

**THE POSSIBILITIES OF TRANSPORTATION CONCURRENCY
PROPOSAL AND EVALUATION OF MEASUREMENT ALTERNATIVES**

by

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The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the cities of Bellevue, Kirkland, Issaquah, or Redmond, the Washington State Department of Transportation, the Washington State Legislature, or the Washington State Transportation Commission. This report does not constitute a standard, specification, or regulation.

EXECUTIVE SUMMARY

STUDY PURPOSE

The cities of Bellevue, Kirkland, Issaquah, and Redmond, commenced a two-year cooperative study in fall 2001 to

- describe and assess the four cities' existing approaches to transportation concurrency
- develop and analyze alternative approaches that are more multi-modal in nature
- evaluate alternative approaches with a focus on assisting the four cities in reaching the objectives of the Growth Management Act and the region's Vision 2020 plan
- recommend changes, if necessary, to state and local laws to improve the effectiveness of transportation concurrency.

This report was prepared by an interdisciplinary University of Washington team led by the Washington State Transportation Center with the Evans School of Public Affairs, the School of Urban Design and Planning, and the consulting firm Kittleson and Associates. The report's findings and recommendations are not those of city elected officials or staff and have not been endorsed by them.

TRANSPORTATION CONCURRENCY

Washington State's Growth Management Act (GMA) requires that jurisdictions' infrastructure keep pace with development. This *concurrency* requirement applies to all aspects of a local government's infrastructure, including roadways, sewers, and water. However, the Act only requires jurisdictions to adopt ordinances that establish a concurrency *measurement* system for transportation. As a result, the ability of the transportation system to support new development has become the primary test for whether development and infrastructure are "concurrent."

The GMA directs jurisdictions to establish level of service (LOS) standards for their transportation systems. The transportation LOS standards serve as a baseline for determining whether current transportation facilities can accommodate new development. If the new development will cause the transportation system to exceed the pre-determined LOS standards, the jurisdiction *must deny the development* unless transportation improvements and strategies are made to accommodate the development within six years, a process known as *concurrency mitigation*.

Jurisdictions have great flexibility in designing concurrency mitigation efforts. "Transportation improvements and strategies" are broadly defined in the statute to include, among other things, "public transportation service, ride sharing programs, demand management, and other transportation systems management strategies."

THE EXISTING TRANSPORTATION CONCURRENCY SYSTEM

All four Eastside cities measure level of service (and thus concurrency) on the basis of a comparison of vehicle use to roadway capacity. This comparison is usually referred to as the “volume/capacity” ratio (v/c). The “volume” side of the ratio is determined by the number of vehicles that use the roadway during the busiest hour(s) of the day. The “capacity” portion of the ratio is determined by “roadway geometry,” essentially the number of lanes, their design, and the roadway’s operational strategy (e.g., signal timing). A v/c ratio below 1.0 means that the roadway’s use is lower than its calculated capacity. A ratio of 1.0 suggests the roadway is at capacity. A ratio that is greater than 1.0 indicates significant congestion.

Each city’s comprehensive plan uses the v/c ratio to determine LOS standards, although the computational methods used to calculate v/c and the actual LOS standards selected in each Eastside city vary. The standards establish the highest v/c ratio that will be permitted for a given roadway, intersection, or set of roadway locations at the times of day when congestion is most likely. Bellevue, Redmond, and Kirkland’s LOS standards vary by geographic location, requiring better LOS in some zones (usually residential areas) and permitting more congestion in other zones (generally commercial areas). Issaquah’s LOS standards vary by arterial street classification rather than by zone.

The cities regularly measure roadway LOS to determine whether performance standards are being maintained. As of the last LOS report, Issaquah is out of compliance with concurrency requirements. In Redmond, two of seven zones are out of compliance. Bellevue is in compliance, but further development likely will raise compliance issues. Kirkland is in compliance and does not face any immediate compliance problems. The current economic downturn has eased Redmond and Bellevue’s concurrency pressures, but these pressures are likely to increase once the economy picks up.

