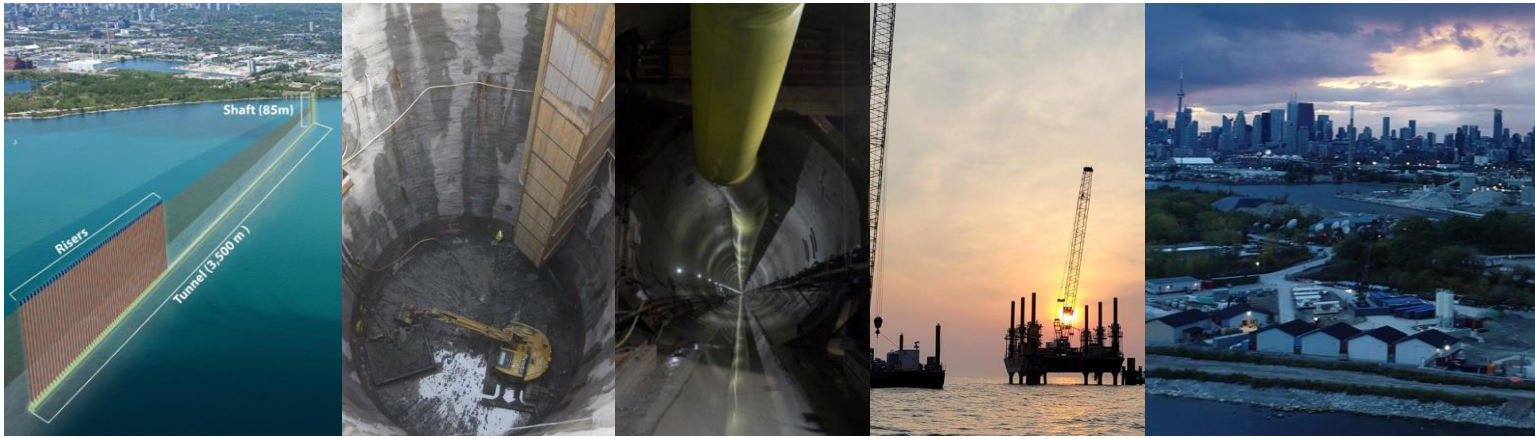
MEA Conference

Ashbridges Bay Treatment Plant Outfall (ABTPO)

