Land Use & Climate Change Advisory Committee

Background Information and Research for LUCC Potential Recommendation on Transportation Concurrency

Modifying Transportation Concurrency to encourage compact, mixed and transit-oriented development in urban growth areas will result in a reduction of greenhouse gas emissions, a reduction in per capita vehicle miles traveled, a reduction in our state's dependence on foreign oil, and conservation of resource lands.

The team recommends that communities be encouraged, and assisted, to develop multi-modal concurrency methods for judging the acceptability of proposed developments. These methods should recognize the potential positive benefits to transportation and climate change offered by compact/transit oriented development when development design and the actual availability of transit services will produce the desired reductions in unnecessary personal vehicle travel. The methods should be understandable, based on sound data, and relatively simple to apply. This is a tall order that will require additional work by academia, CTED, WSDOT, AWC, transit providers, RTPOs and others to develop multi-model concurrency analysis tools, and assist communities in applying them.

The Committee might want to consider changing the RCWs implementing the GMA. RCW 36.70A.070(6)(a)(iii)(B) addresses using level of service standards for all locally owned arterials and transit routes to serve as a gauge to judge performance of the system. It already requires regional coordination of standards, and could be amended to also require using a multimodal approach. Similarly, RCW 36.70A.070(6)(b) could be amended to require consideration of multi-modal improvements or strategies to accommodate the impacts of development—currently this is optional.

In addition, it may be desirable to amend the GMA planning goals to clarify that planning for a multimodal system, supported by using multimodal concurrency tests, is now a priority.

Background: The GMA in RCW 36.70A.020 (3) encourages efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans. In addition, RCW 36.70A.020 (12) provides that comprehensive plans and development regulations ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

Recent research demonstrates that compact/transit oriented developments can reduce per capita automobile trips, and by implication vehicle miles of travel (VMT) and greenhouse gas emissions related to travel.[1,2] The magnitude of the reduction is affected by development design and the accessibility, proximity and availability of mixed land uses and transit services. In addition, properly designed transit oriented developments can actually increase transit ridership over that expected (a transit "bump") based just on increased population density.[3]

Communities typically analyze the transportation impact of proposed developments by calculating the auto trips likely to be generated by uses in the development based on traditional trip generation factors. The volume of these trips is then compared to the current or planned capacity of the adjacent roadway system to determine if the increased trips will cause an unacceptable reduction in the level of service the roadways can provide. Denser developments appear to cause a greater impact if the old trip factors are used, and if transit availability to satisfy demand for some trips and the trip-reducing attributes of a true transit oriented development are not taken into account. In this way, concurrency could act to discourage compact/transit oriented developments that in fact have the potential to reduce per capita VMT and greenhouse gas emissions.

If compact development is to be targeted into certain areas, the tools used to measure concurrency should be able to capture all modes of transportation available in the area (including transit, walking, biking), not merely be a tool to measure vehicle volume to road or intersection capacity. Concurrency policies and development regulations at the local level should recognize that concurrency can be achieved through a variety of measures, including for example, options such as car pooling, long-term transit passes, zip cars, and transit based improvements, not just traditional measures such as expanding lane capacity and intersection improvements.

The following responds specifically to the 4 questions posed to the group, and the recommendations listed above:

1. **What, if any, actions have been taken by local governments to address climate change related to this particular idea?**

All cities and counties fully planning under the GMA are required to adopt a transportation concurrency ordinance to deny proposed developments if they cause the level of service on a locally-owned transportation facility to decline below the adopted standard. Some cities have become increasingly sophisticated in implementing this requirement to achieve their

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[1] Lawrence Frank and Company, Inc., Mark Bradley, and Keith Lawton Associates. "Travel Behavior, Emissions, & Land Use Correlation Analysis in the Central Puget Sound." WSDOT in cooperation with FHWA. July 20, 2005.

