

What if you just kept digging?



Artificial landfill

- added to fill shoreline mudflats
- loose, water-saturated sediment

Modern sediments

- deposits of modern streams and shorelines; includes the Fraser River floodplain and delta
- loose, water-saturated sediment

Ice Age sediments

- glacial deposits of sand, mud, and gravel
- source of much of our construction material
- reservoir for groundwater
- compact, dense sediment

Bedrock:

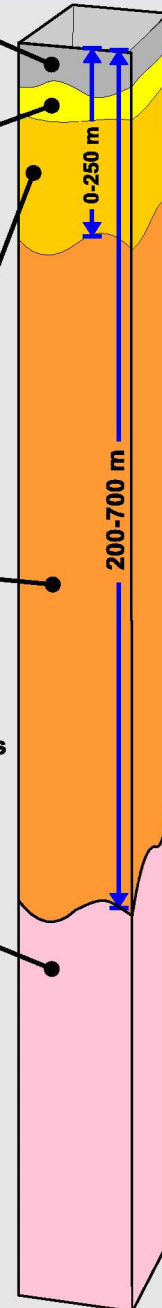
Foundation for City

- sandstone, mudstone and conglomerate, the uppermost rock in Vancouver, Burnaby and New Westminster
- exposed in Stanley Park sea cliffs and at most construction sites
- a rock base for large buildings

Older bedrock:

Under all the rest

- granites, volcanic and sedimentary rocks
- exposed in the mountains on the North Shore, and the foundation for some North Shore buildings
- continues to the south beneath the Fraser Valley and delta as the deep basement to the region
- solid rock, but highly fractured in places



last 100 years
last 10 000 years
2 million to 10 thousand years ago



60 to 10 million years ago

85 to 70 million years ago



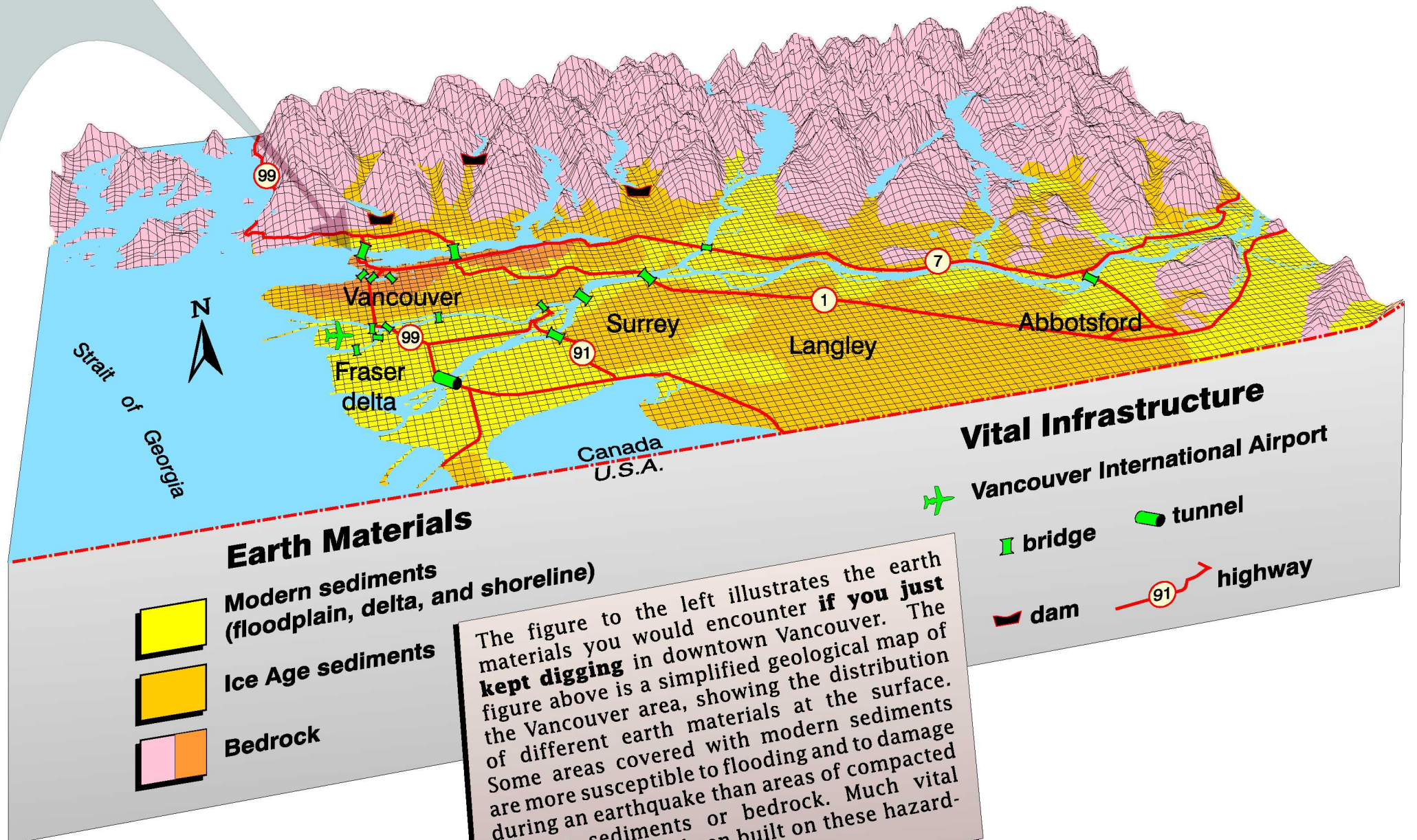
170 to 100 million years ago

Rise of mammals

Dinosaurs rule the Earth

Vancouver Island collides with North America

WHAT'S UNDER OUR FEET ?



Earth Materials

- Modern sediments (floodplain, delta, and shoreline)
- Ice Age sediments
- Bedrock

Vital Infrastructure

- Vancouver International Airport
- bridge
- tunnel
- dam
- highway

The figure to the left illustrates the earth materials you would encounter **if you just kept digging** in downtown Vancouver. The figure above is a simplified geological map of the Vancouver area, showing the distribution of different earth materials at the surface. Some areas covered with modern sediments are more susceptible to flooding and to damage during an earthquake than areas of compacted Ice Age sediments or bedrock. Much vital infrastructure has been built on these hazard-prone modern sediments.



Geoscience Vancouver
Thematic Poster Series
Geological Survey of Canada
Open File 3353E, 1996

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