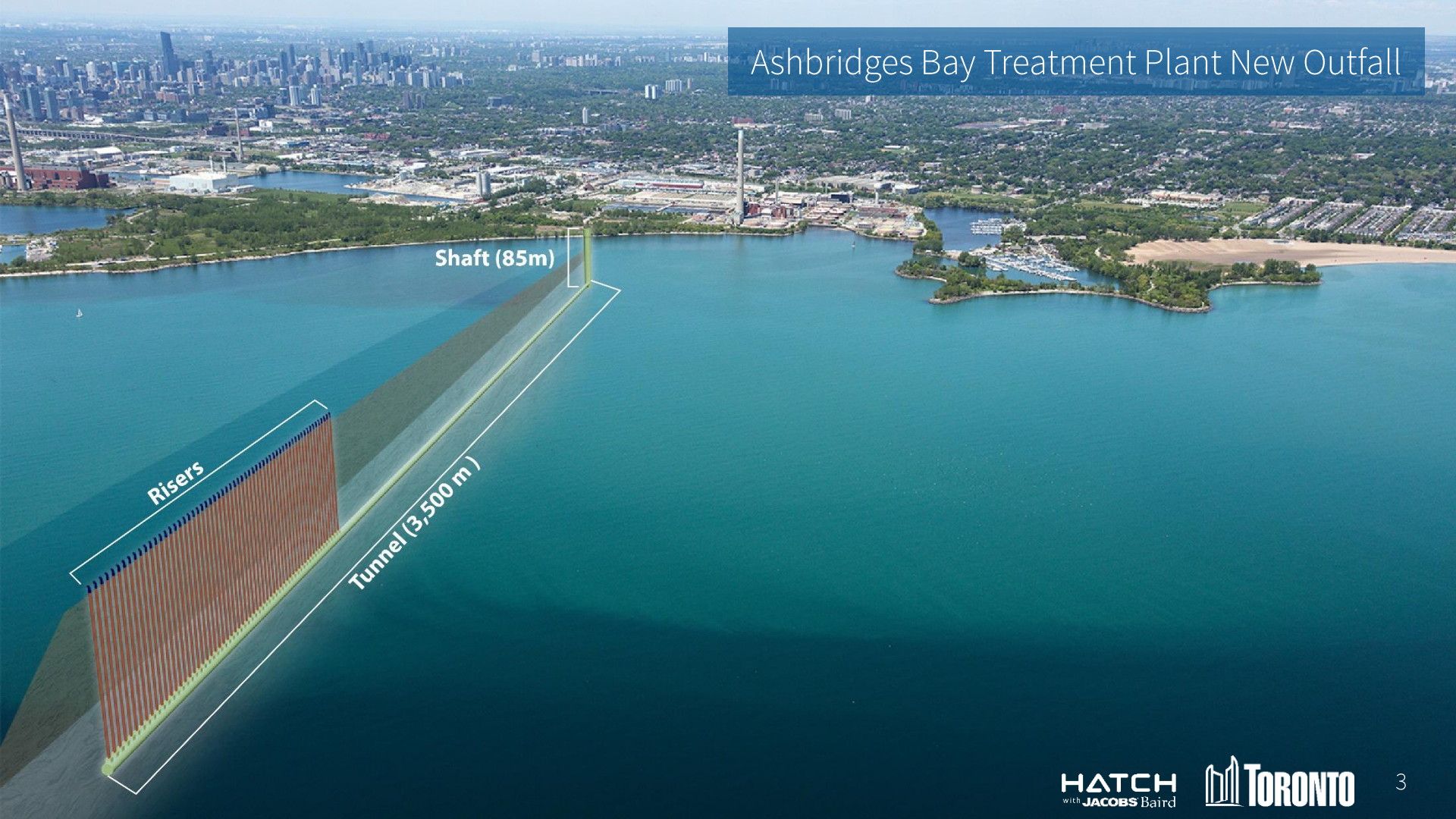


2022-11-16

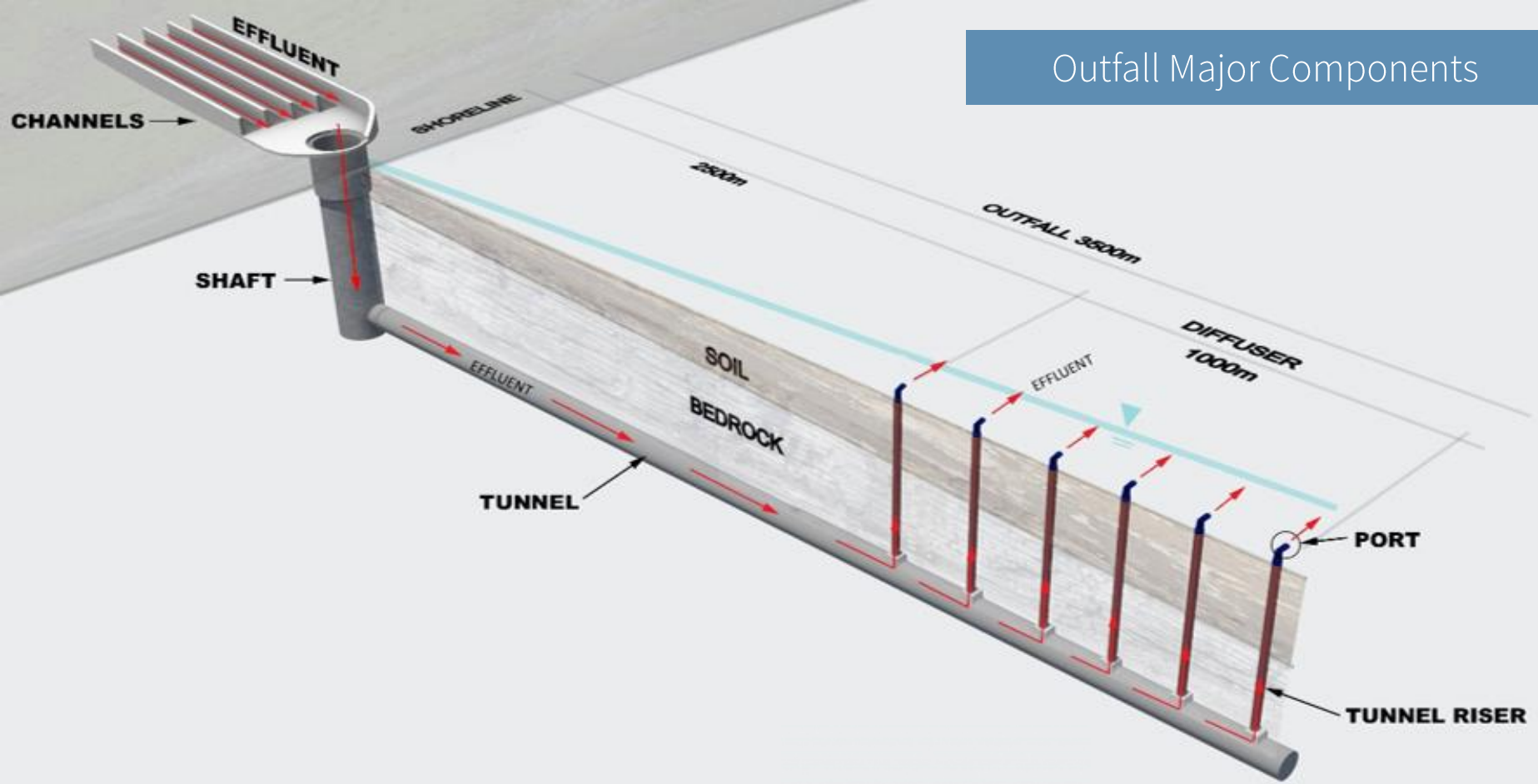
Justyna Teper, City of Toronto & Kevin Waher, Hatch

