



**Date:** 18 April 2023

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**From:** Chris Smith, No More Freeways  
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Mary Peveto, Neighbors for Clean Air

**Subject: Comment on I-205 Tolling and Expansion Environmental Assessment**

*“Some highway engineers have a mentality ... that would run an eight-lane freeway through the Taj Mahal. That is our problem.”*

– Oregon Governor Tom McCall, 1970

No More Freeways (NMF) and Neighbors for Clean Air (NCA) write to comment on the I-205 tolling and freeway expansion Environmental Assessment (EA).

The core philosophy of the No More Freeways campaign is that widening urban freeways has been shown over and over as counterproductive due to induced demand. In a period of obvious climate change, such widenings are also a significant failure to advance our climate goals, especially considering such freeway expansions also siphon resources that should instead be spent on investments in traffic safety and basic road maintenance.

Fossil-fuel based transportation comprises 40% of all GHGs and is the largest source of toxic air pollution. Poor air quality in the Portland region already poses significant risk to human health, additional emissions are untenable, and the transportation sector should be part of reducing harmful pollution in our communities. Ninety percent of Oregonians live in neighborhoods where the air they breathe causes cancer. Oregon’s most populous county, Multnomah, is in the bottom 2% nationally for diesel pollution, with BIPOC neighborhoods subjected to rates of diesel emissions 2-3 times higher than those of white residents. We cannot add to this crisis.



While we believe that congestion pricing can be an effective tool to both manage performance of a facility and to reduce Greenhouse Gas Emissions, investing the proceeds of pricing in the expansion of highways rather than advancing alternatives like transit and active transportation is a policy failure. We detail our concerns with the proposed I-205 tolling and expansion project below.

For the record we also attach our critique of the Categorical Exclusion provided for the Abernethy Bridge (Phase 1a) component of this project.<sup>1</sup>

### **1. Failure to consider sufficient alternatives**

The project proposes to use a combination of pricing, reconstruction and widening to deliver a variety of benefits including congestion management and seismic resilience, but chooses a maximalist approach using widening as the primary answer to congestion and then pricing as a mechanism to pay for the widening. Alternate strategies that rely on pricing as the primary congestion management tool could provide equivalent results at a much lower cost to the community and with fewer environmental impacts. Potential alternative configurations that are not analyzed include:

- Congestion pricing without widening, potentially with only a single tolling gantry at the Abernethy Bridge
- Seismic mitigation or replacement of bridges without widening

The community deserves consideration of a full set of alternatives that could deliver comparable benefits at lower cost.

### **2. Flawed cost-benefit analysis**

Please see the March 21st, 2023 letter<sup>2</sup> from Joe Cortright of NMF to the FHWA demonstrating serious flaws in both the analysis and conclusion of the project cost benefit.

### **3. Failure to sufficiently analyze 4(f) issues**

ODOT/FHWA fail to adequately analyze the impact of bridge replacement and/or widening on rivers and streams. Please see EA comments filed by Tualatin Riverkeepers.

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<sup>1</sup> August 29, 2022 letter from No More Freeways

<sup>2</sup> March 21, 2023 letter from Joe Cortright to FHWA



#### 4. Inaccurate and insufficient traffic projections

ODOT/FHWA have not prepared accurate traffic projections for the I-205 project.

**A. Travel demand on I-205 has been growing slowly and ODOT inexplicably predicts a three-fold acceleration in traffic growth.** ODOT traffic count data shows that traffic on I-205 in the project area has grown at a rate of about 0.3 percent per year for the past 14 years. Despite that very slow level of growth, the EA asserts that the traffic growth rate on I-205 will more than triple over the next decade to about 1.15 percent per year. No explanation is provided for this enormous increase in expected vehicle traffic on I-205.

This is likely an indication of bias and error in traffic modeling. It overstates the likely amount of congestion and delay in the No Build scenario, and therefore overstates the benefits associated with project construction, and mis-states the social and environmental effects of the project.

ODOT Traffic Counts	2005	2019	AAGR
Stafford Automatic Counter	82,700	87,100	0.37%
Abernethy Bridge	99,600	103,100	0.25%
Average			0.31%

I-205 EA Traffic Projections (No-Build)	2015	2027	AAGR
Tualatin River Bridge	100,000	111,000	0.87%
Abernethy Bridge	112,000	133,000	1.43%
Average			1.15%

**B. ODOT admits that the Kate Travel Demand model over-predicts traffic on I-205.** ODOT relies on the Metro Kate travel demand model. Metro prepared a “validation”



report comparing the outputs of the Kate model to actual traffic counts. This report showed that the Kate travel demand model overestimates traffic on the I-205 Abernethy Bridge by 20 percent (“cutline R-04).

### 6.1.3 Model Validation

Metro’s RTDM was validated to 2015 conditions, using observed data including 2014 Highway Performance Monitoring System and 2015 auto and freight counts. Details about the model validation are documented in *2017 Kate v1.0 Trip-Based Demand Model Validation Report for Base Year 2015*. Model assignment results for average weekday, AM 2-hr (hr), and PM 2-hr peak periods are within FHWA’s acceptable range compared to counts across 16 cutlines, except for AM 2-hr peak period Arterials. The validation also showed the model captures the diurnal traffic pattern across the 16 cutlines well. Figure 6-1 shows the titles and locations of the 16 cutlines.