[2] Reid and Robert Cervero. "Travel and the Built Environment - A Synthesis," Transportation Research Record, 1780. 2001:111.

[3] Cervero, Robert. "Transit-Oriented Development's Ridership Bonus: A Product of Self-Selection and Public Policies." Environment and Planning. 2007: 2068-2085.

comprehensive plan goals. In particular, Bellevue, Bellingham and Redmond are developing new concurrency systems that support their multi-modal transportation approach.

In 2005, the Legislature required regional transportation planning organizations to address multimodal concurrency in regional growth centers during the development of their regional transportation plans. In 2008, the Legislature followed-up by providing funding for a multimodal concurrency pilot project in Bellevue. Bellevue, the Puget Sound Regional Council and area transit agencies are working together on the project. These agencies intend to develop a scalable methodology for projecting multimodal capacity and demand; a transferable concurrency measurement template; and suggestions for evaluating transit and multimodal improvements. They will also develop transportation demand management strategies, and identify the implications to transit providers of linking transit service planning with local land-use decisions. The Puget Sound Regional Council anticipates using the results of the study to inform its effort to address the 2005 multimodal concurrency requirement for all 35 regional growth centers identified in its regional transportation plan. The pilot project is anticipated to be complete by September of 2009. For more information, contact Kevin O'Neill, 425-452-4064, KONeill@bellevuewa.gov.

Bellingham is currently considering an innovative multimodal concurrency methodology. If the city council adopts the methodology, the level of service standard for determining concurrency will be person trips available in the concurrency service area. The city will calculate person trips available based on arterial and transit capacity, crediting additional person trips available based on the degree of pedestrian and bicycle network completeness in the service area. Bellingham works closely with the Whatcom Transportation Authority (WTA) to coordinate the city's comprehensive plan vision of mixed-use urban villages with the transit authority's strategic plan to connect the villages and employment centers with high-frequency public transit. If the city council adopts the new methodology, city staff will also work closely with the WTA to collect the transit ridership statistics needed to calculate transit Person Trips Available. For more information, contact Chris Comeau, City of Bellingham (ccomeau@cob.org, 360-778-7900).

In 2004, the City of Redmond updated its comprehensive plan, establishing the policy basis for a multimodal transportation concurrency system, known as the "plan-based" approach to concurrency. This policy requires that the funding of programs, construction of facilities, and provision of services occur in proportion to the needs of the city matching the pace of growth. It also ensures that the transportation system explicitly supports achieving the community's vision and policies set forth in the comprehensive plan.

Under Plan-Based concurrency, the city uses mobility units as an expression of the level of mobility. One mobility unit equals one person mile traveled. New development that is consistent with Redmond's comprehensive plan creates mobility unit demand. The city calculates a development's mobility demand based on its design, density, and diversity, as well as its commute-trip reduction strategies. Planned multimodal transportation improvements that serve mobility demand are supplied by the City's transportation facility plan and are expressed as mobility unit supply. These improvements must be available at the time of development, or

within six years. As long as there is an adequate mobility unit supply available to meet the mobility unit demand generated by a proposed development, the City issues a certificate of concurrency.

Should a development fail its concurrency evaluation, the developer can mitigate mobility demand by reducing the size of the development, or by undertaking an unfunded transportation improvement. . Candidate unfunded transportation improvements are listed in the transportation facility plan and include improvements to accommodate motor vehicles, bicycles, or pedestrians, increased public transit service, or support for ridesharing, transportation demand management, and transportation system management programs. For more information, contact Terry Marpert, City of Redmond, tmarpert@redmond.gov, 425-556-2428).

2. What, if any, computer modeling programs or other analytic and assessment tools are available to assist a local government in addressing this idea?

Pursuant to SB 6580, CTED is currently working with a consultant to study currently available models for assessing the impacts of land use decisions on greenhouse gas emissions. These models address the land use/ transportation connection.

