

Columbia River Immersed Tube Tunnel



Examples of Immersed Tube Tunnels with traffic & rail lanes

	Traffic	Trains	Rail	Length	Year
	Lanes	Lanes	Type	Feet	Open
Columbia River Immersed Tube Tunnel	12	2	light	2,700	?
New George Massey Tunnel, Vancouver	6	2	light	2,100	?
East Harbor Tunnel, Hong Kong	4	2	subway	11,100	1989
Skishima Tunnel, Osaka	4	2	subway	3,400	1996
Oresund Tunnel, Sweden to Denmark	4	2	high speed	11,600	1999
Fehmarn Sound Tunnel, Germany	4	2	high speed	5,000	2028



bridge
1917



2,700 ft.

Columbia
River

Hayden
Island

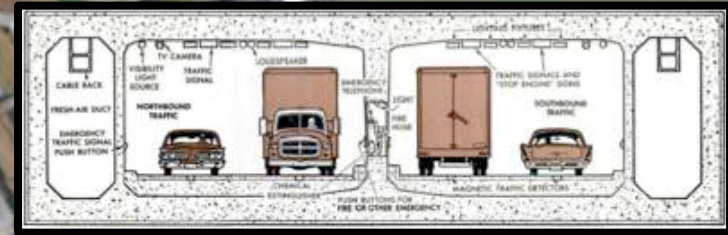
1,000 ft.

Very similar traffic, geography & geology

130,000 vehicles/day



tunnel
1959



2,100 ft.

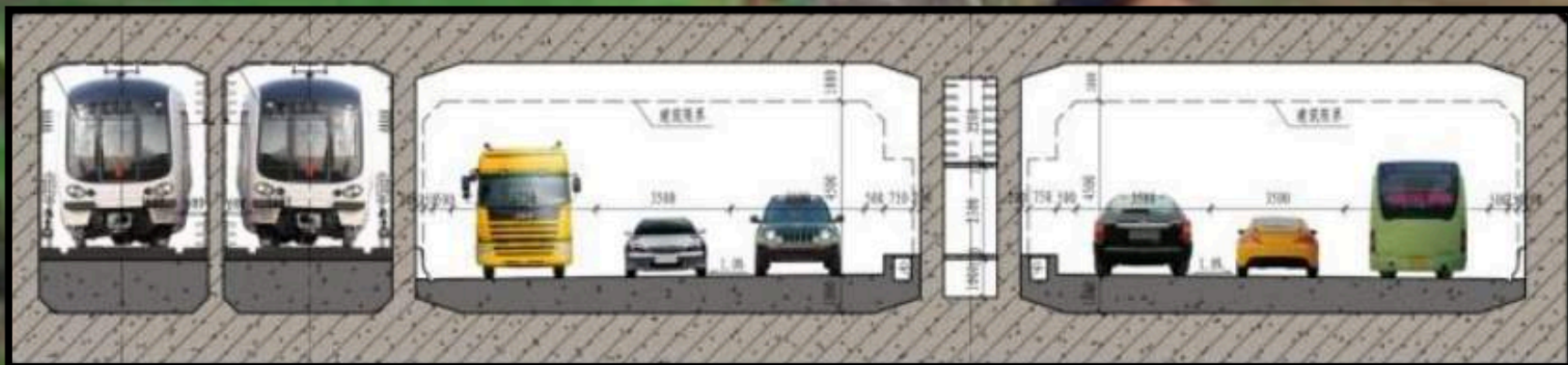
Fraser
River

Deas
Island

1,000 ft.

80,000 vehicles/day

New George Massey Tunnel Vancouver BC





**East Harbor Tunnel, Hong Kong
1989 4 traffic & 2 tains lanes 2.1 miles**

Sakishima Immersed-Tube Tunnel, Osaka

1996 4 traffic & 2 tains lanes 3,400 feet

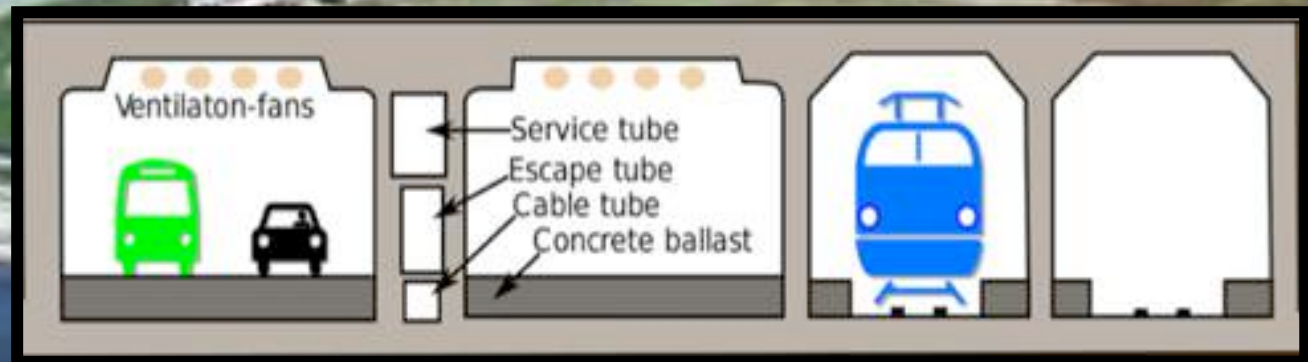


1999 Øresund Tunnel Sweden to Denmark

2.2 miles



High-speed rail 125mph





Fehmarn Sound – Germany
5,000 ft.
6 lanes (4 vehicles–2 transit)
\$780 million est.

Thank You



TRUSS ME
I AM **CIVIL ENGINEER**



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