



Westside Transit Tunnel Calculation Assumptions

An explanation of estimates used for time savings calculations achieved through construction of the Westside Transit Tunnel (WSTT) versus a “no-build” option.

The numbers we use in this article are estimates. They are intended to give a rough idea of how much time and money this project can save on a yearly basis. We want the transit professionals at Sound Transit to analyze this project and vet these numbers as part of the System Planning process they are about to engage in for ST3.

Here is how we came up with our numbers.

1. Metro estimates that the current bus tunnel saves 5 minutes per bus that uses it. Due to the added length and difficulties related to the grid, we estimate that the new tunnel will save 10 minutes per bus.
 - a. This is fairly straight forward for Ballard and Aurora lines – the tunnel extension will avoid major choke points on both of those lines.
 - b. For West Seattle we get to the 10 minute estimate by:
 - i. Taking into account improved trip pairs by using the WSTT vs entering 3rd at Columbia on the surface: West Seattle to Belltown, Lower Queen Anne, South Lake Union and Pioneer Square will all be greatly improved by this configuration.
 - ii. There will be a significant negative impact on bus throughput without the WSTT and 3rd Avenue will be much worse for bus travel times in the future if this tunnel is not constructed. All of the current DSTT buses will either be moved out of downtown or onto the surface by approximately 2020.
 - iii. After the removal of the Alaskan Way Viaduct, buses to/from West Seattle will have to run on surface streets through SODO into Downtown. By constructing new ramps from the SODO Busway to the E3 Busway, these same buses would make up the lost time-savings that West Seattle buses currently enjoy by running without stops along the Alaskan Way Viaduct and entering downtown at Columbia St and 3rd Ave.
2. For estimation purposes we assume the average downtown user will see about ½ of the time benefit the bus sees overall based on each rider having different start/end points. The most heavily used stations are in central downtown, which supports this estimation method. Therefore the average rider will save 5 minutes per trip (one-way journey) while the average bus will save 10 minutes per trip.
3. We are focusing on Seattle routes due to the fact that North King County might pay for this tunnel



alone unlike the original bus tunnel. It is possible that East King and South King could avoid some future forced transfers due to the existence of this tunnel due to the space it will clear up on 3rd avenue. It is possible to add more buses to the tunnel than what we are suggesting. It is possible that the service hours saved could be used to increase bus frequency and efficiency. It is likely more people will want to ride the bus if they are faster, more frequent, and reliable. Having only Seattle buses would have an upside of making off board payment easier to implement – making the buses even faster.

4. For simplification purposes, we are ignoring indirect positive impacts in this analysis from things like off-board payment and induced demand. We are considering only the apples to apples comparison for 2014 ridership and service levels with or without construction of a new bus tunnel
5. We assume that Rapid Ride D and C will be split as is the current Metro plan.
6. We used Metro Ridership numbers from 2014.
7. The average WSTT commuter/year time savings estimate is based on a round trip using the 5 minute time savings per average rider multiplied by two trips per day multiplied by 251 work days per year. (5 minutes * 2x per day * 251 days) = 41.63 hours.

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