Ten unanswered questions about the IBR Freeway widening project

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https://cityobservatory.org/ten-unanswered-questions-about-the-ibr-boondoggle/

The Oregon and Washington Legislatures are being asked to accede to the "modified locally preferred alternative" for the I-5 Bridge Replacement (IBR) Project, an intentionally misnamed, $5 billion, 5 mile long, 12-lane wide freeway widening project between Portland and Vancouver, Washington.

There's a decided rush to judgment, with almost many of the most basic facts about the project being obscured, concealed, or ignored by the Oregon and Washington Departments of Transportation. As with the failed Columbia River Crossing, they're trying to pressure leaders into making a decision with incomplete information. Here are ten questions that the IBR project has simply failed to answer. We've offered our own insights on the real answers, but before the state leaders take another step, they should satisfy themselves that they know the real answers to each of these questions.

1. How much will it cost?

Conspicuously absent from IBR presentations is any clear statement of what the project is likely to cost. It has been more than 18 months since the project released a warmed over version of the cost estimates from the Columbia River Crossing indicating the project could cost $4.8 billion. But this estimate is based on an update of old CRC estimates, rather than a new, bottom-up cost estimate of the current project. Already, the IBR team has decided to rebuild the North Portland Harbor bridge which will add an estimated $200 million to the project. Moreover construction inflation has accelerated in recent months; bids for the Abernethy Bridge project in Portland came in almost 40 percent higher than forecast. Similar cost overruns on the IBR would add more than $2 billion to the price tag.

Real Answer: The IBR is likely to be a $5-7 billion project

2. Who will pay for it?

Also missing from the IBR presentation is a definitive statement of the sources of funds to pay for the project. For starters–and just for starters–the project says Oregon and Washington will each be expected to contribute $1 billion. There's a considerable amount of vague hand-waving about federal support, but most federal money in the Infrastructure bill is allocated by formula, and comes to the two states

whether they build this project or not; and so spending this money on the IBR, rather than fixing the multi-billion dollar backlog of other bridge repairs, comes at a real cost to the states. What is clear is that a third or more of the IBR's costs will have to be recouped by charging tolls to bridge users, and that the two states, and no one else, will be on the hook for any cost overruns and any revenue shortfalls. And cost overruns are hardly conjecture: The I-5 Rose Quarter Freeway widening project, estimated to cost $450 million five years ago, is now likely to cost as much as $1.45 billion according to ODOT.

*Real answer: Oregon and Washington have **unlimited liability** for project costs including cost overruns and toll revenue shortfalls.*

3. How high will tolls be?

IBR staff have said next to nothing about what level of tolls will be charged for bridge users. Studies prepared for the Columbia River Crossing showed that tolls would have to be a minimum of $2.60 for off peak users and $3.25 for peak travel, plus surcharges for those who don't buy transponders, which would push peak period car tolls over $5.00 each way. Trucks would pay 5 times as much as cars, with peak period tolls topping $18.

IRB Truck Toll: $16-18 each way

Table 6-2 Assumed Account Based Toll Rate Schedule (with transponder)

Fiscal Year	Weekday								Weekend	
	5-6AM	6-7AM	7-9AM	9-10AM	10AM-3PM	3-6PM	6-7PM	7-8PM	8PM-5AM	5AM-8PM	8PM-5AM
6-Axle											
2022-60	$13.00	$14.65	$16.25	$14.65	$13.00	$16.25	$14.65	$13.00	$13.00	$13.00	$13.00

Table 6-3 Assumed Non-Account Based Toll Rate Schedule (no transponder)

Fiscal Year	Weekday								Weekend	
	5-6AM	6-7AM	7-9AM	9-10AM	10AM-3PM	3-6PM	6-7PM	7-8PM	8PM-5AM	5AM-8PM	8PM-5AM
6-Axle											
2022-60	$14.77	$16.42	$18.02	$16.42	$14.77	$18.02	$16.42	$14.77	$14.77	$14.77	$14.77

