



Bored Tunnel Hybrid - Commonly Asked Questions

Will the SR 99 tunnel be safe?

- The tunnel will be safe for drivers in the event of an earthquake or accident.
- Structural engineers agree that tunnels can be one of the safest places to be during an earthquake. Seismic waves are amplified as they reach the surface of the earth, subjecting above ground structures to stronger motions than a tunnel, which causes a whiplash effect. The BART tunnel was inspected and re-opened the day after the Loma Prieta earthquake in San Francisco.
- If an accident occurs in the tunnel, there will be room on the shoulders for emergency vehicles. The tunnel will also have emergency passages to safety, fire suppression systems, communication with vehicles from a central station, and emergency ventilation systems that meet federal standards.
- The tunnel will be monitored 24 hours a day by WSDOT, similar to the I-90 tunnel today.

Will the SR 99 tunnel be another Big Dig?

- The Big Dig project and the SR 99 tunnel have little in common. The SR 99 tunnel will be approximately two miles long and mostly constructed underground, using an advanced tunnel boring machine. Cut-and-cover portals will be constructed only at each end of the tunnel. The Big Dig was eight miles long and included immersed underwater tubes, extensive cut-and-cover tunnels (with the existing viaduct supported above) through downtown Boston, and a cable-stayed bridge over the Charles River.
- The most likely cost of the SR 99 tunnel will be \$1.9 billion, which includes allowances for known but currently uncertain costs and risks. The original Big Dig estimate did not adequately account for scope changes, construction effects, mitigation, environmental requirements, inflation, and risk and escalation. There were also additions to the project, known as “scope creep,” which added to the cost.
- WSDOT will be the manager, reporting to the governor, assisted by private-sector engineers and contractors. This will ensure accountability with the public and legislature. On the Big Dig, there was not consistent management or clear lines of accountability.

Will there be cost overruns on the tunnel?

- The most likely cost for the SR 99 tunnel is \$1.9 billion; the total cost of the program, including city streets and transit, is \$4.24 billion.
- The cost estimate for the SR 99 tunnel anticipates that the base costs (materials, labor, equipment) will increase as the design advances. For example, the base cost (\$1.1 billion) assumes two ventilation buildings will be built at each tunnel end. The costs of the buildings are based on recently completed buildings because design is still preliminary. As the design advances, the building may be larger than assumed. To account for this uncertainty, other potential changes such as scope changes, mitigation, right-of-way, issues during construction, risk, and escalation of costs, a total of \$800 million, above the base cost, has been included in the estimate. This is 57 percent of the base cost.

- A survey completed by an international tunnel firm found comparable tunnels completed recently around the world have cost significantly less than the cost estimate per lane mile of the SR 99 tunnel.
- Independent experts and contractors have reviewed the SR 99 tunnel costs and have responded that the estimate appears reasonable for this early stage of design for budgeting purposes.

Is building a tunnel more risky than a new viaduct?

- Constructing a tunnel is not more risky than constructing a new viaduct. A new elevated structure on the waterfront would take between 6.5 and seven years. It would also require working in challenging geotechnical conditions, maintaining access to businesses, and detouring traffic from the viaduct for three years during construction.

Who will pay for cost overruns?

- The state, county, and city will be responsible for overruns on their own projects. The state is responsible for overruns on the tunnel, which is replacing an existing state highway and will be part of the state highway system.
- WSDOT is managing more than \$11 billion of transportation investments, and to date, has delivered 90 percent of projects early or on time, and 88 percent under or on-budget. Examples of large projects recently completed by the agency include the Tacoma Narrows Bridge and the addition of HOV lanes on I-5 through Everett.

Does the SR 99 bored tunnel provide enough capacity for the future?

- The tunnel along with the new waterfront boulevard that will connect to Elliott and Western avenues will accommodate the same number of vehicles as on the viaduct today.
- Approximately 85,000 vehicles will use the tunnel when it opens in 2015 and 25,000 vehicles will use the waterfront. This exceeds the number of vehicles that travel through downtown on the viaduct and either exit at the Elliott and Western ramps (34,000) or travel through the Battery Street Tunnel (63,000).
- The tunnel can accommodate more vehicles. However, future growth is expected to be mostly accommodated through investments in transit, which will carry 17,000 new daily riders, and improvements to city streets.

How does the tunnel work for freight?

- The bored tunnel will maintain freight routes through Seattle and preserve I-5 for regional and state freight trips. It will also provide a route for vehicles through the city, which would otherwise use city streets or I-5. According to the Port of Seattle, each day there are 15,800 trucks on I-5 and 6,400 trips on I-90.
- Some freight routes destined to Ballard and the Interbay industrial area will likely use the new four-lane Alaskan Way with a grade separated crossing over the railroad tracks that connects to Elliott and Western. Traffic signals on Alaskan Way will be operated to

ensure through trips move efficiently along the waterfront.