In 2007, the California Department of Transportation completed a study assessing the "state of the practice" regarding local-level travel demand models and tools, especially regarding their abilities to effectively analyze land use plans and projects. It evaluated the capabilities of travel demand models, as well as several new software planning tools (PLACE3S, INDEX, and the 4D elasticities post-processor) for assessing land use plans and projects. You can find the study at: http://www.dot.ca.gov/newtech/researchreports/reports/2007/local_models_tools.pdf. Note that each jurisdiction typically must customize and enhance these tools to meet their specific transportation planning and analysis needs.

3. What are the positive and negative impacts of a local government addressing this idea on:

If cities across the state adopt multimodal transportation concurrency systems, affordable housing, employment, transportation costs, and economic development would likely be impacted. Those impacts, however, are difficult to quantify and predict because:
1. Cities are just beginning to implement multimodal concurrency systems in Washington and it is too early to evaluate their impact.
2. Florida is the only other state that requires transportation concurrency and instead of trying to design more multimodal concurrency systems, they have opted to exempt certain infill projects and urban areas from concurrency.
3. Unless highly explicit state direction is given, multimodal transportation concurrency systems will likely be driven by the measurements, standards, scale of application, and mitigation details defined by each city and county to meet their unique policy goals such as: controlling the timing

of development, supporting transportation system funding, subtly limiting growth, or focusing development in desirable areas.[4]

Presuming local governments implement multimodal concurrency systems to meet the general policy intent of reducing barriers to compact, transit-oriented development and increasing the use of multimodal solutions to address concurrency failures, we offer the following observations:

a. Affordable housing

Critics argue that land use regulations like transportation concurrency ordinances generally increase the cost of housing to the extent they 1) cause delay in the permitting process, 2) require the developer to pay for traffic studies, and 3) require the developer to pay for transportation infrastructure or service improvements in order to be allowed to build. Growth management supporters argue that transportation concurrency ordinances 1) expedite the development approval process by defining a consistent and predictable process, 2) reduce public opposition to development by assuring new growth will not degrade levels of service, and 3) reduce public subsidies to new development.

Both sides probably agree that transportation concurrency may unintentionally cause sprawl to the extent that development relocates from compact urban areas to rural areas with less congested roads to avoid triggering concurrency failures. Most local concurrency systems discourage sprawl to some degree by adopting higher level of service standards in rural areas compared to urban areas. Some local governments have also attempted to correct this problem by accepting failing level of service standards in urban centers, measuring concurrency over larger areas in urban centers, or assuming the presence of bicycle and pedestrian infrastructure or transit service reduces vehicle roadway traffic to some degree.

To the extent that multimodal concurrency systems remove barriers to compact development and reduce sprawl, they may increase the affordability of housing by 1) supporting the development of more affordable consumer housing choices (e.g. denser infill development may be less expensive per unit than single-family large lot development in suburban or exurban areas, and 2) reducing household travel costs.[5] The higher household travel costs associated with sprawl disproportionately affect lower income households because transportation expenditures claim a higher percentage of their overall budgets.[6]

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[4] Hallenbeck, Mark et al. "Options for Making Concurrency More Multimodal." Prepared for Puget Sound Regional Council. December, 2006.

[5] Center for Transit Oriented Development and Center for Neighborhood Technology. The Affordability Index: A New Tool for Measuring the True Affordability of a Housing Choice. The Brookings Institution. January 2006.

[6] Bernstein, Scott, Carrie Makarewicz, and Kevin McCarty. Driven to Spend: Pumping Dollars our of Our Households and Communities. Surface Transportation Policy Project. June 2005.