LIMITATIONS AND CONSTRAINTS

Limitations of the existing transportation concurrency approaches can hinder the cities in realizing the futures articulated in their comprehensive plans. These limitations include the following:

- Current v/c measurement methods are auto-focused and do not encourage alternative transportation use or capacity. This leads to concurrency mitigation that is limited to road widening and new road construction, alternatives that are both costly and disruptive to existing neighborhoods.
- Focus on LOS measurement disguises the fact that, at its core, transportation concurrency is an interaction between land-use goals and transportation expectations. In many cases, the statistics chosen for defining LOS in a city’s concurrency system do not adequately reflect the actual transportation system desired and/or required to serve the desired land-use plan, particularly when that plan depends on modes other than the single occupant car to provide mobility.

- Frequently, current LOS standards are based more on an expression of people's congestion preferences than on coordination of cities' long-term (20- to 30-year) land-use and transportation goals. In some cases, levels of congestion in certain areas or corridors may foster desired land-use futures by making other transportation choices (transit, non-motorized, or use of other corridors) more attractive.
- Most jurisdictions' LOS standards are not designed to evolve over time and, therefore, do not reflect changing land-use and transportation values.
- Regional traffic presents a significant challenge to cities' ability to manage local transportation concurrency. A city's conscientious efforts at setting LOS standards and balancing land-use and transportation investments can be offset by traffic that begins and ends in other places but passes through and clogs up roadways and intersections in the process. The emphasis on local impacts and the exclusion of regional effects ignore the facts that transportation networks must be managed as a system and that transportation systems cross various jurisdictional boundaries.

ALTERNATIVE APPROACHES FOR DETERMINING CONCURRENCY

Despite existing limitations, transportation concurrency presents an opportunity for local jurisdictions to improve the connection between their land-use goals and transportation expectations. The GMA gives jurisdictions broad discretion in the design of their level of service (LOS) standards and concurrency measurement process. Jurisdictions can do more to capitalize on the available discretion, designing a measurement process that advances their transportation and land-use goals. This report presents three different approaches to measuring transportation concurrency. Each is premised on the assumption that, by employing robust measures of transportation system performance, local jurisdictions can assure more efficient and intensive use of existing roadways. The three approaches are as follows:

1. Enhanced Volume/Capacity

Enhanced v/c allows jurisdictions to incorporate transit and other alternative transportation capacity when setting and implementing the LOS standard. This method also can incorporate a more robust process of developer negotiation in the mitigation process. The measured v/c ratio of cars to roadway capacity *does not change* because of increased alternative transportation choices. Rather, jurisdictions make a *policy choice* to permit a higher v/c ratio and a higher level of congestion where certain levels of transit service or other transportation choices, such as walking, exist.

A negotiated concurrency process (rather than an “all or nothing” process) can allow jurisdictions and developers to worry less about the precise number of trips estimated for a given development, and more about the overall impacts of the development on the transportation system. Moreover, it can provide jurisdictions with an opportunity to encourage development designs and other TDM programs that promote the use of alternative modes of travel.

The negotiation process is recommended because it can allow far more flexibility in designing an outcome that is mutually acceptable to both the developer and the city. The City of Redmond negotiates with developers when proposed developments are calculated to exceed concurrency standards. Negotiated agreements fund additional capital improvements, as well as ongoing programs to limit single occupancy trips; in some cases this has included requiring participation in a Transportation Management Association. Such agreements assure the city that active travel demand management will take place for the life of the development, and they assure the developer that those funds will be spent on TDM efforts relevant to that specific development.

2. Travel Time

Rather than measuring the amount of roadway congestion, an alternative LOS measure is to measure the length of time it takes to travel from point A to point B. For example, “the desirable amount of time to travel from the city center to the city limit should not exceed 30 minutes.”

Measuring travel time to and from key places in a city or along main corridors has a particular advantage over the traditional v/c approach: it is easily explained and understood by the general public. Most people speak about transportation performance in terms of travel time, whereas only transportation professionals use v/c ratios. LOS standards will likely carry more credibility with the public and government officials if they are easily understood and translated into everyday experience. However, clarity may be a double-edged sword. For example, whereas an increase of the v/c from 0.9 to 0.95 is not easily translated into driver experience, a driver immediately understands, and may not accept, the ramifications of a LOS change that increases travel time for a 10-mile trip from 15 to 20 minutes.

3: Regional Mode-Split

Adopting a regional system of concurrency would likely require changes in state law, but nonetheless a regional mode-split alternative is one model that warrants further investigation because it recognizes and attempts to deal with the regional nature of transportation systems.