- Freight trips that use the SR 99 tunnel going between the Interbay and Duwamish industrial areas will take 22 minutes in 2015. This represents a two to three minute increase over today.
- According to the Port of Seattle, container volumes are expected to double by 2025. Freight trips leaving Port of Seattle container terminals will have improved access to I-5 and I-90 from investments on SR 519, Spokane Street, and the grade separated connection under the railroad tracks in front of Terminal 46.

How will northwest Seattle residents get to SR 99?

- They will be able to use the new four-lane waterfront boulevard, the tunnel, or I-5 for trips through downtown.
- There will be a grade separated crossing over the railroad tracks connecting Elliott and Western to the waterfront boulevard.
- Drivers using SR 99 to go through downtown will be able to access the bored tunnel via Aurora Avenue North near Mercer Street and streets north of South Lake Union/Uptown. Access near Mercer Street will be provided in all directions and will be improved by two-way Mercer Street.
- Travel times for through trips that would normally access SR 99 at Elliott and Western and now use the waterfront to get on near the stadiums (a new connection) are expected to increase by two to three minutes over today.
- Other options for accessing SR 99 north of downtown include Nickerson and Westlake; Elliott and 15th avenues; and access streets that are used today north of the Lake Washington Ship Canal.

How will drivers from West Seattle get to downtown Seattle?

- They will have several options to go downtown depending on the destination.
- They will be able to take SR 99 and exit near the sports stadiums, using the new Alaskan Way to enter downtown. This is expected to make travel times to south downtown faster than today.
- These same trips will be able to use the Spokane Street Viaduct with the new First and Fourth Avenue ramps to travel north into downtown.
- They will be able to take SR 99 and exit near Mercer Street to reach north downtown or South Lake Union.

Will there be restrictions on freight using the SR 99 bored tunnel?

- Most freight will be able to use the SR 99 tunnel.
- Vehicles hauling hazardous or combustible materials will be prohibited from the tunnel, similar to current restrictions in the Battery Street Tunnel and on the viaduct during peak hours.
- These vehicles will take I-5 or Alaskan Way, as they do today. The Mercer Street and Spokane Street Viaduct projects will improve connections from I-5.

Will the tunnel work if transit and city street investments are not funded?

- New transit service is an essential part of the bored tunnel hybrid alternative, because it will provide a reliable and efficient way for Seattle residents to get to and from downtown.
- Without the added transit service, drivers would have a more difficult time reaching the tunnel on city streets

that would likely be more congested. This will become more important as the city and region continue to grow.

- The city street improvements will provide critical access to downtown and the new SR 99 tunnel.

How is the SR 99 bored tunnel different from the tunnel that was rejected in 2007?

- The tunnel proposed to Seattle voters was a cut-and-cover tunnel, which would have been constructed by excavating a 60-foot deep trench along the central waterfront. It would have required closure of the viaduct for almost four years, causing disruption to traffic and businesses.
- The bored tunnel will be built primarily under First Avenue up to 200 feet below the surface, minimizing impacts on businesses and traffic. Traffic will be able to stay on the viaduct through most of construction.

How will the bored tunnel hybrid help the economy?

- The bored tunnel hybrid will support the economy by preserving capacity on SR 99 and I-5 for state and regional trips. Future growth will be accommodated on city streets and transit.
- Preserving capacity on SR 99 will keep pressure off streets near the port's container terminals.
- The viaduct can remain open during construction, minimizing disruptions to businesses and traffic. The SR 99 closures required during construction of a cut-and-cover tunnel or new viaduct would have required longer trips on detour routes through downtown Seattle for three to four years.
- More than 10,000 jobs will be sustained each year during construction.

Does funding the SR 99 tunnel require the legislature to shift funding from other projects?

- The state has committed \$2.8 billion; of which \$2.4 billion has been approved by the legislature as part of the 2003 and 2005 transportation investment programs. Proposed legislation closes the \$400 million gap by tolling the tunnel.
- The Port of Seattle, King County, and the City of Seattle will fund \$1.44 billion through local sources.

Does the bored tunnel hybrid help the environment?

- The bored tunnel hybrid maintains capacity through Seattle, and relies on streets and transit to handle future growth. New transit service will carry 17,000 new daily riders.
- Stormwater treatment will improve water quality in Elliott Bay
- New open space and public access will be created on the waterfront.
- Traffic noise will be contained within the tunnel.

How was agreement on the bored tunnel hybrid reached?

- An intensive public outreach effort led to agreement that the bored tunnel hybrid was the right choice.
- A 29-member stakeholder committee, representing business, neighborhoods, labor, and interest groups, met 16 times and a majority asked that a bored tunnel replacement be considered further.
- Ten public meetings were held and more than 85 briefings to groups were made. Comments from the public covered a range of topics, focusing on preserving capacity for the future and opening up Seattle's waterfront.