



The Columbia River Crossing's Carbon Tire-Print

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The Columbia River Crossing (CRC) Project Creates an Unprecedented Opportunity

The Columbia River Crossing is the first major transportation project under consideration in the region since global warming has risen in public consciousness. Now that greenhouse gas reduction goals have been enacted in both Oregon and Washington, the CRC is our first opportunity to plan a transportation project in a way that minimizes its global warming impact.

The Columbia River Crossing project is a planned highway construction project on Interstate 5 between Portland and Vancouver. Currently estimated to cost \$4.2 billion, the project is considering several alternatives to increase vehicle capacity beyond the existing six lanes, including a replacement bridge of 10 or 12 lanes and a supplemental bridge increasing total lanes to eight. There is also a no-build option that is not seriously being considered. For each of the build options, the project is considering including either light rail or bus rapid transit.

At a recent Task Force meeting, the project staff spoke favorably about a replacement bridge, seeming to indicate that it will recommend replacing the existing structures as the Locally Preferred Alternative. The staff also discussed light rail as the most cost-effective public transportation alternative to carry the greatest number of people.

As we evaluate transportation projects, we need to consider the connection between transportation and global warming. In the Regional Transportation Plan, the Metro regional government identifies global warming as a "serious and growing threat to Oregon's economy, natural resources, forests, rivers, agricultural lands, and coastline."¹ It is well-known that transportation is a major cause of greenhouse gas emissions. The Oregon Department of Energy has estimated that 38% of Oregon's CO₂ emissions, the primary greenhouse gas, is from vehicle exhaust.

Given this data, it is evident that it's in our interest to develop strategies to reduce vehicle exhaust. We need multiple strategies to address the problem. Increasing fuel efficiency is an important step, but we still need to address the other main transportation driver (no pun intended) of greenhouse gas emissions: the number of miles we travel in vehicles.

In order to begin to address climate change and meet the carbon goals we set for ourselves, every transportation investment must be considered with an eye toward reducing carbon emissions. This approach is consistent with our region's aspiration to lead the nation in sustainable planning. It is also consistent with the recommendation by the Governor's Advisory Group on Global Warming to use climate change as a key criterion in state funding decisions.

We Can't Build Our Way Out of Congestion

The good news: both the replacement and supplemental bridge proposals include some elements that increase transportation choices and have a positive impact on global warming emissions. Light rail would provide a low-emissions, high speed alternative to vehicle travel into the city core. Increased access for bicycles and pedestrians would, if well-designed with adequate space, provide a zero-carbon emitting, healthy way to cross the bridge. And assuming equity considerations are adequately addressed, tolling could be a good tool to decrease the number of vehicles using the bridge, particularly during the most congested hours. All these considerations are commendable.

Yet it is unclear why we need a 10 to 12-lane, \$4 billion bridge to achieve these improvements. Transportation planners agree that you can't build your way out of congestion. When road capacity is increased, congestion is temporarily reduced, but new demand quickly increases the congestion again because people make trips they previously would

not have made. An analysis of seven separate studies of highway projects showed that the added demand immediately consumes 10-50% of new road capacity, and that 50-100% of the capacity is gone in just four years.²

A recent study by the Sightline Institute found that adding lanes to a highway significantly increases global warming emissions.³ It estimates that each extra lane-mile built will increase emissions of carbon-dioxide by more than 100,000 tons over 50 years. In the short term, adding lanes will briefly decrease emissions because the vehicles traveling are idling less in traffic. However, any short-term fuel savings from congestion relief are quickly overwhelmed by increased traffic volumes on the roadway. What we're left with is even more cars sitting in traffic.

Our Transportation Choices and Land Use Patterns are Closely Intertwined

Adding new highways can induce low-density sprawl, which in turn lengthens trip distances and requires car travel for nearly all trips. New roads can tilt development patterns toward car-dependent lifestyles for decades to come. As a result, the Governor's Advisory Group on Global Warming encourages policy decisions that limit sprawl development and encourage efficient development of residential, business and industrial land.⁴

Yet we haven't seen any meaningful analysis of future land use patterns we might expect to see in Clark County if we build a big bridge. The CRC staff should study how adding lanes may lead to new low-density development on the urban fringe and increased emissions. Results on this study must be included in the project's analysis, since a bridge that encourages more cars and increased vehicle miles will erase gains from increased fuel efficiency and make it much harder to reach our global warming goals.