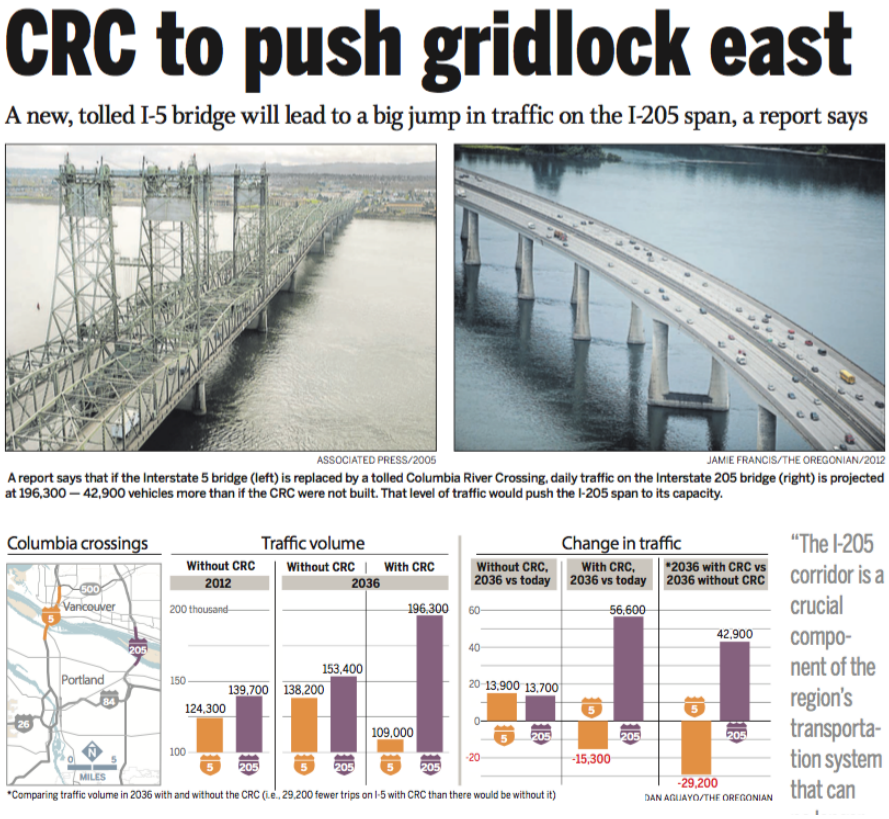
Knowing what the toll levels will be is essential to understanding the economic impacts of the bridge, as well as accurately forecasting future traffic levels. Experience in other states has shown that even an $1 or $2 toll could permanently reduce traffic to half of its current levels, eliminating the need to add any capacity to

the I-5 crossing. Before they move ahead with the project, shouldn't the public and its leaders know how much will be charged in tolls?

Real answer: Tolls will be $2-3 each way, and highest at peak hours, costing regular commuters more than $1,000 per year.

4 Will other bridges and highways be tolled to avoid gridlock?
If just the I-5 bridges are tolled, ODOT and WSDOTs own consultants predict that this will produce gridlock on I-205. IBR staff have made vague statements claiming to have looked at tolling other roadways at the same time. But unless parallel routes like the I-205 are also tolled, the traffic claims made for the IBR are simply invalid. If the region is serious about tolling and avoiding gridlock, it needs to adopt a comprehensive tolling strategy before it commits to a multi-billion dollar freeway widening project.