Among the 16 cutlines, W-14 and R-04 are the most relevant to the I-205 Toll Project. Table 6-3 shows model volume comparison at the two cutlines for average weekday, PM 2-hr (4 to 6 p.m.), and AM 2-hr (7 to 9 a.m.). The validation shows the RTDM tends to over-estimate at both cutlines. Model estimated average weekday volumes at cutline W-14 are close to the counts (5% to 6% higher than the counts). On the other hand, the model overestimates daily volume at cutline R-04 by approximately 20%. To address any variance between modeled and observed volumes, the traffic projections used to develop revenue projections are adjusted to account for calibration error.

**C. Failure to include an analysis of Value Pricing/Regional Mobility Pricing.** The 2017 Oregon Legislature directed ODOT to implement congestion pricing on I-205 and I-5. ODOT’s current project documents indicate that it intends to implement Regional Mobility Pricing on both these roadways as early as 2025.<sup>3</sup> Congestion pricing would charge users of I-205 between 17 and 38 cents per mile traveled, according to ODOT documents.<sup>4</sup> ODOT has failed to incorporate any analysis of how the regional mobility pricing program will affect traffic levels on I-205.

It is highly likely that regional mobility pricing will significantly reduce traffic on I-205 in the base case below the levels estimated in the EA. By overstating the level of traffic in the “No-Build” case, the EA over-estimates the potential benefits associated with the “build” alternative, i.e. traffic levels and congestion will be lower and travel times will be shorter in the No-build than are claimed in the EA.

ODOT has the ability to forecast the effects of congestion pricing on traffic volumes and travel speeds on Portland Area interstate roadways. In fact, ODOT submitted as part of

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<sup>3</sup> ODOT, Regional Mobility Pricing Project, Project Schedule, <https://www.oregon.gov/odot/tolling/Pages/I-5-Tolling.aspx> (viewed April 7, 2023).

<sup>4</sup> ODOT, Portland Metro Area Value Pricing Feasibility Analysis, Final, Round 1 Concept Evaluation and Recommendations, Technical Memorandum # 3, 2018.



the I-5 Rose Quarter Supplemental Environmental Assessment a memorandum showing that the implementation of congestion pricing would significantly reduce traffic volumes and shorten travel times on I-5 in the No-Build scenario. ODOT's Rose Quarter "tolling sensitivity analysis memo" (included in the Rose Quarter Traffic Analysis Supplemental Technical Report) indicates that traffic in the No-build scenario would be much lower than indicated in the EA or SEA analyses<sup>5</sup>.

The I-205 Environmental Assessment omits any mention of the regional mobility pricing program (RMPP), which would impose pricing on other sections of I-205 immediately North and South of the project area, and which would also impose pricing on I-5 as well.

## **5. Failure to use appropriate analysis methods**

As noted in Section 4 of this comment, the EA acknowledges that the Kate model overestimates traffic on I-205. The EA claims that it has fixed the over-estimates from the Kate model. However, the EA provides no explanation of how model estimates were adjusted.

It appears that the authors of the EA failed to follow ODOT's own procedures for documenting any "post-processing" of model results. ODOT's Analysis Procedures Manual (APM) requires that analysts document any adjustments they make to model outputs, and do so in a way that makes the computations transparent to and replicable by others. The EA omits any explanation of how Kate model outputs were altered.

The Traffic Technical Report also indicates that ODOT altered the results of the Metro Kate Travel Demand model, what they call "post-processing."

Standardized methods described in the APM and the National Cooperative Highway Research Program Report 765 (NCHRP 765) were used to post-process raw model link volumes.

Attachment Y: Modeling Methodology and Assumptions for Environmental Assessment, page 17

ODOT has not only failed to follow its own procedures, but also those prescribed by the NCHRP in preparing and documenting its traffic estimates. Both the NCHRP handbook and ODOT's own "Analysis Procedures Manual" require that traffic volume estimates be documented in a way that reveals any weaknesses and allows third parties to fully understand assumptions, and duplicate. ODOT failed to follow either the practices spelled out in the professional literature for applying such methods or its own Analysis Procedures Manual<sup>6</sup>. Both

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<sup>5</sup> ODOT, Regional Mobility Pricing Sensitivity Analysis, July 21, 2022.(Supplemental Environmental Assessment, Traffic Technical Report, Appendix D).

<sup>6</sup> ODOT, Analysis Procedures Manual, <https://www.oregon.gov/odot/Planning/Pages/APM.aspx>, attached



of these call for providing spreadsheets or similar written calculations showing input data, describing assumptions, and generally enabling a third party to understand and replicate the calculations. The traffic technical report provides a screenshot of a single “sample” spreadsheet but does not provide the actual spreadsheets showing the computations that were used to produce the “post-processed” results. (Attachment Y: Modeling Methodology and Assumptions for Environmental Assessment, Table 55, page 98)

ODOT's own Analysis Procedures Manual<sup>7</sup> (which spells out how ODOT will analyze traffic data to plan for highway projects like the I-205, states that the details need to be fully displayed:

### 6.2.3 Documentation

It is critical that after every step in the DHV [design hour volume] process that all of the assumptions and factors are carefully documented, preferably on the graphical figures themselves. While the existing year volume development is relatively similar across types of studies, the future year volume development can go in a number of different directions with varying amounts of documentation needed. Growth factors, trip generation, land use changes are some of the items that need to be documented. If all is documented then anyone can easily review the work or pick up on it quickly without questioning what the assumptions were. The documentation figures will eventually end up in the final report or in the technical appendix.