The previous two measurement approaches—enhanced v/c and travel time—base their definition of “transportation concurrency” on measurement of the performance of specific facilities. The regional approach replaces a facility performance calculation with a measure of how well a region (or sub-region) achieves a transportation policy target of reducing vehicle miles traveled (VMT). For example, one regional LOS target might be to increase the share of non-single occupancy vehicle (SOV) trips by 2 percent within five years. Therefore, if the region’s current PM peak-period mode-split was 10 percent non-SOV trips, the region would remain concurrent if non-SOV mode-split was 12 percent within five years. After five years, a new LOS goal would be set.

After setting a regional LOS goal, a regional coordinating entity would distribute mode shift requirements to the region’s jurisdictions. All jurisdictions could initially be assigned the same targets, but they could negotiate with one another to adjust the distributions on the basis of local realities. That is, one city could agree to help fund a neighboring city’s transit facility

improvements in return for “credit” toward mode shifts that would occur as a result of those facilities. Because not all trips would be as easily shifted from SOV to non-SOV modes, it would make financial sense for cities to work together to fund those projects that would have the greatest mode shift effect.

COMPARING ALTERNATIVES

The alternative approaches developed during this study are to varying degrees a departure from existing concurrency practice. But to what extent will they enable the Eastside cities to practice transportation concurrency better, to change land use and transportation patterns, or realize their comprehensive plan visions more completely? To try and answer these questions, each alternative was subjected to ten tests or questions.

1. Is the alternative multi-modal?
2. Does the alternative enhance the link between land use and transportation?
3. Does the alternative address regional traffic and inter-jurisdictional transportation issues?
4. Is the alternative less resource-intensive than current practice?
5. Is the alternative easy to understand and credible?
6. Can the alternative adapt to land use and transportation changes?
7. Are the concurrency results of the alternative predictable for developers?
8. Will concurrency violations be the exception, not rule, if this approach is adopted?
9. Does the alternative provide ways to fund non-roadway transportation improvements?
10. Can the alternative be adapted to support the widely varying goals of the four cities?

The approaches scored differently on the basis of these criteria, and no single approach emerged as the ‘winner.’ Rather, the results of this assessment can be used by each jurisdiction to tailor transportation concurrency to the policies it wants to achieve.

BEYOND LOS: CONCEPTUALIZING FUTURE DIRECTIONS

There are many dimensions to transportation concurrency, ranging from the technical to the more conceptual and policy-oriented. The report outlines several directions that local and regional stakeholders can pursue to advance the goal of accommodating new growth and development while improving quality of life and transportation service. These directions include using roads less, funding transit more, and acting inter-jurisdictionally. Each of these broad directions would mean changes in individual attitudes and behaviors, as well as institutional frameworks and financing. They represent parts of a roadmap for discussion and debate now, hoping for action in the short- to mid-term future. A summary list of these ideas includes the following:

Using Roads Less

- Offer monetary rewards for residents who reduce SOV usage.
- Introduce variable roadway pricing based on time of day congestion.

Funding Transit More

- Use developer agreements to fund Transportation Management Associations and transit service.
- Concentrate new development in transit-friendly nodes and corridors, thereby building ridership which in turn leads to increased frequency of transit service.
- Underwrite transit service with Flexpass and other tools until routes important to each city reach *core* status and attain a higher level of permanence.

Acting Inter-jurisdictionally

- Expand developer agreements to include transportation systems and services across city boundaries.
- Tackle subregional transportation concurrency through formation of a multi-city Transportation Benefit District that rationalizes varying LOS standards and sets subregional performance targets and rewards.
- Create a region-wide transportation concurrency authority to establish and manage regional VMT reduction and mode-split credits.

CHANGES TO STATE AND LOCAL LAWS

The four Eastside cities have sufficient flexibility under current law to develop, implement, and fund a variety of multi-modal concurrency approaches, both within their own jurisdictions and among one or more of their neighbors. A regional approach to transportation could be coordinated under the existing authority of the Puget Sound Regional Council, requiring a change in state enabling legislation only if a form of metropolitan government were desired. Consequently, the project team does not recommend significant changes to current state and local concurrency legislation at this time.