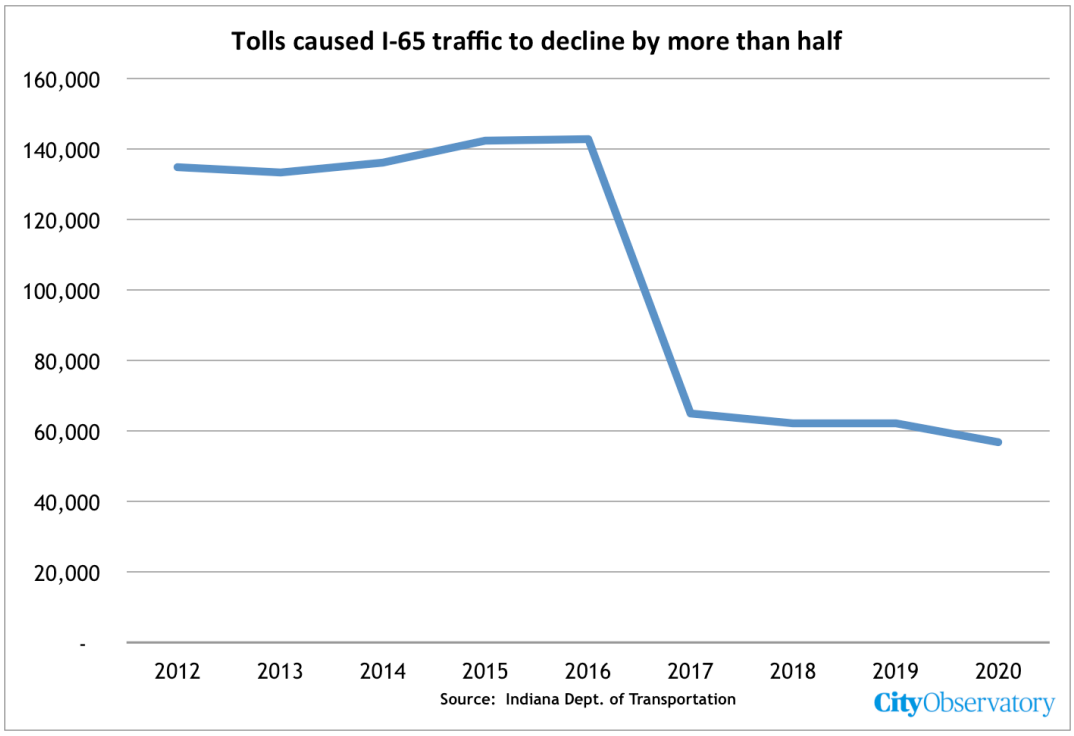
Technical work done for the CRC project, reported on page one of the Oregonian in 2014, indicated that tolling I-5 would produce gridlock on I-5.



The Oregonian, Page 1, January 11, 2014, reporting on ODOT's own analysis

Tolling will dramatically affect the traffic levels on I-5 and I-205. The best evidence is that tolling the region's freeways would virtually eliminate the need for additional capacity expansion. ODOT's own congestion pricing consultants showed that a comprehensive system of road pricing would eliminate most metro area traffic

congestion, without the need to spend billions on added capacity. We know from experience in other cities that tolling after adding capacity simply leads to wasting billions of dollars on roadways that aren't used because travelers don't value them. In Louisville, Kentucky, two state DOTs doubled the size of the I-65 bridge—from six to 12 lanes—over the Ohio River that carried almost the same traffic as the I-5 Columbia River Bridges. After construction they started charging a $1-$2 toll per crossing, and traffic fell by half. The same thing would likely happen here.



Real Answer: Unless we toll the I-205 bridge as well, the I-5 bridge will be under-utilized, and I-205 will have gridlock. The two states and the Portland region need to decide on a toll system before its squanders billions on un-need highway capacity, and goes deeply into debt to repay bonds for capacity that isn't used.

5. What will it look like?

Despite spending more than two and a half years and tens of millions of dollars on designing the project, the IBR has yet to produce any renderings showing what the project would look like to human beings standing on the ground in Vancouver or on Hayden Island. The bridge will be 150 feet tall as it crosses the Columbia River and will have lengthy approach ramps, and extensive elevated freeway sections over Vancouver and Hayden Island, with substantial visual and noise impacts. But you would never know it from the project's presentations, which if they show the bridge and freeway expansion at all, show it from an aerial view that could be seen only from flights over Portland International Airport. The project's presentation to a

joint legislative committee in April contains no illustrations of what is to be built at all.

City Observatory has obtained, via public records request, the 3D models created by IBR to show the size and location of the proposed I-5 Bridge. The following image shows what the proposed I-5 bridge would look like, compared to the existing bridge. It would be dramatically taller and wider, and would loom over downtown Vancouver. It's relatively easy to produce images showing how the replacement bridge would affect Vancouver. Why hasn't the IBR with its extensive budget produced any such images?

Real Answer: The I-5 replacement bridge and approaches will tower over downtown Vancouver and Hayden Island.