The volume documentation should include:

- Figures/spreadsheets showing starting volumes (30 HV)
- Figures/spreadsheets showing growth factors, cumulative analysis factors, or travel demand model post-processing.
- Figures/spreadsheets showing unbalanced DHV
- Figure(s) showing balanced future year DHV. See Exhibit 6-1
- Notes on how future volumes were developed:
  - If historic trends were used, cite the source.
  - If the cumulative method was used, include a land use map, information that documents trip generation, distribution, assignment, in-process trips, and through movement (or background) growth.
  - If a travel demand model was used, post-processing methods should be specified, model scenario assumptions described, and the base and future year model runs should be attached

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<sup>7</sup> ODOT Analysis Procedures Manual, Chapter 6, attached



This is also essential to personal integrity in forecasting. The American Association of State Highway and Transportation Officials publishes a manual to guide its member agencies (including ODOT) in the preparation of highway forecasts. It has specific direction on personal integrity in forecasting. National Cooperative Highway Research Project Report, "Analytical Travel Forecasting Approaches for Project-Level Planning and Design," NCHRP Report #765<sup>8</sup> states:

*It is critical that the analyst maintain personal integrity. Integrity can be maintained by working closely with management and colleagues to provide a truthful forecast, including a frank discussion of the forecast's limitations. **Providing transparency in methods, computations, and results is essential.** . . . The analyst should document the key assumptions that underlie a forecast and conduct validation tests, sensitivity tests, and scenario tests—**making sure that the results of those tests are available to anyone** who wants to know more about potential errors in the forecasts.*

ODOT's traffic technical report lacks the spreadsheets and other documentation explaining how ODOT "post-processed" model results. This is a failure to adhere to the agency's own guidelines and undercuts the validity of the modeling results.

## **6. Failure to include tolling for the Abernethy Bridge in the No-Build scenario**

The traffic projections for I-205 in the No-Build scenario assume that there is no tolling to pay for the I-205 Abernethy Bridge. The Oregon Department of Transportation has already started construction on the Abernethy Bridge. The Oregon Legislature has determined as a matter of law, and the Oregon Department of Transportation has testified as a matter of policy, that the cost of the I-205 Abernethy Bridge will ultimately be paid for by tolling the bridge.

In 2017, the Oregon Legislature adopted a budget note to HB 5045 declaring that any revenue from value pricing roadways under HB 2017 would be dedicated to paying for the I-205 project:

### ***Budget Note***

*The Oregon Department of Transportation is directed to ensure an ongoing commitment to fully fund congestion relief on I-205, including but not limited to the Stafford Rd to Abernethy Bridge bottleneck. Pursuant to HB 2017, any value pricing revenue shall be dedicated to I-205. In the event that value pricing revenue is not sufficient, or should value pricing prove not to be a viable funding source, the agency shall report immediately to the Legislative Assembly on the funding issues*

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<sup>8</sup> NCHRP Report #765, attached.





*along with specifics on funding needs and options available to the Legislative Assembly to quickly remedy such funding gaps. An initial report shall be provided to the Joint Transportation Committee no later than the last legislative days in calendar year 2018.*

At the May 2018 meeting of the Legislature's Joint Transportation Committee, ODOT Deputy Director Travis Brouwer testified that the Department anticipated paying for the Abernethy Bridge project with tolls ("Alternative E") and assured the committee that federal approval of tolling for the reconstruction of the Abernethy Bridge would be straightforward but would be subject to a lengthy NEPA review. (May 23, 2018, at 1:28-1:30).

On December 6, 2018, at a meeting of the Oregon Transportation Commission, ODOT Region 1 Director Rian Windscheimer presented three alternatives for moving forward with the I-205 project, and called Alternative 1--which involved tolling--the "most likely" way of financing the project.

The Department's own [legislatively approved budget](#)<sup>9</sup> for the 2021-2023 biennium, enacted in July, 2021, specifically states:

*"HB 2017 . . . Requires the implementation of value pricing on I-5 and I-205 in the Portland metro area."*

This point was made specifically by the Chair of the Oregon Transportation Commission at the commission's March 2022 meeting, in which he stated that the Abernethy Bridge project could not be built without implementing pricing in the Portland area:

*"I think it comes down kind of to this simple conclusion, which is: we don't have tolling I don't see an alternative funding mechanism to do any of these. I don't think, I don't, we don't have the resources to build the Abernethy Bridge, the Rose Quarter project or the Interstate Bridge, without tolling."*

- Bob Van Brocklin, March 10, 2022, [Oregon Transportation Commission Meeting](#)<sup>10</sup>.

In May 2022, ODOT proceeded with construction of the Abernethy Bridge project, with reliance on a further federal determination that tolling would be adjudged in a separate, later Environmental Assessment project for the widening of I-205. The FHWA wrote:

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<sup>9</sup> ODOT's 2021-2023 biennium budget is available here <https://www.oregon.gov/odot/About/Budget/ODOT%202021-23%20Legislatively%20Adopted%20Budget.pdf>

<sup>10</sup> Chair Van Brocklin's comments at the March 2022 OTC meeting: <https://youtu.be/XblcgrAprVM?t=16190>





Recently signed into law, Oregon House Bill 3055 provides financing options that allow Phase 1a of the I-205: Stafford Road to OR 213 Improvements Project to be constructed beginning in the spring/summer 2022 without the use of toll revenue. Construction of the remaining phases of the I-205: Stafford Road to OR 213 Improvements Project will require toll revenue. The I-205 Toll Project is a separate project that would toll I-205 near the Abernethy and Tualatin River Bridges to raise revenue for construction of the remaining phases of the I-205: Stafford Road to OR 213 Improvements Project.