Ashbridges Bay Treatment Plant

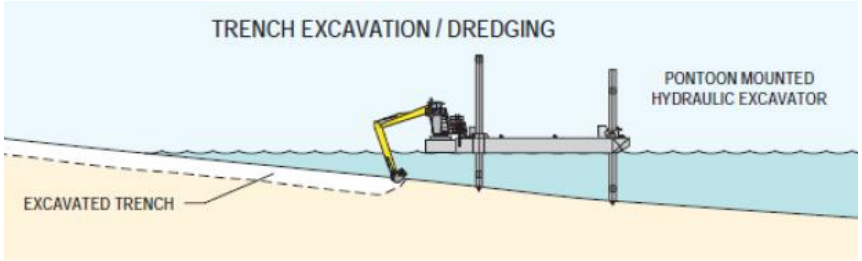
Ashbridges Bay Treatment Plant New Outfall

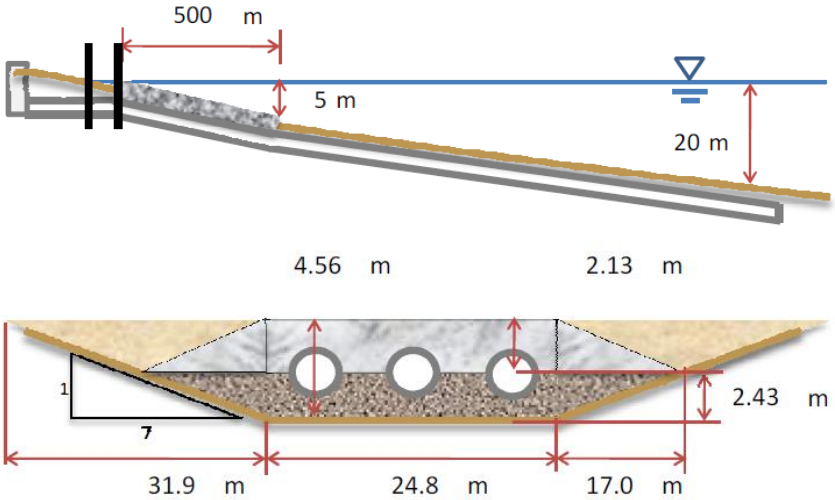


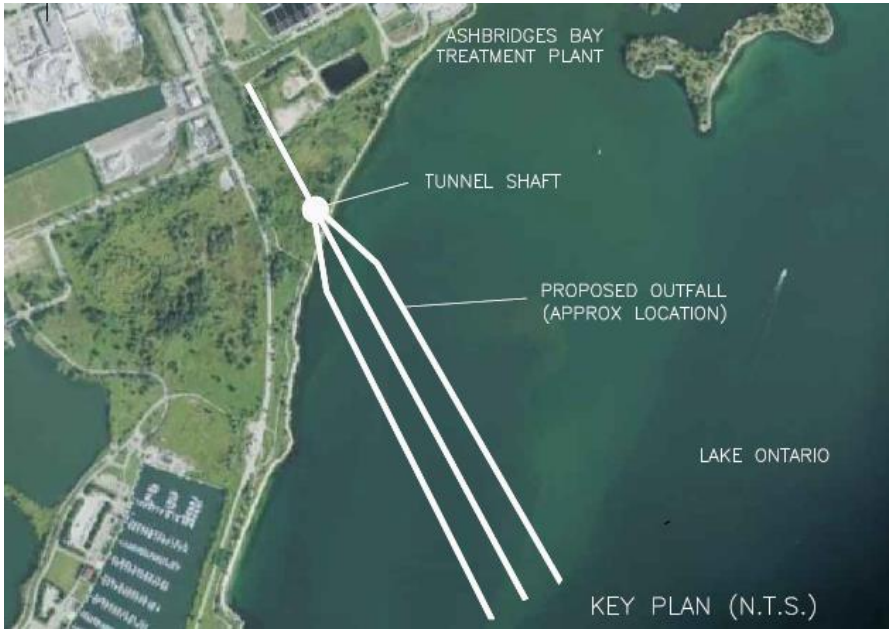
Outfall Major Components



New Outfall Cost Estimate