6. How long will the trains take?

A key part of the project is a plan to add light rail service between Portland's Expo Center and downtown Vancouver. The IBR project asserts that there will be huge demand for travel on light rail. But light rail is relatively slow. Unless light rail is faster than car travel or express buses, it's unlikely to attract many riders. Currently, Tri-Met's Yellow line takes 29 minutes to get from the Expo Center to downtown Portland. The CRC FEIS projected that it would take light rail trains about 6 minutes to get from Mill Plain Boulevard across a new I-5 bridge to the Expo Center; together this means it will take at least 35 minutes via light rail to reach downtown Portland from Vancouver. That's more than 10 minutes longer than it takes current C-Tran express buses, traveling in morning, peak hour traffic, to travel between 15th and Broadway in Vancouver to SW 5th and Alder in Portland—a 7:56

AM bus leaving Vancouver reaches downtown Portland at 8:20. Also: with added capacity on I-5 and tolling of I-5, future express buses would travel even faster than they do today, so light rail would likely be at an even greater time disadvantage than it is now. The information provided by the IBR contains no explanation of how a slower train is going to attract more riders than a faster bus or why BRT would perform worse than LRT in this corridor.

Real Answer: The LRT extension to Vancouver will be considerably slower than today's buses.

7. How can traffic models predict more no-build traffic on a bridge that is already at capacity?

The I-5 bridges reached capacity almost two decades ago, and can't handle additional traffic, but ODOT's model apparently predicts that traffic will continue to grow across the bride even though there's no capacity. This is a classic example of a broken model that in the words of national modeling expert Norm Marshall "forecasts the impossible." ODOT's own consultants, CDM Smith, said in 2013 that the I-5 bridge could handle no more peak traffic due to capacity constraints:

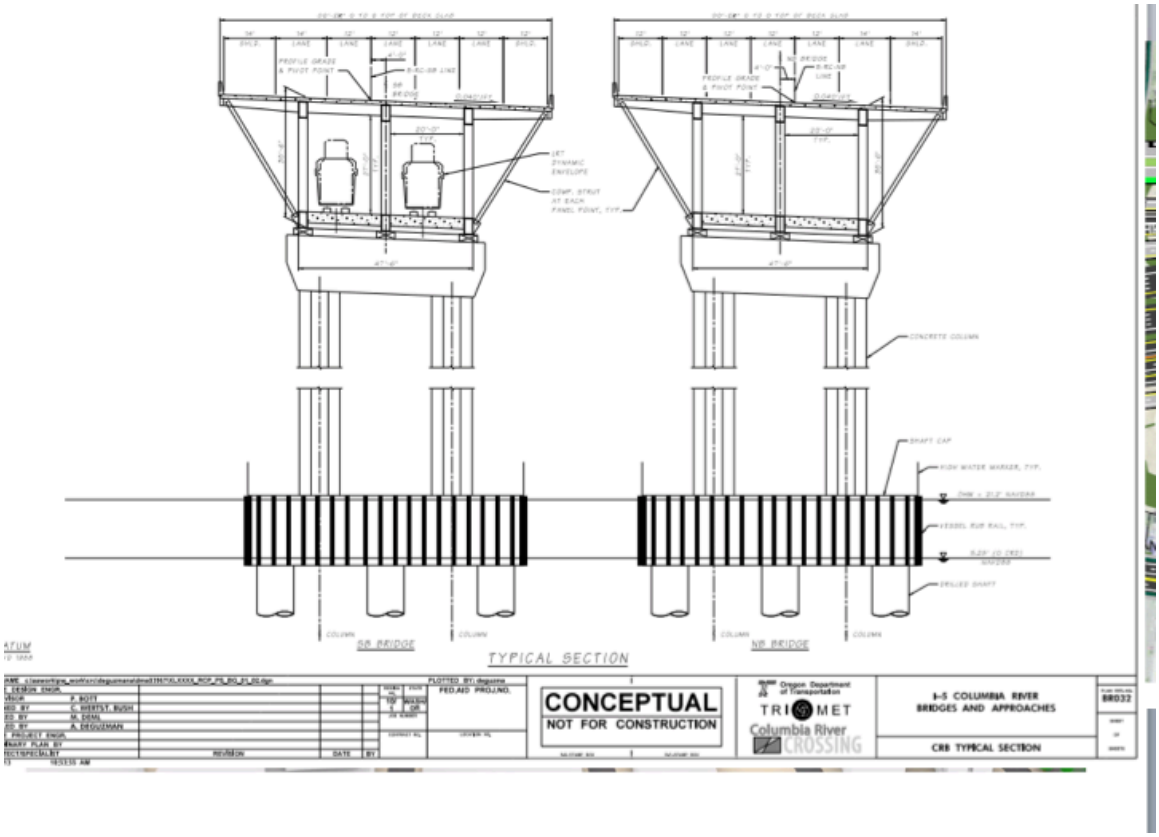
Traffic under the existing toll-free operating condition on the I-5 bridge reached nominal capacity several years ago, especially considering the substandard widths of lanes and shoulders on the facility. The I-5 bridge has little or no room for additional growth in most peak periods, and capacity constraints have limited growth over the last decade.

