State transportation officials have since the outset been studying the impacts of possible earthquake, tsunami and climate change on the planned Seattle deep-bore tunnel and a cut-and-cover version previously proposed.

They’re convinced the tunnel won’t be flooded in the next century, and will be able to withstand up to a 9.0 earthquake.

“We’ve been thinking about this since 2004, when the first draft EIS was issued and tunnel proposed,” said Ron Paananen, the Washington Department of Transportation’s Alaskan Way Viaduct and Seawall Replacement Program administrator. “We have evaluated the possible effects of rising sea levels and tsunamis, and have concluded they do not pose a risk to the tunnel.”

The University of Washington Climate Impacts Group has in the last few weeks updated its estimates for sea level rise in Puget Sound by 2100, and the range is substantial, from a low of 6 inches to a high of 4.2 feet, said Lara Whitely-Binder, outreach specialist for the group.

Previous WSDOT studies had put the top end of sea level rise at 2.8 feet over the next 75 years.

The larger number includes eight inches of Seattle land subsidence, which would lower the land while the water is rising due to arctic melt, Whitely-Binder said.

Despite the higher top-end estimates for sea level rise, Paananen said current studies show that the planned Seattle Seawall’s eight feet of freeboard over average high tide mean that the possibility of any flooding in the south portal of the tunnel during a large earthquake is very small.
He added that deep ocean tsunamis would be largely dissipated by the time they made their way down Puget Sound to Seattle, and earthquakes within Puget Sound would generate only smaller tsunamis.

‘The tunnel is being designed to withstand a very strong earthquake, and tsunamis are an even rarer event in Seattle. It’s very low-risk item,” he said. “If we look at this again and decide it is an issue, there are ways to protect the portal against extra sea level rise.”

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