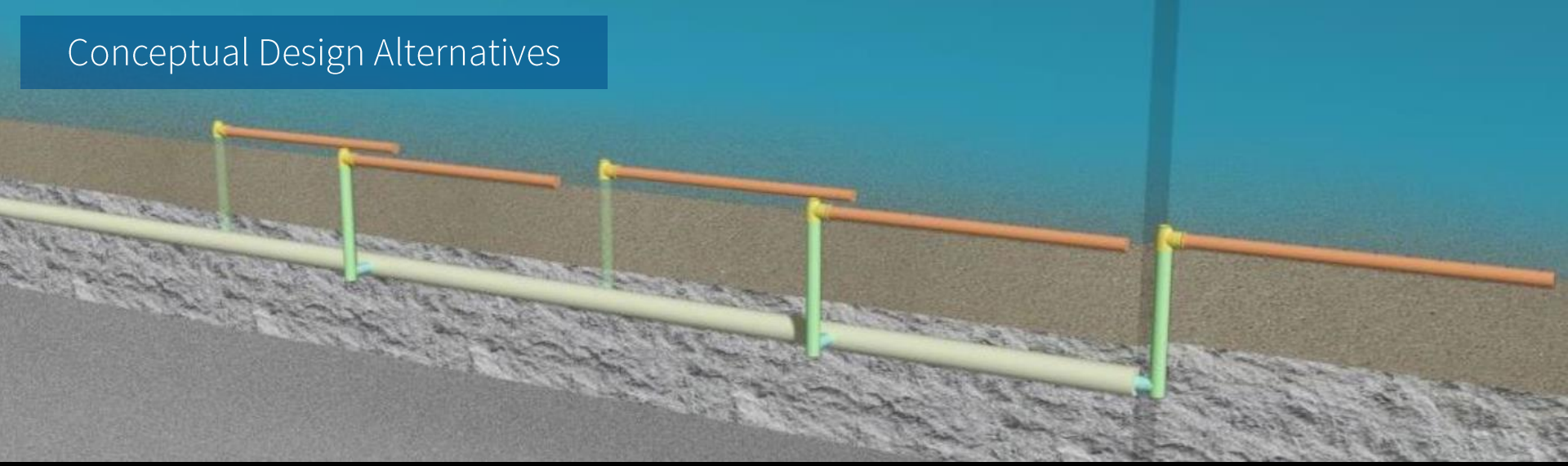


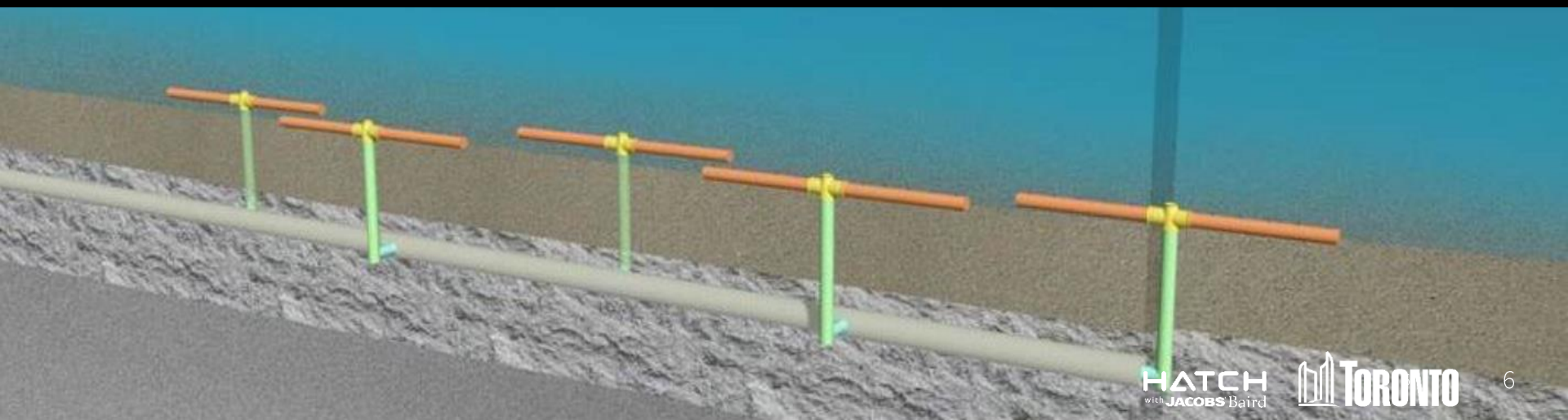




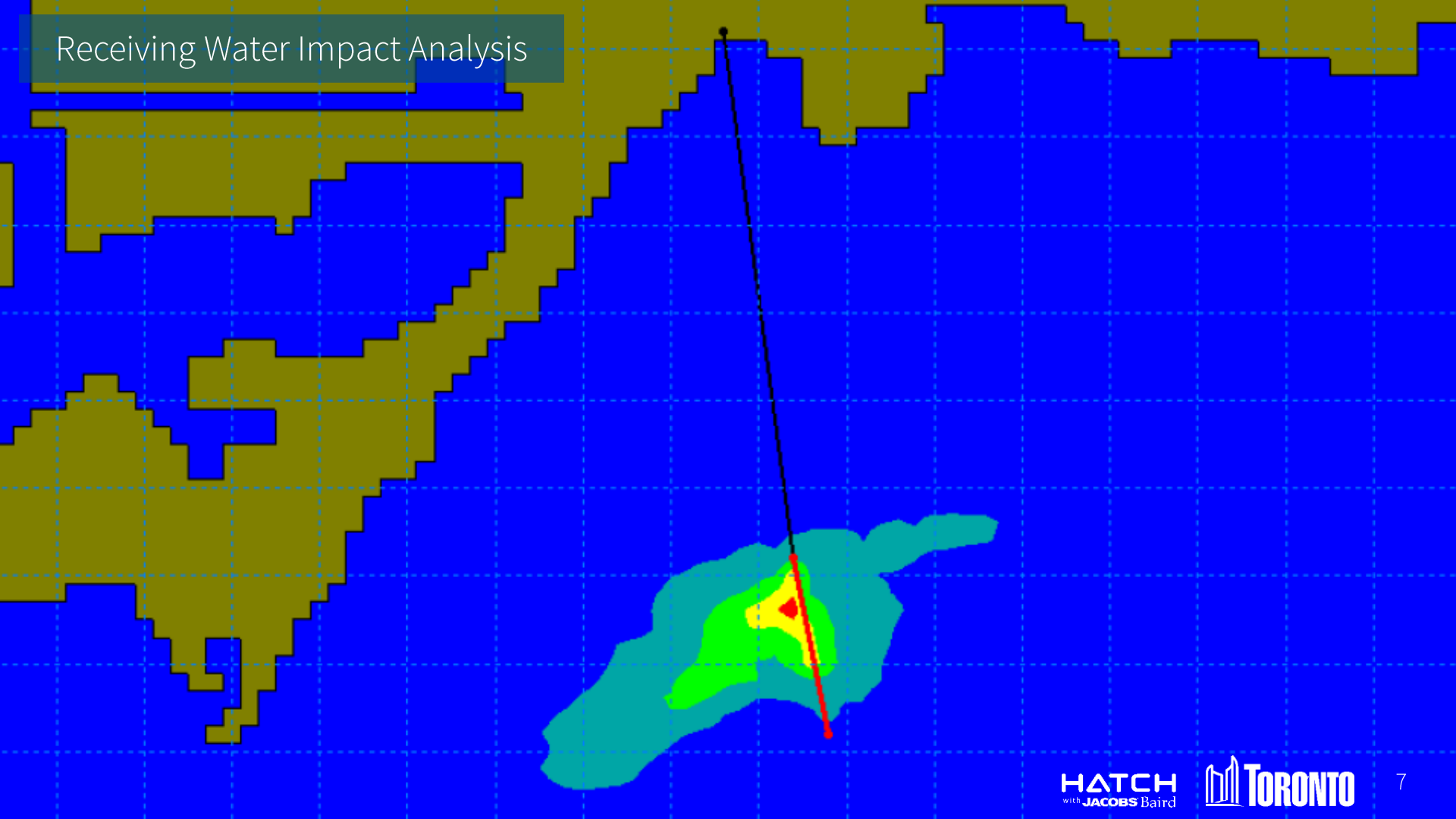
Outfall Description	Total Cost	Construction Mid-Point
Trip Conduit, Open Cut	$302M	2014 CAD
Triple Tunnel	$351M	2016 CAD
Single Tunnel	$281M	2015 CAD

