

**To:** I-5 Bridge Committee Members  
**From:** Sam Churchill, Hayden Island  
**Re:** Comments for October 1, 2020 meeting  
**Date:** October 1, 2020

Thank you for this opportunity to comment on plans for a possible I-5 bridge replacement. I believe, as a community, we have the unique opportunity to plan for the long term, much like the original planners of the I-5 bridge had, more than 100 years ago.

Most people agree that **replacing the I-5 bridge is a reasonable goal. But reducing congestion is important, too.** When you can't add more than 3 lanes, what's to be done?

We need a plan that makes mass transit more convenient, faster and cheaper than driving.

Transportation studies show **MORE LANES = MORE TRAFFIC. Making mass transit faster, cheaper and more convenient than driving should be a primary goal.** Current plans for **Bus Rapid Transit, Light Rail, and High Occupancy Lanes don't cut it.** They're NOT faster, they're NOT cheaper and they're NOT more convenient than driving.



I believe the committee should explore three options that **EVERYONE** has heard about.

- 1. Electric shuttles**
- 2. EV tunnels.**
- 3. Shared EVs**

## **1. ELECTRIC SHUTTLES.**

EVs WILL be moving people on today's roads...long before a bridge is built. Electric shuttles can pick people up and drop them off...at a Max line. An autonomous fleet - using Tesla Model 3s - is expected to have a LOWER cost per passenger mile -- \$.40 per mile - WAY cheaper than the \$1 per passenger mile for a bus. Why would anyone take the bus? It's expensive. Slow. Autonomy arrives now -- as soon as December 2020. Let's plan ahead. Two months.

