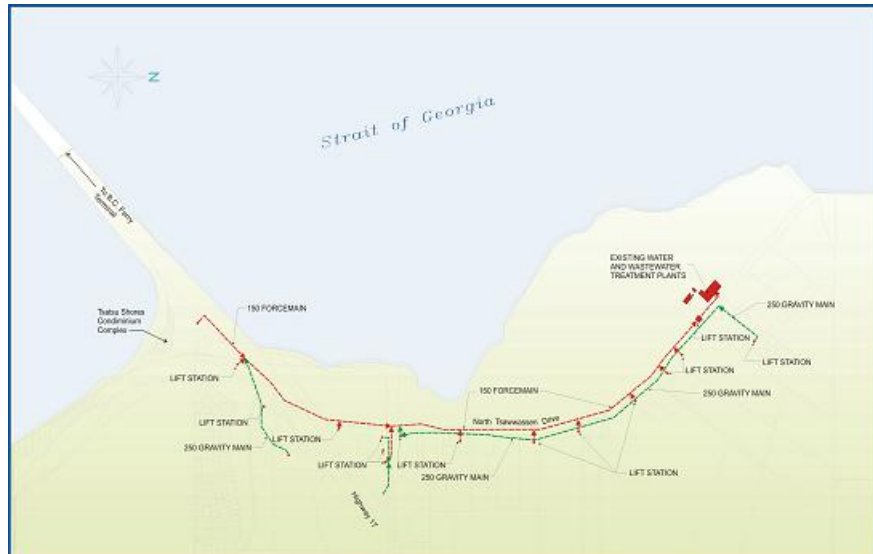


# Operations and Maintenance Cost Estimate of Water and Sewer Infrastructure



The Government of Canada, through the Department of Indian Affairs and Northern Development (DIAND) provides funds to First Nations for the purpose of operating and maintaining adequate water and sewer systems. Earth Tech was retained to develop a detailed operations and maintenance (O&M) cost estimate for the Tsawwassen First Nations (TFN) water and sewer infrastructure.

The Tsawwassen First Nations land occupies an area of approximately 300 hectares in the southwestern corner of the Lower Mainland of British Columbia. It is located 27 kilometers south of Vancouver, on the coast of the Strait of Georgia. Approximately 160 people are resident on the Tsawwassen First Nations land. The sewer and water infrastructure that is owned and operated by the Band includes 945 m of service connections; 2,560m of gravity sewer; 3,730 m of force mains; 15 lift stations and a wastewater treatment facility. Water infrastructure includes 19 fire hydrants and 3,007 m of water mains.

The cost estimate was broken down into six categories: labour; equipment and supplies; sludge disposal; laboratory supplies; power; and administration. The method used to derive the cost estimate for each category was different and individualized for the Tsawwassen First Nation.

Earth Tech also studied the Department of Indian Affairs and Northern Development gross capital and O&M funding requirement equations of wastewater and water systems. The cost estimates using both methods were evaluated and discussed.

## PROJECT DETAILS

CLIENT: Tsawwassen First Nations  
 LOCATION: British Columbia, Canada

## REFERENCE INFORMATION

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## PROBLEM

To provide a detailed cost estimate of the funds required to adequately operate and maintain sewer and water infrastructure, which is owned and operated by the Tsawwassen First Nation.

## CHALLENGES

To provide a reliable and accurate operations and maintenance cost estimate.

## SOLUTION

Earth Tech understood using standard costs to develop a cost estimate for Tsawwassen would be ineffective and of little value because of the inherent differences in their system. Hence Earth Tech developed a cost estimate procedure and established cost ranges for each activity.

## BENEFITS

The cost estimate provides Tsawwassen First Nations with useful and significant information when pursuing funding from the Department of Indian Affairs and Northern Development.