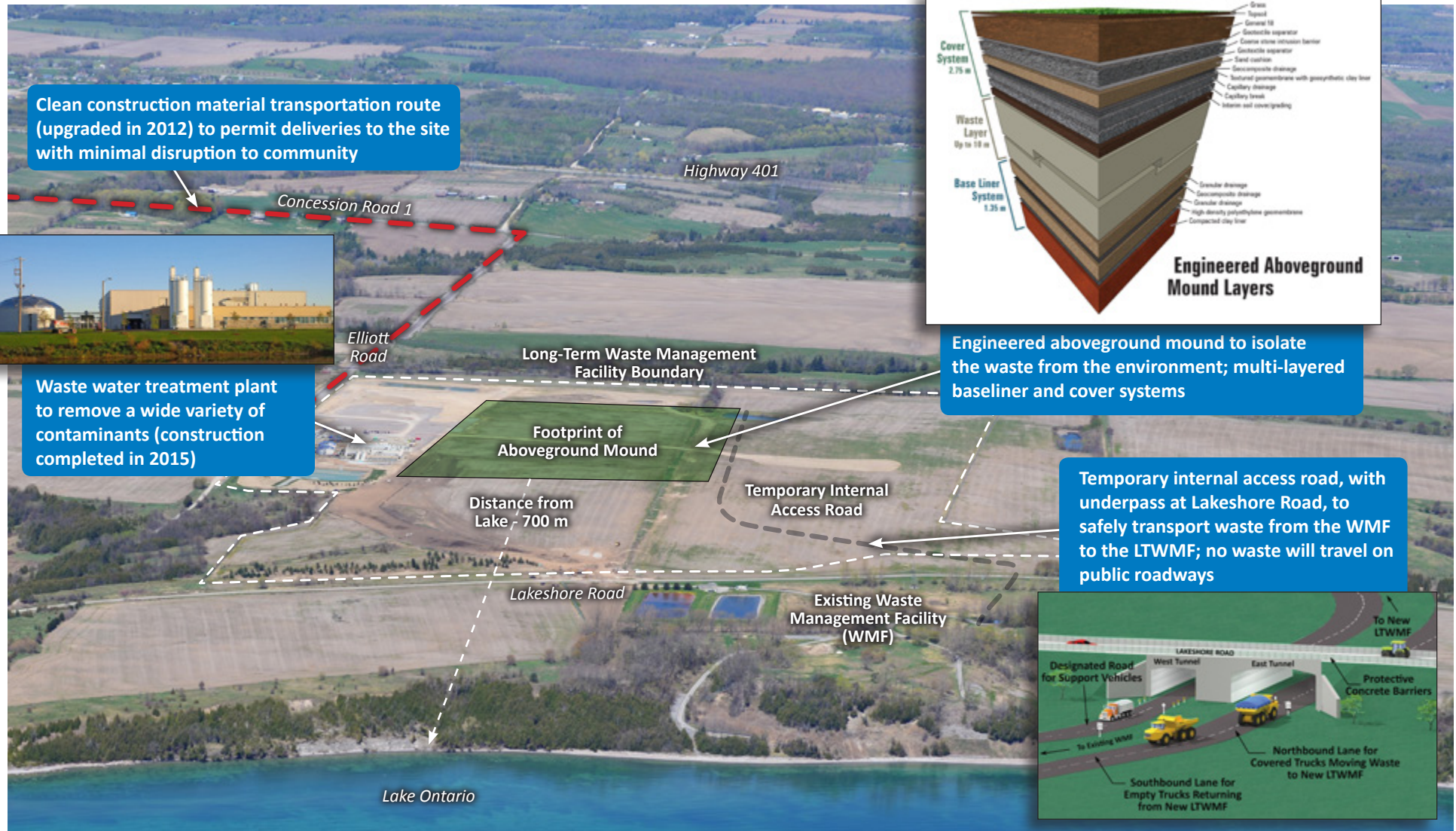


The Port Granby Project will relocate approximately 450,000 cubic metres of historic low-level radioactive waste and marginally contaminated soil, located at an existing waste management facility (WMF) on the shoreline of Lake Ontario, to an engineered aboveground mound to be built at the new

long-term waste management facility (LTWMF) located 700 metres north of the current site. The historic waste resulted from radium and uranium refining operations of the former Crown Corporation, Eldorado Nuclear, and its private sector predecessors, which operated from the 1930s to 1988.





The waste water treatment plant will treat surface water collected at the long-term waste management facility site during its construction and water from within the engineered aboveground mound once it is built. During excavation of historic low-level radioactive waste, groundwater and surface water will also be collected at the existing Port Granby Waste Management Facility site and pumped to the new plant for treatment. Groundwater from the existing site will be treated at the plant for years to come.

During waste excavation at the existing site and waste placement in the mound, the plant will treat a volume of 175,000 cubic metres per year. Once the mound is closed and the waste dries out, the volume of water to be treated from within the mound will decrease to approximately 100 cubic metres per year.

Waste Water Treatment Process

Waste water is pumped to an equalization pond from collection reservoirs, decontamination stations and from within the aboveground mound. The water then enters the plant, which uses best-available technologies to remove a wide range of contaminants through a two-stage process. Biological treatment (**Stage 1**) is followed by reverse osmosis (**Stage 2**). The process will improve the quality of water discharged to Lake Ontario.



Waste water flows through screens to remove debris prior to entering a **bioreactor tank** for ammonia nitrate removal. Contaminated solids in the form of sludge are then separated from the biologically treated waste water in a **membrane bioreactor tank**. The sludge is collected in specially designed tote bags for placement in the mound.

The biologically treated water then enters the **reverse osmosis system** where contaminants such as radium, uranium and arsenic are removed. The water is forced through a membrane. The contaminants are rejected by the membrane, and the treated water flows through a **pH adjustment tank** before being discharged into Lake Ontario. The residue from this process is dried and collected in large, specially designed tote bags. Once filled, the tote bags are placed in the mound.