Conceptual Design Alternatives



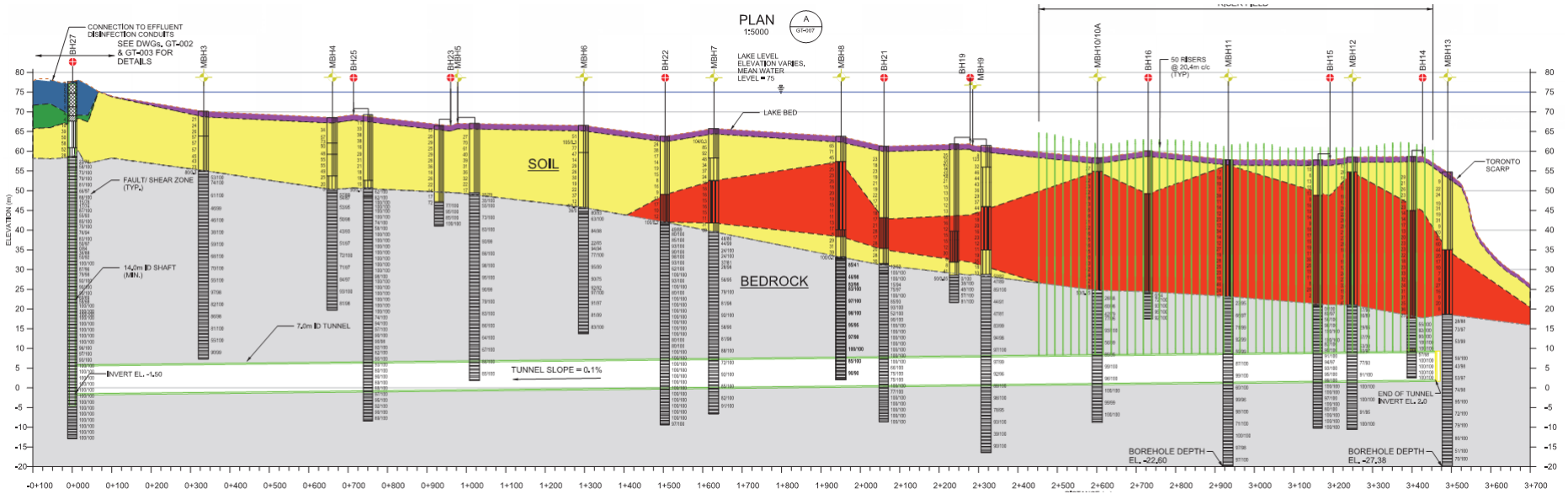


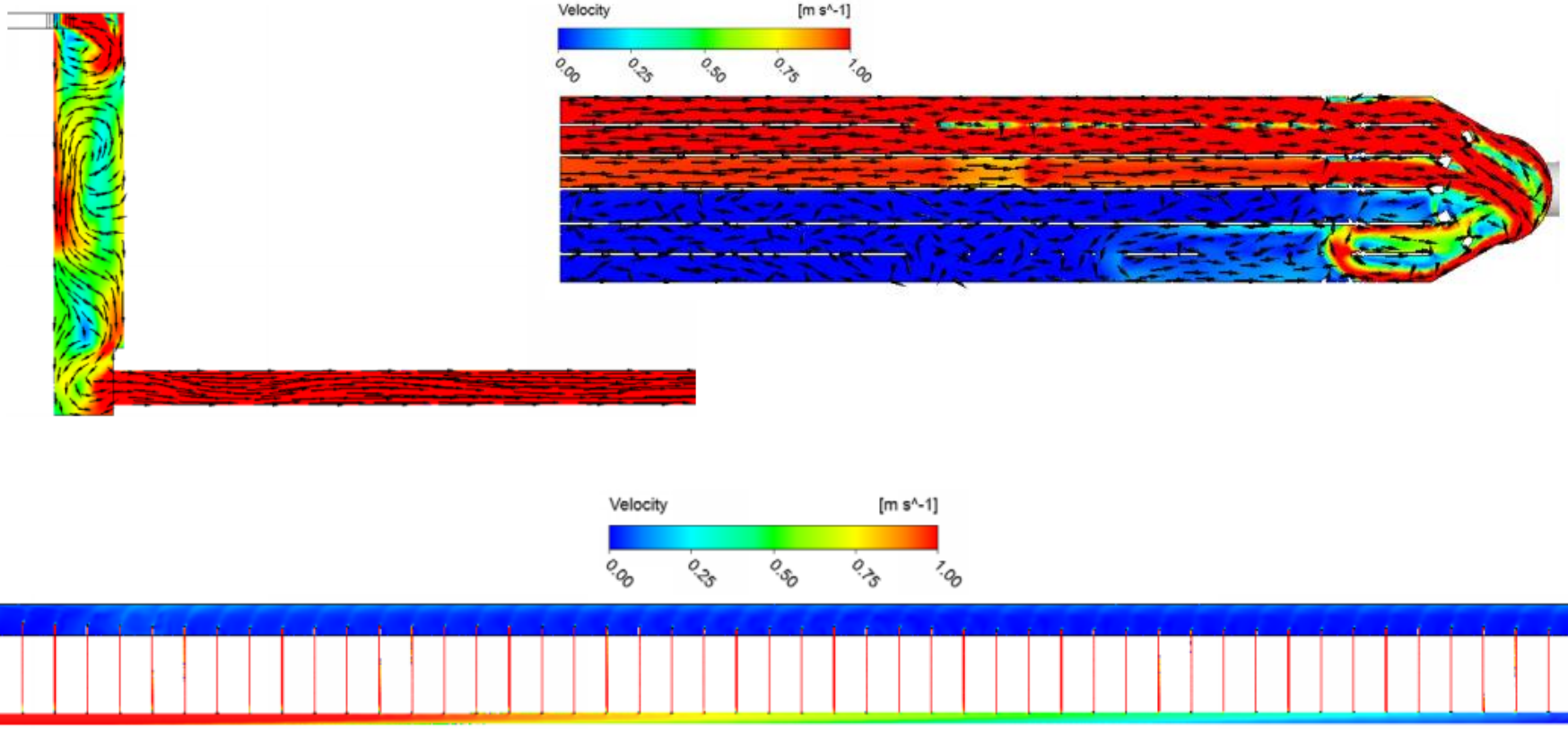
Receiving Water Impact Analysis



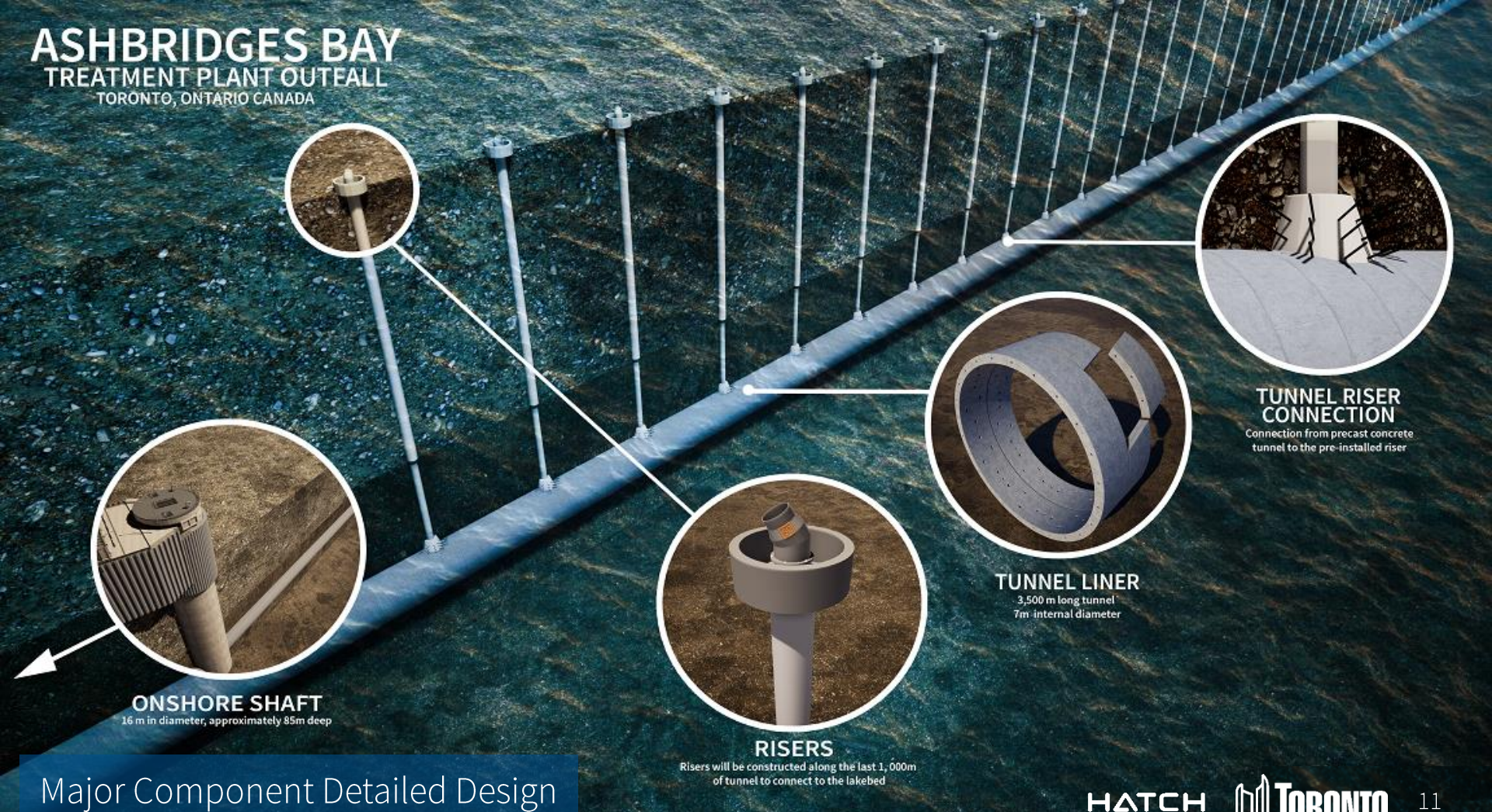
Off-Shore Geotechnical Investigations

Geotechnical Baseline Report





Hydraulics & Computational Fluid Dynamics



Major Component Detailed Design


TORONTO
Building a great city together
Ashbridges Bay Treatment Plant (ABTP)
Outfall Construction
The outfall is the point where effluent (treated wastewater) is discharged into Lake Ontario. The new outfall will:
Be 7 m in diameter, extending 3.5 km out into Lake Ontario, well below the lakebed.
Include 50 risers to disperse treated effluent.
Provide additional capacity — especially important during heavy rainstorms to help manage the flow of stormwater that reaches the plant.
Construction includes tunnelling from an onshore shaft and water barges to drill the risers.
Call 3-1-1
toronto.ca

