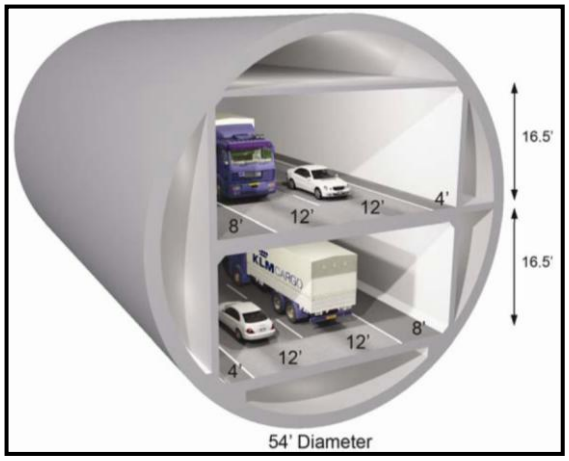
THE BORED TUNNEL HYBRID ALTERNATIVE*

Gov. Gregoire announcing the Bored Tunnel Hybrid Alternative is the preferred replacement solution.

WHAT IS THE BORED TUNNEL HYBRID ALTERNATIVE?
The Bored Tunnel Hybrid Alternative combines the best elements of the surface street options with a bored tunnel. It is a **'Grand Compromise'** that accomplishes what other hybrid scenarios cannot. It maximizes **new open-space** on the waterfront, preserves **throughput**, **reduces construction and operating impacts** to businesses and residents, increases **transit service**, **creates jobs** and provides a **long-term return on investment** at a **reasonably affordable price**.

Newly restored waterfront (Project Team Simulation)



HOW DOES THE BORED TUNNEL HYBRID ALTERNATIVE DIFFER FROM THE CUT-AND-COVER TUNNEL SEATTLE VOTERS REJECTED IN A 2007 ADVISORY ELECTION? The two tunnels could not be more different. The bored tunnel will be stacked with two lanes in each direction and will be constructed under First Avenue at a depth of 30 to 200 feet below the surface. The previous cut-and-cover tunnel was stacked with three lanes in each direction and would have been constructed along the waterfront at a depth of 10 feet below the surface.

Bored tunnel construction will take 4 ½ years and the Viaduct can stay open to traffic while it is being built, thus limiting the impact to adjacent businesses and residents.

In contrast, the previous cut-and-cover tunnel would have taken at least 7 years to build, and would have put the Viaduct out of commission for at least 3 ½ years, causing major impacts to the waterfront and surrounding area.*

***Comment**: The content herein is extracted from FAQs prepared by the Greater Seattle Chamber of Commerce and Cascadia Center of Discovery Institute. This document is for educational and informational purposes. Please note that items marked with an asterisk (*) and within the document are from the WSDOT presentation to the State Senate Transportation Committee on Jan. 26, 2009.*

HOW DOES THE BORED TUNNEL HYBRID ALTERNATIVE DIFFER FROM THE 'BIG DIG' IN BOSTON?

The Big Dig was one of the largest engineering projects in world history and has next to nothing in common with this project. As Governor Gregoire said: "They tried to move the world…we're trying to keep the world in place." The Big Dig included a very disruptive cut-and- cover tunnel through the central city under an existing roadway and two subway lines, a new cable-stayed bridge over the Charles River, and two sets of immersed tubes under the harbor to the airport in very challenging soil conditions. * Nearly a third of the project costs went to extensive traffic management and construction mitigation. Moreover, the initial cost estimate did not account for inflation, risk or escalation and the lead agency abdicated management to a virtually unaccountable consortium.

	Bored Tunnel & South End Project	Big Dig Projects
Total Project Length	2.8 miles	8 miles
Number of tunnels	1	3
Length of tunnels	2 miles	5 miles
Number of bridges	0	1
Total lane miles	12.8 miles	>161 miles

*Boston Big Dig tunnels included cut-and-cover, immersed tubes, jacked tunnel and other special tunneling methods.

This chart demonstrates the enormous differences between the two projects. *

Not even close to this

In contrast, the Bored Tunnel Hybrid Alternative will have minimal impacts on existing traffic, downtown and the waterfront, and WSDOT will strongly assert itself as the project owner using state-of-the-art cost estimates that account for risk, contingency and escalation. Also, it's important to remember that more than 100 tunnels have been built in Seattle since 1890, mostly in glacial soils.