The IBR's own modelers admitted that traffic growth on I-5 has been limited due to the bridge being at capacity and congested. Yet they've created a fictitious "no build" scenario in which traffic continues to increase, essentially because it has no meaningful feedback loops to adjust travel demand to reflect how humans actually respond in the face of congestion.

Real Answer: ODOT is using flawed models that overstate no-build traffic and pollution, and conceal the true environmental impact of freeway expansion

8. How wide will the bridges be?

The IBR team describes the I-5 Bridges adding either two or four so-called "auxiliary lanes" to the existing six freeway lanes on I-5 through the project area. But the project hasn't revealed how wide the structures are that its actually building. In the project's last iteration, the "Columbia River Crossing", the project said they reduced the size of the bridge from twelve lanes to ten in response to objections to its width from local leaders, but in fact, public records requests showed that they didn't reduce the physical size of the bridges (or other structures) at all. The supposed "ten lane" bridge was 180 feet wide, just as was the proposed "twelve lane" bridge.



The cryptic information provided by the IBR says that its so-called 10-lane bridge would be just as wide as the CRC (180 feet), and the so-called 8 lane bridge ("one auxiliary lane") would be just 16 feet narrower ("2013 LPA Minus 16 Feet"), which works out to 164 feet wide. With standard-width 12 foot wide freeway lanes, this 164 foot wide bridge would accommodate ten traffic lanes (120 feet), with 11 foot shoulders on either side of the travel lanes, or as many as twelve travel lanes (144 feet) with five foot shoulders on either side of the twelve travel lanes). (Alternatively, the 164 foot width would allow construction of 12 travel lanes with 2 foot wide left shoulders and 8 foot wide right shoulders, which would be common, if not generous for an urban bridge).