Mobilization – January 2019

Site Compound – June 2019

Off-Shore Work – Can & Casing Installation

Shaft Secant Piles & Excavation

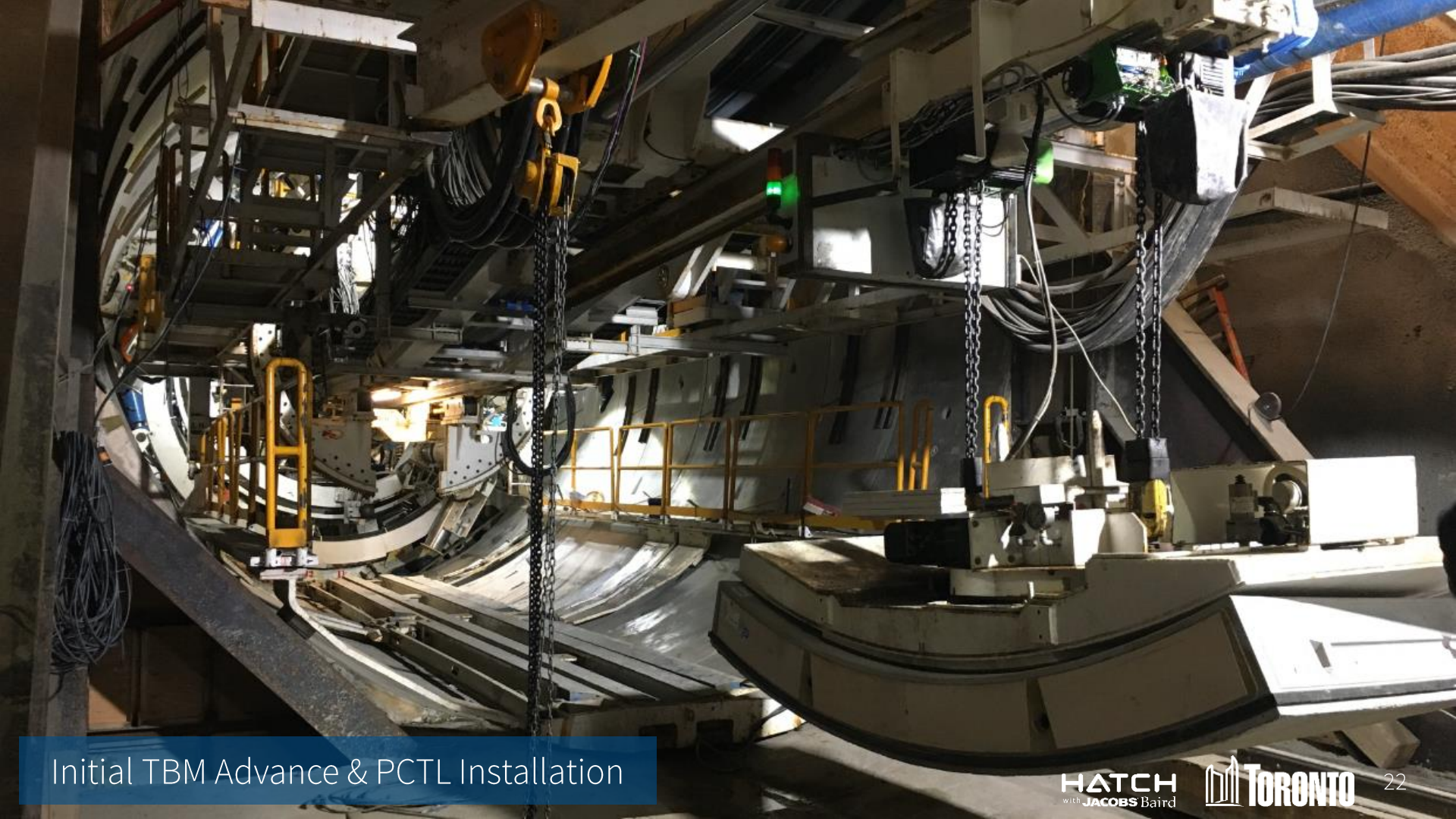
Initial Starter Tail Excavation

Final Starter Tunnel Excavation

Starter Tunnel Mud Slab & Rails

