candidate countywide centers. Jurisdictions with Candidate Countywide Centers are expected to fully plan for their centers as a part of the 2024 comprehensive plan periodic update or in parallel local planning efforts.

- Town Center

By focusing on flexibility in the City's Countywide Centers (Centers), as opposed to allowing more delay at every location with non-residential land use, the City could uphold what is likely a more appropriate delay standard in locations with less supportive transportation infrastructure (e.g., small pockets of commercial land use) while further incentivizing growth in these Centers where more trips by foot, bike, and transit are expected and therefore, better balancing modal priorities based on City context.

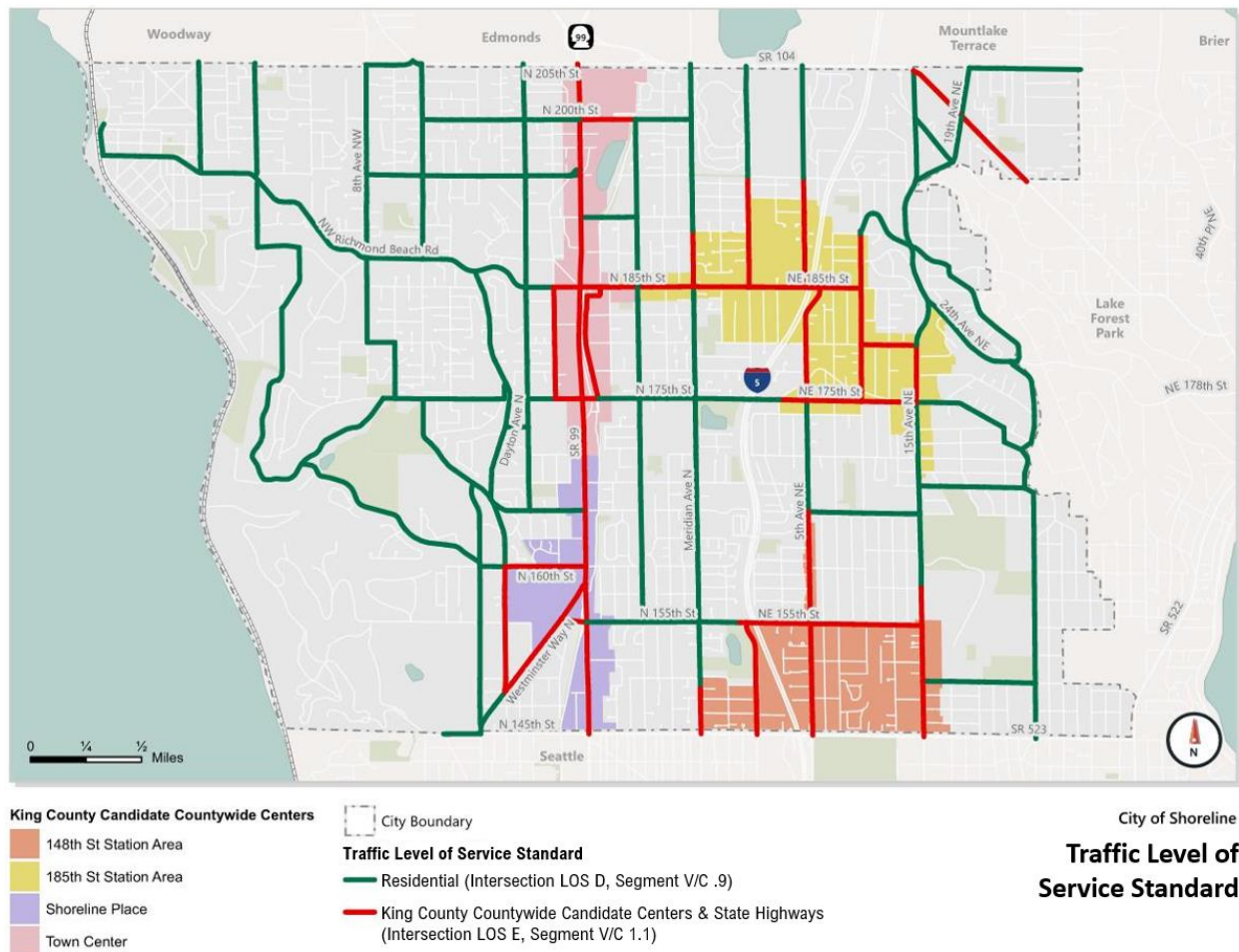
### **Segment LOS – V/C Ratio**

By refining the intersection LOS as described above, the City can consistently tie the roadway segment V/C Option 2 to it (See **Table 3**). Staff proposes a V/C of 1.1 within Centers and 0.9 elsewhere. Accepting a certain level of future congestion for general-purpose traffic in the Centers will complement the Center's planned dense and diverse land uses within a network of walkable, bikeable, transit-supportive streets. This again reinforces the City's goal of growth in these Centers, while providing a measure of protection in areas of the City that may be less walkable, with less robust transit, and with less supportive land uses. In addition, this option provides for consistency and simplicity in application between intersection and segment standards.

**Figure 3** is a draft of staff's recommended draft intersection and segment preferred LOS policy.

***Figure 3: Draft Intersection and Segment LOS Preferred Option***





## **NEXT STEPS**

Over the winter 2022, the project team will develop a draft layered transportation network of modal plans for pedestrian, bicycle, transit, shared-use mobility, and auto/freight modes.

Staff will return to Council in late March with a process for prioritizing TMP projects and an overview of activities and events for Outreach Series 3. In addition, staff will return to Council in early April to discuss the TMP's draft modal plans for transit, pedestrian, bicycle, and shared-use mobility.

The project team plans to conduct Outreach Series 3 in April 2022 to share the results of Outreach Series 2, get feedback on draft modal plans, and draft project prioritization process.

## **COUNCIL GOAL(S) ADDRESSED**

The TMP update supports all five of the 2021-2023 City Council Goals and directly supports the following City Council Goals:

- *Goal 2: Continue to deliver highly-valued public services through the management of the City's infrastructure and stewardship of the natural environment.*
- *Goal 3: Continue preparation for regional mass transit in Shoreline.*

### **RESOURCE/FINANCIAL IMPACT**

There is no additional financial impact associated with the continued work on this project.

### **RECOMMENDATION**

There is no action required tonight; this meeting will provide a briefing on draft LOS policies options as part of the TMP update. Staff is seeking Council's input on the recommended draft preferred auto LOS policy.