As Phase 1a is now advancing as a separate project with independent funding, the 2018 CE decision is being reduced in scope to include only Phase 1a (the "I-205: Phase 1a Project" or "Phase 1a Project").<sup>11</sup>

In June 2022, ODOT Administrator Brendan Finn assured legislators that the escalating cost of the Abernethy Bridge would be paid for, ultimately, with tolls:.

Representative Khanh Pham:

*Thank you. Thank you. So, Brendan, actually could you go back to the I-205 and the contract? I had a question about the budget increases for the Abernethy bridge project. There was a slide about the contract. . . . So my understanding is that in when we passed House Bill 2017, then the \$30 million that we funded that for the I-5 Rose Quarter project was going to start in 2022. And then in 2021, when when we passed HB 3055, that reallocated that \$30 million for the Rose Quarter project to also include the idea of I-205 construction as well as the toll program implementation and the I-5 bridge. So I was wondering if you could talk about the increased costs for the project because I know in 2018 ODOT was estimating it to cost about 250 million and now it looks like it's about 450 million now. So as the Abernethy bridge now absorbs all of that original \$30 million, and if so, for how many years? How is it impacting the other the funding for the Rose Quarter project as well?*

ODOT Administrator Brendan Finn:

*Yeah, Co-Chairs, Representative Pham. Good question. I'll unpack a little bit of that for you. House Bill 3055 did allow some financial flexibility with that \$30 million also*

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<sup>11</sup> Emily Kline, "Re-Evaluation of the Categorical Exclusion for the I-205: Stafford Road to OR 213 Improvements Project, May 4, 2022, page 3.



*to do some short term borrowing. **This project will be paid for through toll revenues.** The original estimate and what the bids came in we just heard from Mr. Lind, about what we're seeing out in the contracting community and this contract was also a victim to a lot of those same circumstances. So the price of steel, supply chain issues, and then some of the other risks that are associated with the in-water work window. There was an increase in the costs, and we were able to negotiate pieces of that down with Hewitt. You're about right as far as the amount we did program **\$495 million for this project. Again, to be repaid by the tolling program.***

The EA document itself acknowledges Finn's statement that toll revenue would be used to repay the HB 3055 funding.

*If tolling is approved upon completion of environmental review of the I-205 Toll Project, toll revenues could be used to pay back loans for Phase 1A.*

<sup>12</sup>Buried deep in the methodology section of the Traffic Technical report is a claim that asserts that tolling the Abernethy Bridge (Phase 1A) is not included in the "No Build" Scenario because the Abernethy Bridge could be paid for without tolling.

*. . . only Phase 1A of the Improvements Project will be included in the Project's No Build Alternative because ODOT has financing tools that allow this phase to move forward without reliance on toll revenues.<sup>13</sup>*

ODOT and FHWA now apparently intend to assert that it might be possible to pay for the Abernethy Bridge without using tolls. But the fact that the state Legislature and ODOT itself have said they will use tolls to finance the cost of the project means that tolls should be regarded as part of the "No Build" scenario. Also, as noted elsewhere in our comments, the EA fails to consider the impact of Regional Mobility Pricing (which is part of state and regional transportation plans) in its analysis of future traffic levels.

## **7. Improperly Combining Of Tolling and Freeway Widening in the EA**

ODOT and FHWA have illegally combined two different project alternatives with independent utility into a single project. The two project alternatives are (1) tolling of I-205 for congestion

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<sup>12</sup> Environmental Assessment, page 1-3, footnote 7, [https://www.oregon.gov/odot/tolling/Documents/I-205%20Toll%20Project%20Environmental%20Assessment\\_508.pdf](https://www.oregon.gov/odot/tolling/Documents/I-205%20Toll%20Project%20Environmental%20Assessment_508.pdf)

<sup>13</sup> Oregon Department of Transportation, Memo: Modeling Methodology and Assumptions for Environmental Assessment February 2023 , pages 91-92. [https://www.oregon.gov/odot/tolling/Documents/Appendix%20C\\_Attachment%20Y\\_I-205%20Toll%20Project%20Modeling%20Methods%20Memo\\_508.pdf](https://www.oregon.gov/odot/tolling/Documents/Appendix%20C_Attachment%20Y_I-205%20Toll%20Project%20Modeling%20Methods%20Memo_508.pdf)



management; and (2) adding lanes to I-205. The FHWA should include two separate build alternatives in the EA.

As noted above, the proposed build alternative actually consists of two separate projects, one of which creates induced travel demand (freeway widening) and one which reduces travel demand (tolling). In fact, the project's own benefit-cost analysis concedes that without pricing, freeway widening would induce additional travel. ODOT has combined two distinct projects—road pricing and freeway widening—into a single project. Nearly all of the supposed benefits from the project stem from the congestion reducing aspects of road pricing. In its Benefit Cost Narrative, ODOT notes:

*Demand management through **tolling significantly improves congestion outcomes** .*

*..*

*Value of Travel Time savings, or Vehicle Hours of Driving (VHD) benefits are calculated from traffic studies on pre-pandemic traffic levels and modeled traffic volumes **under the addition of tolling**. These traffic figures are provided by WSP USA and their Transportation Engineering team. Volume growth under the baseline is limited by congestion and lack of additional lanes, while **volume growth under the Build scenario sees slower growth over time due to the ability of tolling to manage demand**.*

*ODOT, Benefit Cost Analysis Narrative, 2022 (Emphasis supplied)*

If ODOT were to separately analyze these two project components, each of which has independent utility, a proper analysis would show that tolling alone has a much more favorable economic, social and environmental impacts than freeway widening. What ODOT has done is to combine tolling (which produces the congestion and pollution reduction benefits) with the freeway widening (which produces negative environmental and social effects). These two options should be examined separately, rather than combined in the EA.

