



Proposition 1 Analysis

Executive summary

The Cascade Bicycle Club staff recommends a “no” vote on the RTID/ST2 ballot measure (Proposition 1) while recommending a “yes” position on a future stand-alone light rail expansion measure. While most of the transit improvements funded by the Sound Transit 2 portion would benefit cyclists, the RTID funding package would negatively impact cycling to a larger degree through the direct effects of increased traffic and long-term land use impacts that disincent nonmotorized transportation.

Analysis of the RTID package

Increased traffic will depress cycling trips

The Regional Transportation Investment District (RTID) portion of the combined funding package is primarily a single-occupant vehicle (SOV) capacity expansion initiative. RTID will add about 186 new lane-miles of roadway¹, of which about 62% of the total \$6.9B will be devoted to new general purpose capacity². The remainder goes toward high-occupancy vehicle lanes (16%), freight (8%), transit (4%) and bicycle & pedestrian projects (.3%).

We know from numerous studies that new automobile capacity generates “induced traffic” – increased vehicle miles travel (VMT) compared with what would otherwise occur³. A 1997 study determined that 60–90% of increased road capacity was filled with new traffic within five years of project completion⁴. Another predicted that 100% of new capacity is eventually filled by induced trips⁵. Over time, it appears that generated traffic erases most or all of the congestion mitigation that capacity projects promise⁶. New highway lane-miles, such as those which would be funded by RTID, will put more cars on the road, more often.

The new traffic generated by RTID’s vehicle capacity increases are likely to have a negative effect on bicycling in the region. New roads and their new traffic amplify the feedback loop of auto dependency; adding trips to any one part of the road network creates new demand for capacity increases at the endpoints or intersections to those roads. Moreover, capacity increases like arterial widenings make streets more hostile to cyclists, with increased speed differentials (raising the likelihood of serious injury or death in a collision⁷) and decreased perception of safety for cyclists. A 1995 report by the Transportation Research Board stated that “[b]icycle and pedestrian travel may be discouraged if the capacity addition...improves traffic flow patterns for automobiles and

trucks to the detriment of slower-moving modes”⁸. The report goes on to state that “the evidence from the studies reviewed here supports the view that highway capacity additions can induce new trips, longer trips, and diversions from transit”. We assume that bicycling would suffer a similar diversion as transit as the transportation system skews toward further auto-centrism.

The negative effect on bicycling would likely have effects beyond the specific corridors addressed by the RTID package; adding highway lane miles is shown to increase VMT throughout a wider region⁶.

Land use changes will depress cycling trips

One of the prime factors that determine whether someone will choose to take a trip by bike versus another mode is the surrounding land use⁹. For a list of land use factors and their definitions, see *Land Use Impacts on Transportation* by Todd Litman, page 3 (<http://www.vtpi.org/landtravel.pdf>). Because most bicycle trips are less than five miles in length, the proximity between origins and destinations in denser urban areas makes the bicycle an attractive option, especially considering the inconveniences that begin to manifest for auto trips (*e.g.* congestion and parking) as density increases. Residents in compact, bikeable communities tend to ride at higher rates than those who live in less dense areas. According to a 1995 study by the University of California, “[r]esidents in a pedestrian friendly community walked, bicycled, or rode transit for 49% of work trips and 15% of their non-work trips, 18- and 11-percentage points more than residents of a comparable automobile oriented community”¹⁰.

New automobile capacity facilitates the kind of low density development commonly referred to as “sprawl”^{11,12,13}. Additional general purpose lanes tend to stimulate the design features we associate with suburbs: widely separated origins and destinations, broad arterials, and poor connectivity. These factors suppress nonmotorized transportation rates by making routine bicycle trips impractical due to distance and the lack of perceived safety.

In conclusion, RTID’s influence on land use patterns would likely make it more difficult and more dangerous for Puget Sound area residents to ride their bicycles.

Analysis of the Sound Transit package

Sound Transit 2 would spend \$10.8B to add 49.5 miles of light rail north to Lynnwood, south to the Tacoma Dome, and east to Bellevue’s Overlake Transit Center¹⁴. Two bicycles would be permitted on each light rail car¹⁵.

While the interactions between traffic, land use, and bicycles are relatively well-documented, the influence that expanded high-capacity transit has on bicycling is less clear, although some broad conclusions can be drawn.

An overview of the subject is available in Lesson 9 of the Federal Highway Administration Course on Bicycle and Pedestrian Transportation: *Bicycle and Pedestrian Connections to Transit*¹⁶. That publication notes that the bicycle-transit combination offers some unique advantages, which are summarized as follows:

- Bike-on-transit service enables bicyclists to travel farther distances and overcome topographical barriers.
- Bike-on-transit services to recreational destinations during off-peak periods can increase overall transit ridership and increase efficient use of capacity.
- Bicycle-to-transit services (trails, on-road bike lanes, and bike parking) enlarge transit's catchment area by making it accessible to travelers who are beyond walking distances from transit stations.