Unquestionably, we have the tools and expertise to do this project.

HOW SAFE IS A BORED TUNNEL IN AN EARTHQUAKE? The Bored Tunnel Hybrid Alternative will be very safe in any disaster situation. It will have improved lane and shoulder widths, modern fire protection safety equipment and plenty of emergency exits. And it's a fact that tunnels actually perform better in earthquakes than bridges. Structural engineers agree that tunnels are one of the safest places to be during an earthquake because a tunnel moves with the earth. In 1989, the BART tunnel in San Francisco reopened just hours after the devastating Loma Prieta earthquake, while elevated structures like the Cypress freeway collapsed or were disabled in other ways.

HOW WILL THE BORED TUNNEL HYBRID ALTERNATIVE MEET THE NEEDS OF PEOPLE NORTH AND SOUTH OF SEATTLE WHO RELY ON THIS CORRIDOR TO GET TO WORK AND TO MOVE THEIR PRODUCTS?

The Bored Tunnel Hybrid Alternative will maintain capacity and today's travel times for trips through downtown. When it opens, the tunnel will carry 85,000 vehicles through downtown Seattle each day (with room to grow). Surface Alaskan Way will carry another 25,000 vehicles per day. In-city trips will take advantage of new investments in local streets, and new transit service will carry 17,000 additional daily riders, primarily serving northwest and southwest Seattle. Improvements to I-5 will also expand north-south vehicle capacity and improve travel times.*

View of the waterfront (Viaduct Project Team Simulation)

Further design work must be done to ensure the freight, commercial and commuter needs of Ballard and the rest of northwest Seattle will be served by the deep bore tunnel and related surface improvements.

HOW WILL WE PAY FOR IT AND WHO IS RESPONSIBLE FOR ANY POTENTIAL COST OVERRUNS? The looming state budget shortfall has understandably made everyone cost-conscious. It is important to note that the January 13th Letter of Agreement caps the state contribution at $2.82 billion and ensures that all parties have some 'skin in the game', including King County, the Port of Seattle, the City of Seattle and many regional businesses and residents who will be key contributors in a variety of funding programs.

HOW WILL THE BORED TUNNEL HYBRID ALTERNATIVE HELP THE STATE ECONOMY?

The Bored Tunnel Hybrid Alternative provides one of the best long-term returns on investment for our economy and our environment. Our top economists say it will provide up to $2.7 billion in regional economic benefits and will pay for itself in the next 10 to 20 years. Moreover, it will keep the economy moving. It provides some of the fastest travel times, has the fewest construction impacts and can be built for the most part while the existing viaduct continues to move traffic, thereby minimizing the enormous costs of construction and mitigation to surrounding residents and businesses. In addition, the project is expected to maintain and create 10,000 jobs each year over the course of the project.

View from the waterfront (Viaduct Project Team Simulation)

HOW WILL THE BORED TUNNEL HYBRID ALTERNATIVE BENEFIT THE ENVIRONMENT? The Bored Tunnel Hybrid Alternative will provide a world class open-space that is a welcoming place for pedestrians, bicycles, transit and vehicles. It will eliminate noise, shadowing and view blockage from the existing Viaduct, reduce surface-water runoff, and provide a memorable place for people to live, work and play. The project plan also includes a 25% increase in transit (a million more hours of transit per year) that will provide more transportation choices to a broader segment of the region's population.

View from the waterfront (Viaduct Project Team Simulation)

HOW DID THE BORED TUNNEL HYBRID ALTERNATIVE EMERGE AS A VIABLE SOLUTION?

The deep-bore option was not the one that was recommended to the stakeholders by the government planning team as the stakeholders came to the final hour of their deliberations. It was a recommended option that emerged instead from the stakeholders themselves based on their judgments regarding the data, including costs and benefits, and the different perspectives each stakeholder brought to the table.

In the end, not everyone agreed, but remarkably most stakeholders reached something that has not been achieved during the eight years since the viaduct was shaken by the Nisqually quake: a broad-based consensus about a positive path forward.