Note: In making this comment, NMF and NCA believe that tolling the Abernethy Bridge should be considered as part of the No-Build alternative in the EA. If however, it is determined that tolling of the Abernethy Bridge is not part of the No-Build, then tolling of the Abernethy and Tualatin River Bridges should be treated as separate "Build" Alternatives in the EA.

## **7. Failure to acknowledge or analyze the impacts of induced demand**



ODOT/FHWA have failed to incorporate best available science on induced travel in its traffic modeling and EA analysis. Extensive published scientific research has demonstrated the concept of induced travel, also known as the "fundamental law of road congestion."<sup>14</sup>

The best available science shows that there is a unit elasticity of vehicle travel with respect to road capacity in urban areas. A one percent increase in road capacity tends to produce a one percent increase in vehicle travel. ODOT's traffic estimates contain no provision for incorporating induced travel into the calculations. ODOT's calculations therefore under-estimate traffic levels in the "build" scenario. As a result, the ODOT analysis overstates the traffic flow benefits of the project, and understates the costs from increased driving, pollution and crashes.

A recent review of transportation models used by state highway departments concluded that these models fail to include provisions for estimating induced travel and this causes them to underestimate the environmental effects of highway expansion projects.

*Despite strong evidence, the "induced travel" effect is often ignored, underestimated, or misestimated in the planning process, particularly in the assessment of the environmental impacts of roadway capacity expansions. Underestimating induced travel will generally lead to overestimation of the traffic congestion relief benefits a highway expansion project might generate, along with underestimation of its environmental impacts. A major reason that induced travel tends to be underplayed in environmental*

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<sup>14</sup> Goodwin, P.B. Empirical evidence on induced traffic. *Transportation* **23**, 35–54 (1996).  
<https://doi.org/10.1007/BF00166218>

Coombe, D. Induced traffic: what do transportation models tell us?. *Transportation* **23**, 83–101 (1996).  
<https://doi.org/10.1007/BF00166221>

Duranton, Gilles, and Matthew A. Turner. 2011. "The Fundamental Law of Road Congestion: Evidence from US Cities." *American Economic Review*, 101 (6): 2616-52.

Hymel, Kent, 2019. "If you build it, they will drive: Measuring induced demand for vehicle travel in urban areas," *Transport Policy*, Elsevier, vol. 76(C), pages 57-66.  
<https://www.sciencedirect.com/science/article/abs/pii/S0967070X18301720>

Hsu, Wen-Tai & Zhang, Hongliang, 2014. "The fundamental law of highway congestion revisited: Evidence from national expressways in Japan," *Journal of Urban Economics*, Elsevier, vol. 81(C), pages 65-76. <https://www.sciencedirect.com/science/article/abs/pii/S0094119014000126>

Miquel-Àngel Garcia-López, Ilias Pasidis, Elisabet Viladecans-Marsal, Congestion in highways when tolls and railroads matter: evidence from European cities, *Journal of Economic Geography*, Volume 22, Issue 5, September 2022, Pages 931–960, <https://doi.org/10.1093/jeg/lbab025>



*analyses is that travel demand models do not typically include all of the feedback loops necessary to accurately predict the induced travel effect.<sup>15</sup>*

ODOT has officially adopted an “Analysis Procedures Manual,” which, without evidence, dismisses the scientific evidence on induced demand and prohibits consideration of induced travel in Oregon transportation modeling.<sup>16</sup> This “flat earth” approach to transportation modeling violates NEPA’s requirement that agencies use the best available science in reaching their determinations.

Other state transportation departments have adopted explicit provisions for analyzing induced demand, with techniques developed in the scientific literature and with models subjected to independent expert peer review.<sup>17</sup> ODOT’s “head in the sand” approach to induced demand, and ODOT’s failure to include it in its analysis violates NEPA’s requirement that analysis be scientifically rigorous.

CEQ regulations provide:

*Agencies shall ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents. Agencies shall make use of reliable existing data and resources. Agencies may make use of any reliable data sources, such as remotely gathered information or statistical models. They shall identify any methodologies used and **shall make explicit reference to the scientific and other sources relied upon** for conclusions in the statement. Agencies may place discussion of methodology in an appendix. Agencies are not required to undertake new scientific and technical research to inform their analyses. Nothing in this section is intended to prohibit agencies from compliance with the requirements of other statutes pertaining to scientific and technical research.*

40 CFR § 1502.23 (Emphasis added).

The Environmental Assessment’s modeling fails to make reference to the scientific basis for its traffic analysis, and therefore fails to meet the requirements of the National Environmental Policy Act.

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<sup>15</sup> JMB Volker, AE Lee, S Handy, “Induced vehicle travel in the Environmental Review Process,” Transportation Research Record 2674 (7), 468-479. <https://doi.org/10.1177/0361198120923365> (attached)

<sup>16</sup> ODOT, Analysis Procedures Manual, <https://www.oregon.gov/odot/Planning/Pages/APM.aspx> (attached).

<sup>17</sup> CalTrans. Transportation Analysis Framework First Edition\* © 2020 California Department of Transportation. Evaluating Transportation Impacts of State Highway System Projects



## 8. Failure to significantly improve transit

That notion that we would spend over a billion dollars on an urban transportation project and provide no noticeable improvement for transit is a huge disappointment. Indeed, the fact that some transit connections will actually be slowed confirms that ODOT's only real interest appears to be in moving as many automobiles as quickly as they can.