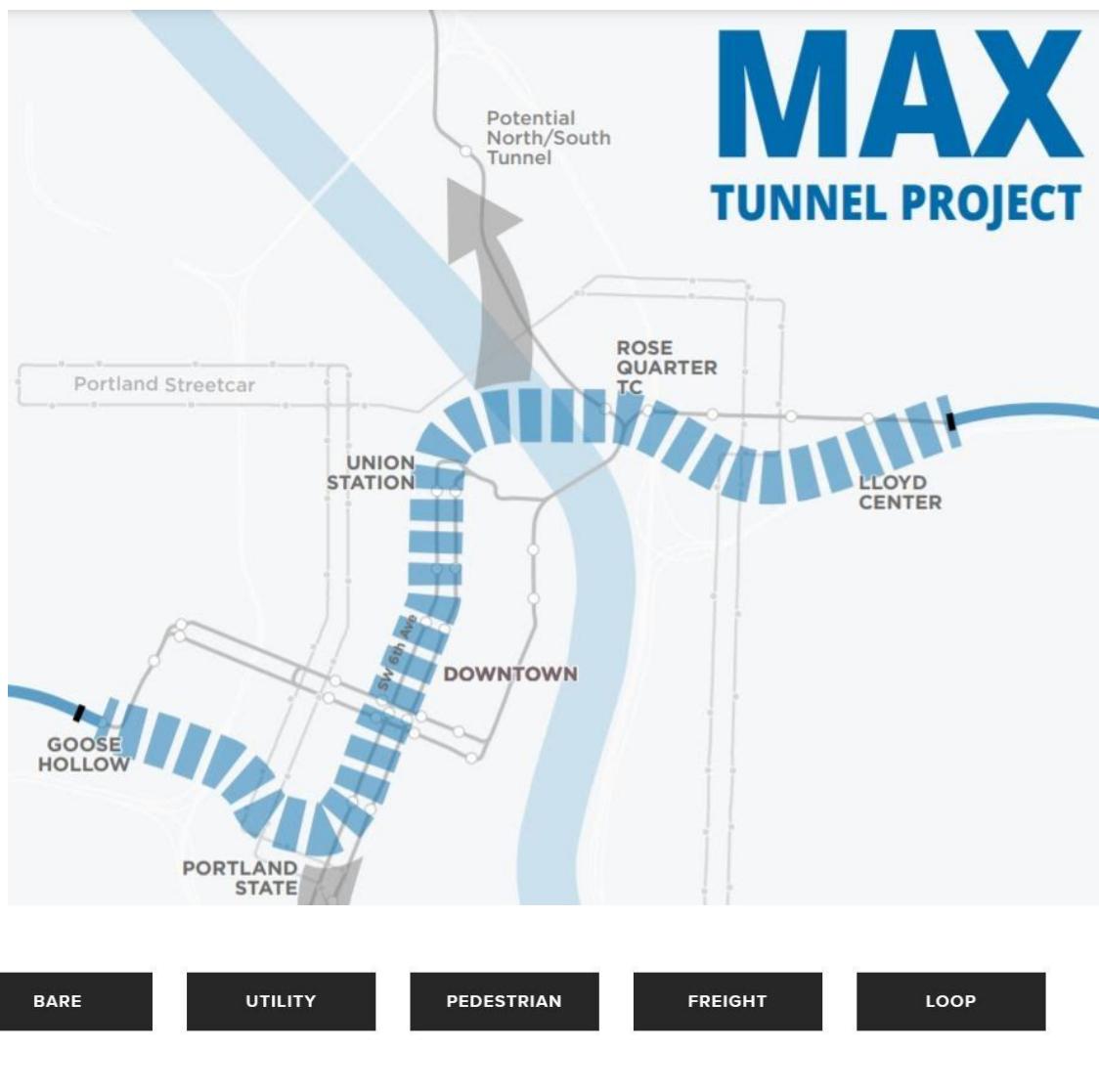


## **2. EV TUNNELS.**

Musk's Boring Company has [an operational solution for Las Vegas](#). An EV subway. Chicago is planning an 8 mile tunnel to O-Hare. Elon Musk says their Chicago tunnel will cost about \$55 million per mile. A Portland tunnel might cost \$50M x 8 miles = \$400M. Half the cost of a new bridge. Two new lanes. No community disruption. What's not to like?



**TriMet HOPES TO TUNNEL under Portland.** Autonomous community shuttles can carry commuters to mass transit. EVs could BE mass transit (in a tunnel). Faster. Cheaper. More convenient than driving. Or taking the bus.



**A cheap bridge might be an option.** Just for electric shuttles - no light rail or trucks. Delivers a dozen commuters directly to the Max. No trucks. No Light Rail. Cheap bridge. Tri-Met says Light Rail costs \$200 million per mile. That's too expensive. "Platoon" EVs...and cut the cost by 75%.

### 3. SHARED NEIGHBORHOOD FLEET.

A shared neighborhood fleet is handy for local trips. Summon it. Shared autonomous fleets can pick commuters up and deliver them locally (or to a mass transit hub). Existing roads and infrastructure can be used. Community charge stations, using V2X, can also provide community resiliency. Grant funded. Self-supporting.

#### People ride e-scooters for many types of trips

According to a **survey PBOT conducted among riders in summer 2019 with over 2,000 respondents**, Portlanders are using e-scooters for all types of trips, from commuting to recreation.



### COST

Tri-Met's operating budget is nearly \$1 billion a year. Autonomous transit may be moving towards free. Cheaper fuel, lower maintenance, no drivers. At \$.40 per passenger mile, that's an advertising subsidy. BRT and Light Rail can't touch that. Tunnels at \$50M/mile is one quarter the cost of light rail. No neighborhood disruption, noise or pollution.

#### How does the cost of autonomy compare with current options.

- Uber and Lyft have equivalent per-mile pricing of \$1.50 to \$3.18 (in Austin).
- Free-float carsharing services such as Car2Go, where you drive a rental, charges roughly \$0.70 to \$1.23 per mile.
- A ride in a self-driving Tesla Model 3 (\$50K), is expected to cost ~\$0.60 per mile.

### SUMMARY

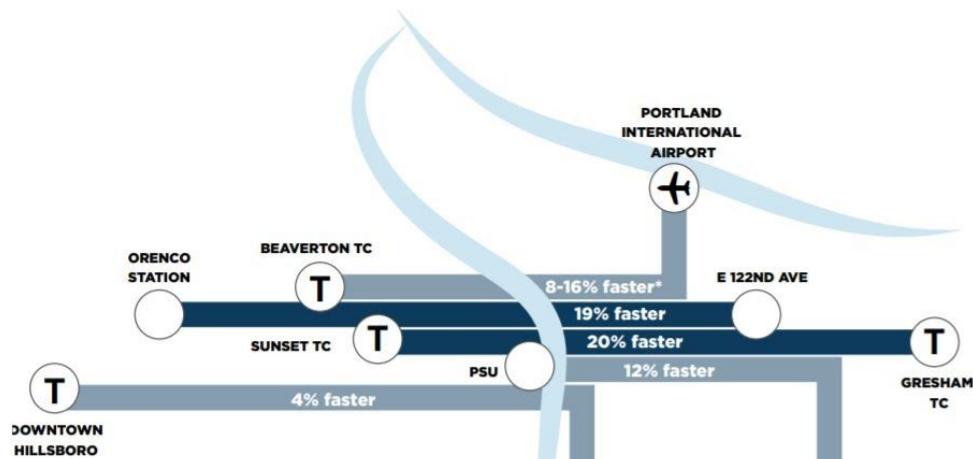
- Electric vehicles and autonomy have arrived.
- They use today's roads. Can be summoned.
- Tunnels add more lanes. No disruption or pollution.
- Neighborhood EVs reduce car ownership
- No pollution, no gas, no trucks.
- Faster. Cheaper. More Convenient.