Multimodal concurrency systems may be more predictable and consistent than traditional concurrency systems and provide less costly and easier to implement alternatives to roadway improvements in compact urban areas. On the other hand, to the extent multimodal concurrency systems are more complex, they may be more time consuming and involve more costly traffic studies for developers, which may tend to increase housing prices to some extent. Also, if local governments require multimodal improvements in areas where they had previously accepted failing levels of service, development costs may correspondingly increase.

b. Employment

Multimodal transportation concurrency would not have any direct affect on employment.

c. Transportation costs

In theory, the application of multimodal concurrency systems reduces sprawl. Reducing sprawling development reduces the need for public infrastructure investments in roadways and correspondingly decreases roadway-related operations and maintenance costs.[7] The effectiveness of multimodal solutions in reducing transportation costs depends on the context. In compact urban areas, the cost of roadway expansions are likely to be substantially higher because of limited land availability. In those areas, multimodal solutions that shift travel from single occupant vehicles to transit, ridesharing, biking, or walking may be less costly and more effective than roadway expansions. However, adding transit, bicycle and pedestrian infrastructure requirements in other less urban areas may increase transportation costs.

d. Economic development

Multimodal transportation concurrency may allow opportunities for economic development in dense areas with good transit, bicycle and pedestrian infrastructure that might otherwise be prevented by road capacity constraints. Multimodal transportation concurrency may particularly support industries that depend on high quality transit, bicycling, and walking travel such as tourism, senior services, and universities. Also, to the extent multimodal transportation concurrency delays or avoids costly road expansions, public resources may be invested more broadly and land not used for road expansions may remain tax-generating properties. However, if local governments forgo roadway improvements that would have been made in a traditional concurrency system in favor of a multimodal solution, and then fail to provide viable transit, ridesharing, bicycle, and pedestrian options the resulting congestion could stifle economic development.

[7] Puget Sound Regional Council. "Vision 2020+20 Update – Information Paper on the Cost of Sprawl." December 19, 2005.

4. Please provide a general assessment of state and local resources needed, financial and otherwise, needed to fully implement the idea.

The legislature has already funded several studies of multimodal transportation concurrency including the "Options for Making Concurrency More Multimodal" study funded by the 2005 Legislature and the multimodal concurrency pilot project funded by the 2008 legislature. The Puget Sound Regional Council has designed the pilot project to produce a scalable template for implementing multimodal concurrency systems. This template will be used not only by Bellevue, which is the focus of the pilot project, but will also be made available to the Council's other 35 regional growth centers. Additionally, a few cities are independently moving toward multimodal transportation concurrency under the existing legal framework. These cities have reported costs of $150,000 to $250,000 to develop their multimodal concurrency systems.

The state could encourage other local governments to follow the lead of these early adopting cities by providing additional technical assistance, model plan policies and ordinances, and/or additional money to local governments. The committee may choose to recommend granting money directly to local governments to pay the full or partial cost of developing multimodal transportation concurrency systems. These funds could be added to the planning grant resources managed by CTED's Growth Management Services office.

A number of different organizations could provide technical assistance or develop model plan policies and regulations with additional funding. CTED's Growth Management Services has over 15 years of experience providing planning assistance to local governments. WSDOT also works with local governments and regional transportation planning organizations on transportation planning issues. WSDOT also has a direct interest in multimodal transportation concurrency ordinances because it owns or operates some multimodal transportation infrastructure such as ferries, airports, or park-and-ride facilities. One additional full time WSDOT planner focused solely on providing multimodal transportation planning assistance to local governments would cost $112,000-$121,000 per year in FY 2009-11.

Alternatively, funding Regional Transportation Planning Organizations (RTPOs) to provide multimodal planning assistance to local governments could build on the multimodal concurrency pilot project funded at the Puget Sound Regional Council by expanding the application of the results to other areas of the state. While all RTPOs do not necessarily have in-house technical expertise in concurrency, involving them would introduce a more regional perspective to concurrency which is currently lacking in many areas of the state. State statutes support the role of RTPOs in promoting consistent regional approaches to transportation planning, requiring them to review and certify transportation-related county-wide planning policies and the transportation elements of local comprehensive plans. WSDOT could serve as the conduit for pass-through funding provided to Regional Transportation Planning Organizations.