The Bored Tunnel Hybrid Alternative is a viable, achievable project that makes financial sense and meets the broad range of guiding principles that were established to judge alternatives.

HOW MUCH WILL THE TUNNEL COST? The State of Washington, King County, and City of Seattle estimate the tunnel will cost $1.9B, with the total project cost at $4.25B. The state will fund the construction of the tunnel itself, using the $2.8B promised by Governor Chris Gregoire, while the city and county will pay for improvements to the surface streets and repairs to the Alaskan Way Seawall. Elected leaders are considering a concurrent increase in mass transit that would be paid for by the county.

DO WE HAVE THE FUNDS TO PAY FOR THIS? Each of the governmental entities has different funding models. The state has already authorized $2.4B of the $2.8B promised by Gov. Gregoire with the additional $400 million to be funded by electronic time-variable tolling of the tunnel, under pending legislation. The county and city have proposed various incomes sources, including creating a local taxing district and increasing the car-tab tax. Mayor Nickels also expects that some of the federal stimulus package could be allocated to the project.

HOW LONG WILL THE TUNNEL TAKE TO CONSTRUCT? Construction is tentatively scheduled to begin in early 2011 and open to traffic in late 2015. Unlike other options, virtually all of the construction for the tunnel can be completed while the existing viaduct remains in use. The estimated financial costs to businesses and the tax base of having a major corridor closed for several years to rebuild range from several hundred million dollars to over one billion. The 2006 Hebert study indicated that the cost could be $3.4-3.5 billion.

COSTS FOR A REPLACEMENT VIADUCT OR SURFACE REPLACEMENTS HAVE A LOWER PRICE TAG. WHY NOT GIVE THOSE OPTIONS MORE CONSIDERATION? The costs often quoted for the other options do not consider the full life-cycle expenses. Tunnels have a life expectancy of 2-3 times that of surface structures. (E.g. the London Underground has tunnels operating from the 19th century while the failing Viaduct was built in the 1950s). A tunnel would also reconnect downtown with the waterfront, increase property values, generate new tax revenue, and improve the quality of life for downtown businesses and residents. Research by both Cascadia Center and outside contractors has confirmed that tunnels offer a better return on investment when full life-cycle expenses are included.

IS A TUNNEL AN ENVIRONMENTALLY FRIENDLY PROJECT? Yes. A major benefit of a tunnel is that the environmental impact can be contained in a small space. By moving the vehicles underground and by utilizing new electrostatic precipitator technology, the air quality downtown improves and there is less runoff into the Puget Sound. Also, due to the longer lifespan and less frequent maintenance of a tunnel, there is less impact from ongoing construction. Although the Sierra Club has criticized the tunnel for encouraging more CO2 emissions through increased driving, any option that significantly decreases traffic flow would actually create more greenhouse gases due to congestion and slow speeds.

HOW DOES THE CAPACITY AND ACCESS TO THE PROPOSED TUNNEL COMPARE WITH THE EXISTING STRUCTURE? The deep-bored tunnel focuses on providing a bypass for the 55-80% of the current Viaduct traffic that does not stop downtown. The capacity will remain the same as the existing Battery Street tunnel, but unlike the current Viaduct, it will not increase to three to four lanes as it approaches the stadiums. In order to minimize expense and disruption, as well as keep traffic in the tunnel moving, the mid-downtown and Western Avenue exits will be replaced with an interchange at Sodo that provides freight with better access to the Port. Vehicles heading downtown will instead exit the tunnel slightly earlier and travel the additional 10-12 blocks on expanded surface streets. With the vehicles traveling to/from downtown off of the highway before they reach the existing bottleneck, the reduction in capacity is less of an issue. In addition, during rush hour when demand is greatest, a higher percentage of vehicles are heading to or leaving downtown and will avoid a large portion of the tunnel.

WHAT HAPPENS TO THE LAND ON WHICH THE VIADUCT IS CURRENTLY BUILT? The vast majority of that property is government right-of-way that would become available for new uses. The state DOT has previously stated that it does not plan to sell the land to developers, however it could be put to a number of public uses such as government and public buildings, walkways and parks. The new use of the property is not fixed, however, and it's quite possible some of it could be sold to developers for specific waterfront renewal projects. The revenues from the sale of property would help reduce the actual cost of the tunnel.