I believe electric transit is now profoundly affecting transportation. We should plan on it. Light Rail is expensive with limited service. Bus Rapid Transit is inconvenient, expensive and slow. I don't have all the answers. Let's **LOOK** at the options.

## ADDENDUM:

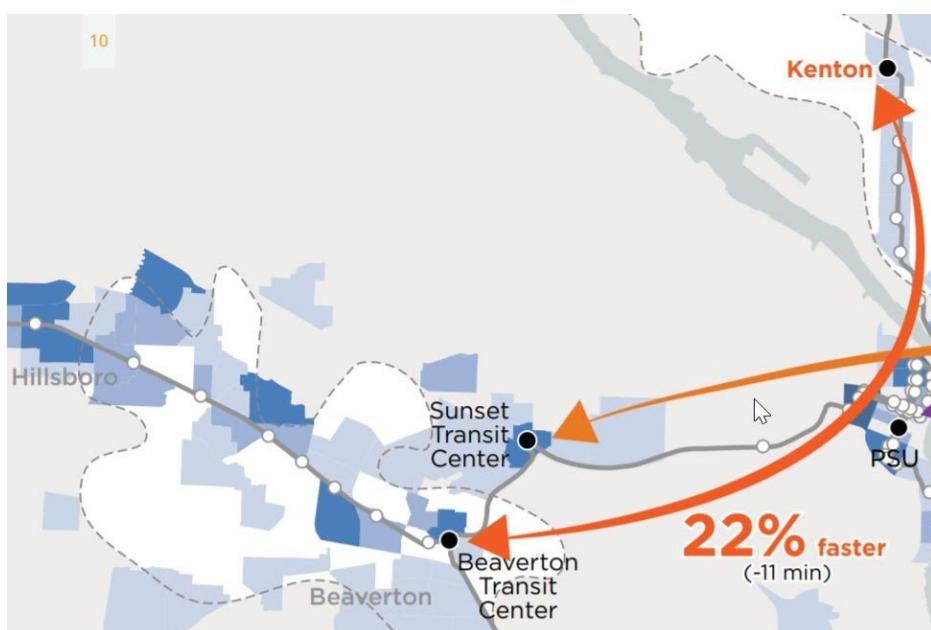
[The Portland Department of Transportation summarizes trends](#) in bike-share, scooter-share, car-share, and private for-hire use in Portland in 2019. It illustrates how new mobility addresses city goals, and discusses what's next for new mobility in Portland.





#### TUNNEL TRAVEL TIME SAVINGS

Routing MAX through a tunnel under the Willamette River and the Portland central city would significantly increase the speed of light rail across the region.



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Faster, cheaper, and more convenient options for the I-5 corridor may be right around the corner. They don't always have an advocate. Be one...if it makes sense for your constituents.

Thank you for your time and consideration. Below are some additional links.

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**Links:**

[www.hayden-island.com](http://www.hayden-island.com)

<http://www.hayden-island.com/tunnel-vision-for-i-5/>

<http://www.hayden-island.com/columbia-tube/>

<http://www.hayden-island.com/free-shuttle/>

<http://www.hayden-island.com/sustainabilitynet/>

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<https://www.portland.gov/transportation/escooterpdx/2019-e-scooter-report-and-next-steps>

<https://www.portland.gov/transportation/escooterpdx/new-mobility-snapshot-report>

[https://www.portland.gov/sites/default/files/2020-08/2019newmobilitysnapshot\\_pbot.pdf](https://www.portland.gov/sites/default/files/2020-08/2019newmobilitysnapshot_pbot.pdf)

<https://www.oregonmetro.gov/sites/default/files/2019/10/25/MAX%20Tunnel%20Study%20Findings.pdf>

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<https://www.boringcompany.com/>

<https://www.boringcompany.com/projects>

<https://www.lvloop.com/>