The opinion of the Cascade Bicycle Club Advocacy staff is that transit is a complimentary mode to bicycling, and should, in general, receive the Club's support.

However, it should be noted that the ST2 package could be improved. ST2 programs \$300 million toward the construction of unpriced parking lots. "Free" parking generates short automobile trips¹⁷. Those additional trips will create the same challenges for cyclists as were noted in the RTID analysis above. These parking structures and lots will also make it more difficult to proximally locate destinations within easy walking distance of transit centers while putting pressure on the local arterial road system due to peak-hour arrival and departure of vehicles.

Discussion

Cascade Bicycle Club has a tradition of opposing limited access highway capacity enhancement projects like Referendum 51 for the reasons noted under the "RTID" portion of this analysis. Urban transportation system performance and bicycle comfort and safety are positively correlated with greater street connectivity, pedestrian and bicycle facilities, shorter route options, supportive land use, traffic demand management strategies, and more extensive transit service – not increased general purpose lane-miles.

If Sound Transit 2 and RTID were separate ballot measures, our recommendation would be simple: endorse a "yes" position on ST2 and a "no" position on RTID. However, that is not the case. The measures are linked, and a number of decision makers in the community predict that should the combined package fail in November, any further Sound Transit expansion would be permanently tabled.

The Advocacy Department disagrees with that opinion. Sound Transit 2 enjoys strong support in the region (for example, public opinion research done by WSDOT showed light rail for I-90 polling at 68% in the three-county ST region). In 2008 we would have a window of six months to convince reticent lawmakers that running on the November ballot alongside a broadly-supported transit package would not jeopardize their reelections. Furthermore, as the first light rail phase opens and gasoline prices continue to increase, we predict that transit will become increasingly popular. We advise

against basing your decision on the need to save Sound Transit from state lawmakers—or itself.

A “no” vote on the combined package need not be interpreted as a “no” vote for transit. It is a call for transportation investments that are consistent with our goal of increasing walking, biking, and transit mode shares while reducing the percentage of trips made by single-occupant vehicles. Unfortunately, the package before us does not support that vision and we must recommend a “no” vote on Proposition 1.

¹ RTID public outreach presentation, RTID website

http://www.rtid.org/docs/mtg06_08_07/RTID_presentation_6_8_7.pdf

² <http://blog.carlessinseattle.us/models/rtid.xls>

³ Todd Litman (2007), *Generated Traffic and Induced Travel*, <http://www.vtpi.org/gentraf.pdf>

⁴ Mark Hansen and Yuanlin Huang (1997), *Road Supply and Traffic in California Urban Areas*, Transportation Research A, Vol. 31, No. 3, pp. 205-218

⁵ SACTRA (1997), Transport Investment, *Transport Intensity and Economic Growth: Interim Report*, Standing Committee on Trunk Road Assessment, Dept. of Environment, Transport and Regions (www.roads.detr.gov.uk/roadnetwork/heta/sactra98.htm)

⁶ Mark Hansen, (1995), *Do New Highways Generate Traffic? Access No. 7* (www.uctc.net), pp.16-22.

⁷ Kim, Joon-Ki *et al* (2007), *Bicyclist Injury Severities in Bicycle-Motor Vehicle Accidents* <http://pubsindex.trb.org/document/view/default.asp?lbid=801004>

⁸ Transportation Research Board (1995) *Expanding Metropolitan Highways: Implications for Air Quality and Energy Use*, TRB Special Report 245, Washington, DC: National Academy Press, p. 162.

⁹ Robert Cervero and Michael Duncan. (2003) *Walking, Bicycling, and Urban Landscapes: Evidence From the San Francisco Bay Area*. Am J Public Health. September; 93(9): 1478–1483

¹⁰ Robert Cervero and Carolyn Radisch (1995), *Travel Choices in Pedestrian Versus Automobile Oriented Neighborhoods*, UC Transportation Center, UCTC 281 www.uctc.net

¹¹ Eric Damian Kelly (1994), *The Transportation Land-Use Link*, *Journal of Planning Literature*, Vol. 9, No. 2, Nov. 1994, pp. 128-145

¹² Terry Moore and Paul Throsnes (1994), *The Transportation/Land Use Connection*, American Planning Assoc., Planning Advisory Service, Report 448/449 (Chicago; www.planning.org)

¹³ Peter Newman, Jeffrey Kenworthy. (1999) *Sustainability and Cities: Overcoming Automobile Dependence*, Island Press

¹⁴ Sound Transit 2 home page <http://www.soundtransit.org/x1768.xml>

¹⁵ Link Light Rail Trail Specifications, Sound Transit 2 website

<http://www.soundtransit.org/x4306.xml#work>

¹⁶ FHWA Course of Bicycle and Pedestrian Transportation: Lesson 9 – Bicycle and Pedestrian Connections to Transit. http://safety.fhwa.dot.gov/PED_BIKE/univcourse/swless09.htm

¹⁷ Donald Shoup (2005), *The High Cost of Free Parking*, Planners Press (www.planning.org)