

# Bertha is as \_\_\_\_\_ as...

## Go on, fill in the blank.

When it comes to measuring Bertha, the world's largest tunneling machine, it's only natural to seek comparisons to help us understand just how big she really is. We'll get you started. At five stories tall, Bertha is as \_\_\_\_\_

### Tall as...

The **Alaskan Way Viaduct** she's replacing: It's just a coincidence. We swear.

### Long as...

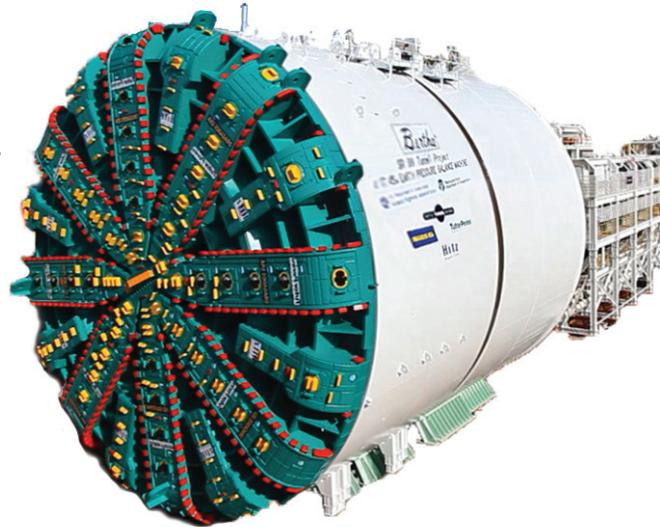
The distance between home plate and the right field foul pole at nearby Safeco Field: Bertha is **326 feet long** and, like any self-respecting ballplayer, isn't afraid of a little dirt.

### Heavy as...

Thirty-five blue whales: Bertha weighs a whopping **7,000 tons** and the average blue whale can weigh up to 200 tons.

### Advanced as...

The most amazing shovel you could ever imagine: Tunneling has come a long way since the days of hand tools and elbow grease. Just try digging up to **35 feet a day** through Seattle's glacial till with a shovel and see how far you get.



### Efficient as...

An octopus: Okay, Bertha doesn't have eight arms. But she does have two segment erectors, like arms, that lift the walls of the tunnel into place. Bertha can build the tunnel walls in **half the time** of your average tunneling machine, most of which only have one erector arm.

# How do you measure Bertha's story?

## Let us count the ways

- 60** the number of years the Alaskan Way Viaduct has stood along Seattle's waterfront
- 6.8** the magnitude of the Feb. 28, 2001 Nisqually earthquake that damaged the viaduct
- 90+** the number of alternatives WSDOT considered for replacing the viaduct prior to hiring Bertha
- 1.7** the length of the SR 99 tunnel in miles
- 1** the number of years it took to build Bertha
- 41** the number of pieces Bertha was in when she arrived from Japan
- 7,000** Bertha's total weight in tons
- 57.5** the diameter of Bertha in feet
- 260** the number of teeth on Bertha's cutterhead
- 25** the number of people working a shift on Bertha while she is tunneling
- 3** the diameter of boulders, in feet, that Bertha can swallow
- 2,300** the number of miles Bertha's cutterhead will rotate by the end of tunneling
- 850,000** the amount of soil, in cubic yards, that will come out of the ground during tunneling
- 326** the length of Bertha in feet
- 2** the thickness of the tunnel walls in feet
- 56** the interior diameter of the tunnel walls in feet
- 360,000** the weight of a full tunnel ring in pounds
- 1,450** the number of concrete tunnel rings that will become the tunnel over the next 14 months. Each ring is composed of 10 segments, which are made individually before being connected at the job site
- 14** the number of months needed to dig the SR 99 tunnel
- 118,000** the total volume of concrete used to make the segments in cubic yards
- 2015** the year the SR 99 tunnel will open to drivers
- 1** the number of times in your life you'll see a tunneling machine as amazing as Bertha