Although there is a great deal of information still missing from the analysis, some of the data already available is concerning. Specifically, the number of vehicle trips predicted in the future under every alternative is well above the number needed to address climate change. Climate change scientists have determined that in order to avoid dramatic damage from temperature increases, we must reduce greenhouse gas emissions to 80% below 1990 levels. Rather than moving toward these targets, every alternative being examined, including the no-build, shows an almost 30% increase in vehicle trips over 2005 levels by 2030.⁵ This means CO₂ emissions will go up in every scenario, undermining our efforts to reduce emissions through clean energy strategies and efficiency improvements. We should identify alternatives that, at a minimum, keep the future trip count to current levels.

More Transportation Choices Reduces Greenhouse Gases

According to a new survey by the National Association of Realtors and Smart Growth America, three-fourths of Americans believe that improving public transportation and building communities that do not require as much driving are better long-term solutions for reducing traffic than building roads. This trend is playing out in public decisions as voters are becoming unwilling to pay for transportation projects that do not include a consideration of global warming.

Just last month, Seattle area voters rejected a tax increase that would pay for both roads and transit projects. According to exit polling, 20% of people who voted “no” on the measure cited global warming as the main reason they voted “no.”⁶ The global warming impact was enough to cause some people who supported transit to vote against the project, and the global warming voters swung the vote. People in the Pacific Northwest and across the country—including unlikely groups like the National Association of Realtors—understand that we can’t ignore global warming when it comes to transportation planning. The Portland area, known nationally for its sustainable land use and transportation planning approach, should be at the forefront of figuring out how to integrate greenhouse gas reduction into transportation planning.

We know that poorly planned growth is bad for commuters, bad for the environment, and bad for the economy. We know that increasing freeway capacity leads to increased traffic and pollution. And now, thanks to recent studies, we also know that increasing freeway capacity increases global warming emissions.

As the most expensive transportation project in the region’s history, the Columbia River Crossing will set the precedent for how we address climate change in transportation planning for years to come. We can’t pretend that our transportation system will reduce greenhouse gases if the projects we build increase emissions.

We have an important choice to make, and we, along with future generations of Oregonians and Washingtonians, deserve smart solutions that will protect both our environmental and economic future. Smaller-scale solutions can improve mobility while also reducing fuel use and climate impacts at a much lower cost. Before deciding whether the solution being proposed for the Columbia River Crossing will best meet the needs of the region for next 100 years or more, we need the project to provide complete information on the carbon impacts of the current proposal, and we need to consider a carbon-neutral solution for I-5. ✨

¹ 2035 Regional Transportation Plan Draft, Portland Metro Area, 2007, page iii. www.metroregion.org/index.cfm/go/by.web/id=25037.

² John Holtzclaw, “Induced Traffic Confirmed.” www.sierraclub.org/sprawl/transportation/seven.asp.

³ Clark Williams-Derry, Sightline Institute, www.sightline.org/research/energy/res_pubs/climate-analysis-gge-new-lanes-10-07.

⁴ Oregon Strategy for Greenhouse Gas Reductions: Governor’s Advisory Group On Global Warming (December 2004), Pages 84 and 81, www.oregon.gov/ENERGY/GBLWRM/docs/GWReport-Final.pdf.

⁵ Columbia River Crossing Project, Task Force - November 27, 2007 Meeting Materials 1 of 2, page 72, www.columbiarivercrossing.org/Library/Default.aspx.

⁶ seattletimes.nwsourc.com/ABPub/2007/11/08/2004002419.pdf.

A Seattle study found that the households located in the most interconnected areas of Seattle generated less than half the VMT of households located in the least-connected areas of the region, holding true after adjusting for household size, income and vehicle ownership.

— Frank, Lawrence.
Transportation Research – Part D March 2000.

An Atlanta study by some of the same researchers as the Seattle study above found that people who live in more walkable neighborhoods—with a mix of housing types and streets that connect to shops, offices and other destinations—drive 30 % less than those in conventional auto-oriented settings, even when they own the same number of cars at the same rate.

— U.S. EIA. “U. S. Net Imports by Country.” Washington DC: U.S. Department of Energy, Energy Information Administration. 2006d.

All fossil fuels generate CO₂ when burned.

Burning fossil fuels harms us not only by contributing to global warming with the release of CO₂, but also by causing acid rain and air pollution. Power plants release the majority of sulfur dioxide and much of the nitrogen oxides when they burn fossil fuels, such as coal, to produce electricity. Electricity generation is responsible for 41% of US man-made CO₂ emissions.

— www.wikipedia.org

CARBON’S NAME IN OTHER LANGUAGES

- * Latin: Carboneum
- * Spanish: Carbono
- * Croatian: Ugljik
- * French: Carbone
- * Swedish: Kol
- * Czech: Uhlík
- * Italian: Carbonio
- * Norwegian: Karbon
- * Portuguese: Carbono
- * Russian: Углерод
- * German: Kohlenstoff - r



— www.environmentalchemistry.com