## 9. Project is controversial

The introduction of tolling into the regional highway network has proven to be very controversial. It is generating opposition from multiple city governments, and others within the corridor. The response has included Bills introduced in the legislature, as well as efforts to gather signatures for a ballot measure. Given this level of controversy, a full Environmental Impact Statement is clearly in order.

## 10. Improper or inadequate traffic model calibration

ODOT has failed to calibrate its traffic modeling as mandated in FHWA NEPA Guidance. Travel models are known to have errors and inaccuracies. In order to minimize such errors, FHWA guidance<sup>18</sup> directs states preparing NEPA documents to validate their traffic modeling.

*In the context of a NEPA study, it is important for the study team to **focus any calibration and validation efforts that they undertake on the study area.** Typically, a regional travel demand model will have been adequately calibrated and validated at least at a regional level prior to adoption. While it is important for the study team to critically review the documentation of this effort, it is suggested that **more emphasis be placed on checks at the study area level.** It is suggested that the study team **scale their calibration and validation effort according to the scale of the analysis, such as its geographic scope.***

**Calibration** A meaningful calibration effort would include: . . .

- *Comparison of modeled traffic volumes with traffic counts both for individual roadway segments and at more aggregate levels such as throughout the study area*

ODOT's failure to undertake this required calibration of Metro's model is material because the Metro Model over-predicts peak hour north-bound travel on this section of I-5. This information

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<sup>18</sup> Federal Highway Administration, INTERIM GUIDANCE ON THE APPLICATION OF TRAVEL AND LAND USE FORECASTING IN NEPA, MARCH 2010, page 10. (Attached)



is contained in Metro's own model validation result. The traffic screenline corresponding to the I-205 freeway widening project project is "Cutline R-04.

According to Metro's validation report<sup>19</sup>, the Metro model overestimates PM peak hour northbound traffic at this cutline by 20 percent (Table 15). This over-estimation of traffic leads the model to predict more congestion than actually occurs, and means that the benefits of the project are exaggerated, and its environmental effects are understated.

## 11. Disclaimer invalidates "Level 2" Traffic Study

The EA includes and relies upon a "Level 2" traffic study performed by WSP to estimate the traffic levels in the Build and No-Build scenarios. The differences in traffic levels between the two scenarios purportedly serve as the basis for estimating the benefits and environmental and social impacts of the two projects.

The WSP report contains a substantial disclaimer. It specifically disallows reliance on this report by anyone other than the Oregon Department of Transportation. This means that the report is not something that can be relied upon by the FHWA. For that reason alone, the WSP report cannot and should not be relied upon as documentation in the EA.

Here are the principle statements in the disclaimer:

*This report and the subject traffic and revenue study analysis was prepared by WSP USA (WSP) for the benefit of the Oregon Department of Transportation, hereafter the Client, pursuant to a Professional Services Agreement with the Client, and this report is subject to the terms and conditions of that agreement and is meant to be read as a whole and in conjunction with this Disclaimer.*

\* \* \*

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<sup>19</sup> Metro, Kate Model Validation Report, August, 2017 (attached)





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\* \* \*

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Moreover, the disclaimer makes it clear that this work is not defensible as the best available science, as required by the National Environmental Policy Act.

## **12. Unsupported Value of Time Estimates Bias Traffic Projections**

The EA traffic modeling performed by WSP builds upon the Metro Kate regional travel demand model, and estimates the impact of tolling on travel behavior by applying a travel time penalty to tolled network links. In essence, the model treats tolled links as requiring longer travel times than otherwise untolled roadways, and models travel behavior accordingly. Estimates from such a model are highly sensitive to the value of travel time used in the model.

This is described in the Methodology Report (Appendix Y) to the Transportation Technical Report, page 29:

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<sup>20</sup> WSP, I-205 Toll Project, Level 2 Toll Traffic and Revenue Study Report, Revised October 2022, page viii.



### *Value of Travel Time*

*Monetary toll costs are represented as equivalent time penalties in the traffic models, based on estimated values of travel time. These values of time represent willingness to pay and differ depending on the modeled vehicle class. These “toll in minutes” were defined in such a way as to reflect a range of willingness to pay a toll for the different auto and truck vehicle classes. For the DTA model, the perceived time to cross a toll link or segment depended on the simulated travel time plus the value of time and toll cost in minutes for the specific vehicle class.*

We know from earlier work performed by the ODOT that this kind of “Level 2” modeling, which uses excessively high values of travel time, significantly under-estimates the behavioral effects of tolls on travel. Specifically, excessively high values of travel time produce low time penalties in the travel model, which depress the behavioral response to tolling. This leads the level 2 model to overestimate the amount of traffic on the tolled roadway, and under estimate trip suppression and diversion.

In the case of the Columbia River Crossing, the Level 2 toll model prepared for the project using high values of travel time estimated that 178,000 vehicles per day would use a tolled roadway. ODOT commissioned CDM Smith to prepare an investment grade analysis of the same project.

<sup>21</sup>

As part of that analysis, CDM Smith reappraised the appropriate value of time to be used in modeling, based on its experience in predicting observed travel behavior. The CDM Smith analysis came up with **substantially** lower values of travel time.