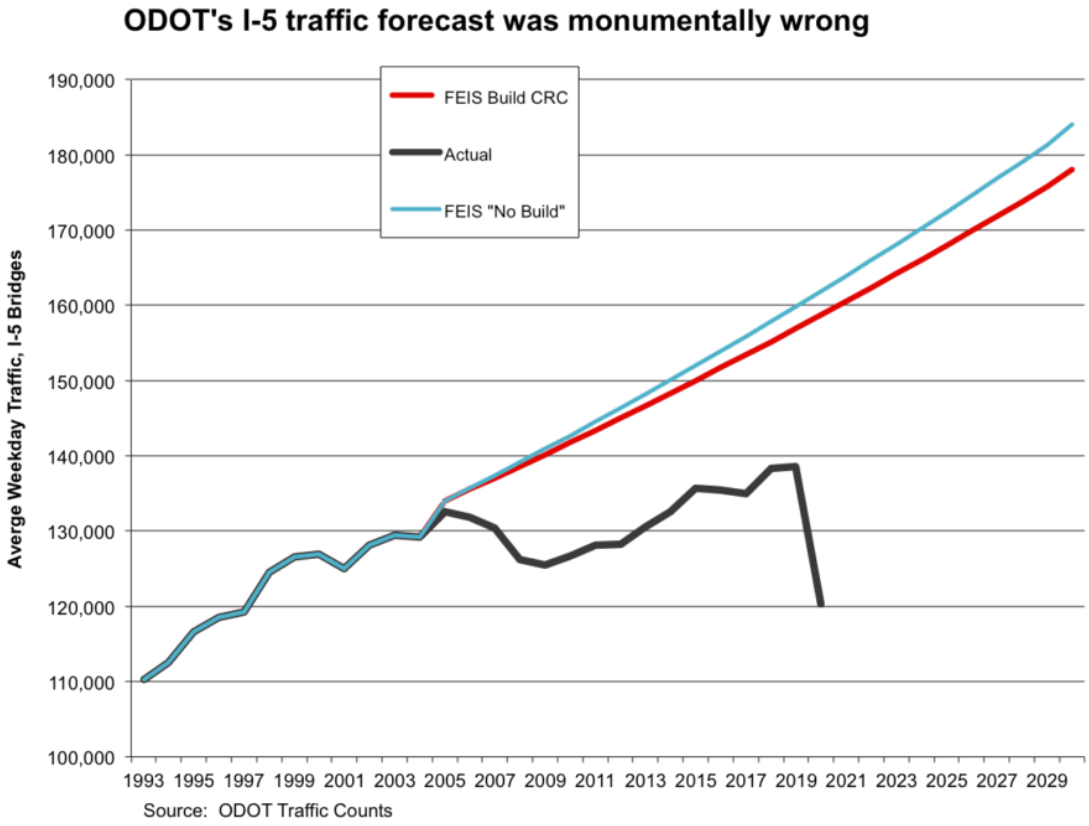
When it comes to bridges or freeway capacity, ignore how many "lanes" ODOT and WSDOT claim they're building, and look at how wide the structures are. They've repeatedly used this deceptive tactic to intentionally conceal the true width and environmental impact of their projects.

Real Answer: Regardless of how many lanes IBR claims it is building, its actual plans provide capacity for more, in this case a 10 or 12 lane bridge.

9. How many cars will use the bridge?

The primary argument for the IBR is that it is needed to carry a growing number of vehicles crossing the Columbia River. But completely absent from any of the

project's materials is any specification the volume of traffic the bridge will carry. The project makes claims about travel times and traffic delay, but can't possibly have come up with those estimates without coming up with estimates of the number of cars that will use the bridge. It specifically suppressed this information to undercut the public's ability to understand–and ask questions about and criticize the modeling. And we know that the project's earlier modeling done for the Columbia River Crossing was simply wrong. It predicted that traffic would grow by 1.7 percent per year on I-5 between 2005 and 2030; in fact, through 2019, traffic grew by only 0.3 percent per year. This chart shows the average daily traffic on I-5 as predicted by the CRC (blue: no-build, red build) and actual, from ODOT's own traffic records (black). We can't see how IBR's new modeling compares to these figures, because they've simply refused to publish any average daily traffic totals.