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<sup>21</sup> CDM Smith, Columbia River Crossing Investment Grade Analysis, 2013. Page 4-13



Here are the WSP Level 2 estimates of value of time in 2010\$:

**Table 31. Recommended Value-of-Time Assumptions with Rationale (2010\$)**

Vehicle Class	Income Segmentation	Peak VOT (\$/hour)	Off-Peak VOT (\$/hour)	Rationale
Single-Occupancy Vehicle (SOV) Auto	Low Income (<\$25K)	\$8	\$6	<ul style="list-style-type: none"> <li>Base VOT calculated as 60% of hourly income for top of income bracket (\$25,000) to reflect higher incomes of vehicle owners.</li> <li>Peak VOT calculated as base VOT times 1.1 and off-peak VOT calculated as base VOT times 0.9 to account for different trip purpose mix.</li> <li>Additional 1.05 factor applied to peak VOT to account for reliability.</li> </ul>
	Medium Income (\$25K–\$100K)	\$17	\$14	<ul style="list-style-type: none"> <li>Base VOT calculated as 50% of hourly income for midpoint of bracket (\$62,500).</li> <li>Peak VOT calculated as base VOT times 1.1 and off-peak VOT calculated as base VOT times 0.9 to account for different trip purpose mix.</li> <li>Additional 1.05 factor applied to peak VOT to account for reliability.</li> </ul>
	High Income (>\$100K)	\$22	\$17	<ul style="list-style-type: none"> <li>Base VOT calculated as 30% of hourly income for representative income of \$130,000 for the bracket.</li> <li>Peak VOT calculated as base VOT times 1.1 and off-peak VOT calculated as base VOT times 0.9 to account for different trip purpose mix.</li> <li>Additional 1.05 factor applied to peak VOT to account for reliability.</li> </ul>

And here are the CDM Smith Investment Grade Analysis estimates of value of time. These are in 2013\$.



**Table 4-3 Model Weekday Single Occupancy Vehicle Values of Time (in 2013 Dollars)**

Time Period	Income Level	VOT (\$ per hour)
Peak	Low	\$9.62
	Medium	\$12.58
	High	\$14.82
Off-peak	Low	\$8.31
	Medium	\$10.86
	High	\$12.79

X

This table compares the WSP Level 2 estimates to the CDM Smith selected values, with both estimates expressed in 2010\$ (converted according to the the Implicit Price Deflator for Personal Consumption Expenditures (IPD/PCE)).

Values of Travel Time by Income Group (All Values in 2010\$)

	CDM Smith	WSP	Variance
Low Income	9.09	8.00	-12%
Middle Income	11.89	17.00	43%
High Income	14.01	22.00	57%

For example, whereas ODOT’s level 2 analysis used a value of time of \$17.00 per hour (\$2010, middle income traveler), CDM Smith used a value of \$11.89 per hour (\$2010, middle income traveler). WSP chose slightly lower levels of value of time for low income travelers, but much higher values of time for middle and higher income travelers who make up nearly 90 percent of travelers on I-205. WSP overstates the value of time by middle income travelers by 43 percent and high income travelers by 57 percent, compared to CDM Smith’s selected values. Overall, ODOT’s Level 2 Analysis uses values of travel time that are on average 44 percent higher than those used in the CDM Smith analysis. The use of overstated values of time lead the Level 2 Analysis to systematically overstate traffic levels on I-205, and to understate diversion to other routes.



When CDM Smith used these lower travel time values in its version of the same regional travel demand model, it produced significantly lower estimates of traffic levels on the I-5 Columbia River Crossing than the Final Environmental Impact Statement (i.e. less than 100,000 vehicles per day). The CDM Smith study found that tens of thousands of vehicles would divert to a non-tolled I-205 Glenn Jackson Bridge, producing gridlock--something that was not predicted in the project's Final Environmental Impact Statement. The Oregonian wrote:

*Building the \$2.8 billion Columbia River Crossing would dramatically shift metro-area traffic patterns for decades, slashing future traffic on a new Interstate 5 bridge to 1990s-era levels but increasing traffic at the Interstate 205 crossing by more than 40,000 trips each day. Those outcomes can be found from a close read of an investment-grade traffic and revenue analysis released by the Oregon Department of Transportation this week. CRC project officials confirmed The Oregonian's findings on Friday.*

*The new projections differ starkly from a 2011 study that warned of impending traffic doom without a new I-5 span.<sup>22</sup>*

Investment grade analyses routinely produce much more accurate estimates of future travel behavior than the Level 2 analyses. ODOT has planned to prepare an Investment Grade Analysis in the coming year. An Investment Grade Analysis would come much closer to accurately predicting future travel levels on I-205 and other roadways in the project area. Promotional forecasts prepared by sponsoring agencies tend to systematically over-estimate traffic levels on tolled facilities.<sup>23</sup> Credit analysis firm Fitch undertook a systematic analysis of toll road revenue forecasts and found regular and serious over-estimates to traffic and revenue. Fitch warned over-estimating revenue is endemic in the industry and is a key cause of financial problems for toll-financed projects. The Fitch message, summarized in the trade publication, Toll Roads News, is clear and stark:

*They call demand forecasting "a key vulnerability," adding: "The probability of over-estimation remains high despite decades of experience with forecasting demand on transport projects. Many greenfield projects over the years across many jurisdictions have suffered from this... While other risks have been manifested in many cases,*

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<sup>22</sup> Brad Schmidt, Columbia River Crossing: Building new Interstate 5 bridge would increase future traffic on Interstate 205 by more than 40,000 vehicles daily, The Oregonian, Jan. 11, 2014, page A1. [https://www.oregonlive.com/portland/2014/01/columbia\\_river\\_crossing\\_buildi.html](https://www.oregonlive.com/portland/2014/01/columbia_river_crossing_buildi.html)

<sup>23</sup> Robert Bain, Toll Road Traffic and Revenue Forecasts, An Interpreter's Guide, 2009. <https://www.amazon.com/dp/0956152716?tag=doctorwhoon0e-20&camp=213381&creative=390973&linkCode=as4&creativeASIN=0956152716&adid=0RF7W93ZSCNECBXQVNCE&>



*defaults on debt have largely been driven by under-performance relative to original projections.*"<sup>24</sup>

An Investment Grade Analysis would constitute best available science, whereas the existing WSP Level 2 analysis does not. In addition, an Investment Grade Analysis would not be subjected to the invalidating caveats contained in the WSP disclaimer. Also, an investment grade analysis is presented to the federal government and prospective investors as an independent and authoritative estimate of future traffic and revenue on which they can rely in making investment decisions.