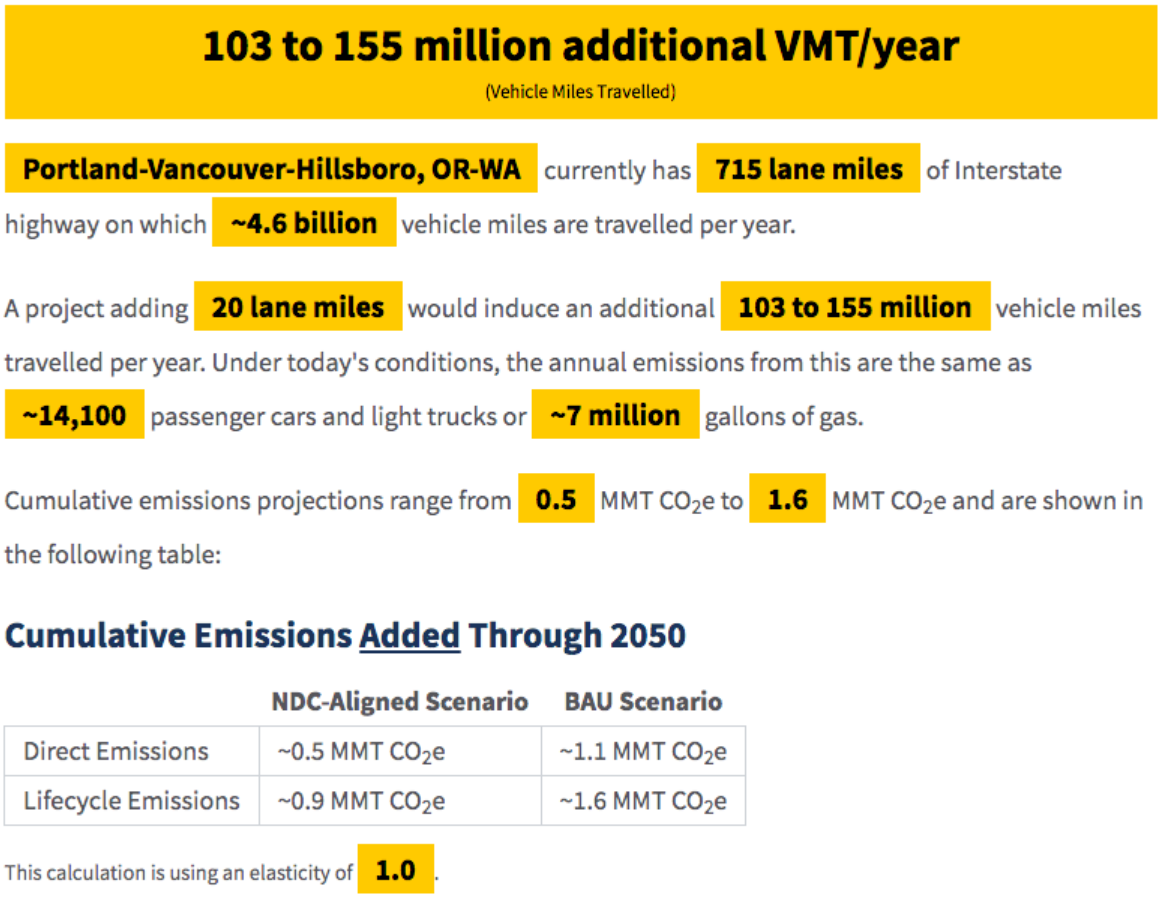


The models used by IBR systematically over-estimate travel in the No-build scenario and underestimate, if not completely ignore, the additional traffic induced by adding more lanes. It's impossible to assess the project's claims about traffic performance, environmental impacts, or financial viability with out transparent and accurate estimates of the number of vehicles that will use the bridge.

Real Answer: IBR uses flawed models which overstate the need for freeway capacity to justify un-needed and expensive freeway widening.

10. How will a wider freeway reduce carbon emissions?

The IBR material makes the specious claim that it will result in lower emissions, based on the false claim that decreasing traffic congestion will reduce vehicle idling in traffic, and that the bridge will have a higher share of transit passengers (something which it cannot explain–see #6 above). The RMI Shift induced travel calculator estimates that adding lanes to the I-5 bridge could increase greenhouse gas emissions hundreds of thousands of tons per year.



103 to 155 million additional VMT/year

(Vehicle Miles Travelled)

Portland-Vancouver-Hillsboro, OR-WA currently has **715 lane miles** of Interstate highway on which **~4.6 billion** vehicle miles are travelled per year.

A project adding **20 lane miles** would induce an additional **103 to 155 million** vehicle miles travelled per year. Under today's conditions, the annual emissions from this are the same as **~14,100** passenger cars and light trucks or **~7 million** gallons of gas.

Cumulative emissions projections range from **0.5** MMT CO_2e to **1.6** MMT CO_2e and are shown in the following table:

Cumulative Emissions Added Through 2050

	NDC-Aligned Scenario	BAU Scenario
Direct Emissions	~0.5 MMT CO_2e	~1.1 MMT CO_2e
Lifecycle Emissions	~0.9 MMT CO_2e	~1.6 MMT CO_2e

This calculation is using an elasticity of **1.0**.

Real Answer: Expanded freeway capacity leads to more driving and more greenhouse gas emissions.