The EA's selected values of time are not supported by actual practice in predicting traffic levels on tolled roadways. The EA values of time significantly over-state traveler willingness to pay for tolled roads as opposed to non-tolled routes, and therefore overstate traffic levels on a tolled I-5, and over-state likely toll revenue, and understate traffic on non-tolled arterial roads.

### **13. Traffic modeling failed to include an analysis of trip suppression due to tolling.**

The I-205 modeling assumed that residents would continue to take exactly the same number of trips whether I-205 was tolled or not. In reality, both the income effect and the price effect of tolling would be to reduce the number of trips. Households would have less income due to paying tolls, and therefore would have less resources to take trips, and also would face higher prices for trip taking on tolled roads.

Both factors will lead to less trip taking. Both the income effect and the price effect are non-trivial: The income effect of tolling is to reduce average household income in the project area by about \$600 per year, according to the Environmental Assessment, which amounts to about an eight-tenths of one percent reduction in household income.<sup>25</sup> The price effect is to add \$8.80 to a peak hour trip between West Linn and Tualatin, which is likely a 90 percent increase in price for a 15 mile round trip (calculated at 60 cents per mile).

The state of the art or "best available science" in predicting traffic effects of road tolling is to incorporate an analysis of trip suppression. CDM Smith did exactly that for ODOT in the

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<sup>24</sup> Toll Roads News, <http://www.tollroadsnews.com/node/6769>, (October 7, 2013), emphasis added.

<sup>25</sup> Economics Technical Report, Table 6-11, page 33



Investment Grade Analysis of the Columbia River Crossing. That analysis found trip suppression would cause a 10 percent or greater decline in bridge traffic:

*A trip suppression statistical model was developed as part of the stated preference survey analysis, driven from the passenger car participants' responses. The amount of trip suppression depends on a number of factors including trip type (trip purpose and time of day) trip distance and traveler income. The results showed that trip suppression rates increase sharply for higher tolls, particularly for non-work trip purposes. . . . a Monte Carlo simulation process was used to develop an aggregate trip suppression rate for river crossing traffic, found to be approximately 9.7 percent for FY 2016, 10.1 percent for FY 2020, 14.1 percent for FY 2022 and 13.1 percent for FY 2036.<sup>26</sup>*

The failure to include an analysis of trip suppression due to tolling means that the I-205 modeling over-estimates the demand for additional capacity on I-205 in a tolled environment.

## **Conclusion**

No More Freeways and Neighbors for Clean Air reiterate our insistence that the full impact of this massive proposed freeway expansion can only be understood in the context of a full Environmental Impact Statement, and that such a study must meaningfully consider the possibility that congestion pricing without expansion is a better policy solution for our community. We vigorously agree with the agency's stated goal of making investments in seismically resilient infrastructure that reduces traffic congestion and improves traffic safety. We're troubled by the fact that the agency flat out refuses to conduct any coherent analysis of whether spending hundreds of millions of dollars on additional lanes of freeway (while having no discernable strategy to raise funds for the 700 other seismically vulnerable bridges across the state) is in fact the best way to achieve those desired outcomes.

We wish to once again reiterate that it is regrettable that this proposed freeway expansion has sowed unnecessary rifts between community leaders who truly have more in common than ODOT's deliberately divisive tactics would suggest. As advocates we want to see robust investments in green infrastructure, investments that will generate tens of thousands of green collar jobs. Clackamas County and our state as a whole desperately needs investment in our streets and transportation network.

In light of soaring carbon emissions, skyrocketing traffic fatalities and a growing maintenance backlog, NMF and NCA again point out that costly, ineffective freeway megaprojects steal time,

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<sup>26</sup> CDM Smith, Columbia River Crossing Investment Grade Analysis, 2013, pages 4-13 to 4-14.





money and political capital that our state instead should be spending on improving transit service, safety investments in ODOT's dangerous urban arterials, and building out a regional intercity rail system. NMF and NCA pledge to continue to champion investments in a green transportation system in line with our values, and with whatever policy reforms ensure Oregon's transportation investments create an optimal number of family-wage jobs and careers.

**The most appropriate course is a full EIS for ODOT's multiple projects for the entire set of the \$15 billion worth of proposed freeway expansions envisioned in ODOT's Urban Mobility Strategy.** Future generations will judge us not just from what we build and create, but on what we retire. NMF and NCA believe that the paradigm in which ODOT bullies community groups and state legislators into accepting their expensive, toxic, polluting, ineffective expansions in their neighborhoods must be retired.

Anything less than a full Environmental Impact Statement that studies alternatives to freeway expansion on the proposed I-205 widening is grossly inappropriate and negligent, especially in a state with Oregon's laudable history of land use leadership and environmental stewardship. We hope the federal government will recognize the obvious shortcomings in this terrible proposal and demand that Oregon's transportation agency reform itself to invest in healthier, climate-smart, cost-efficient infrastructure.

Climate leaders don't widen freeways.