TBM Cutterhead Lowering

TBM Thrust Frame Installation



Initial TBM Advance & PCTL Installation

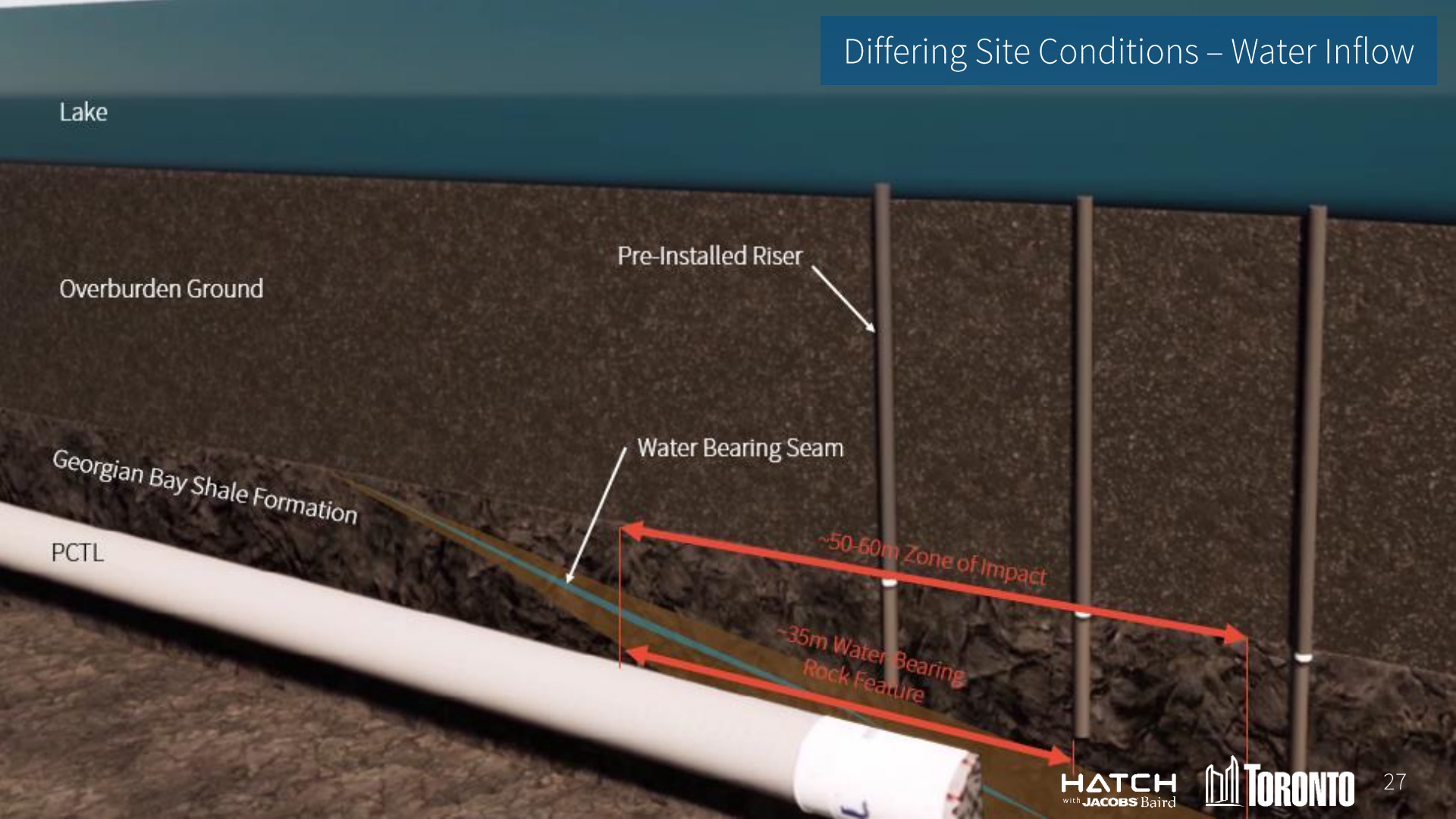
Off-Shore Work – Barges & Tugboats

Off-Shore Work – Riser Installation

TBM Tunnelling & PCTL Installation

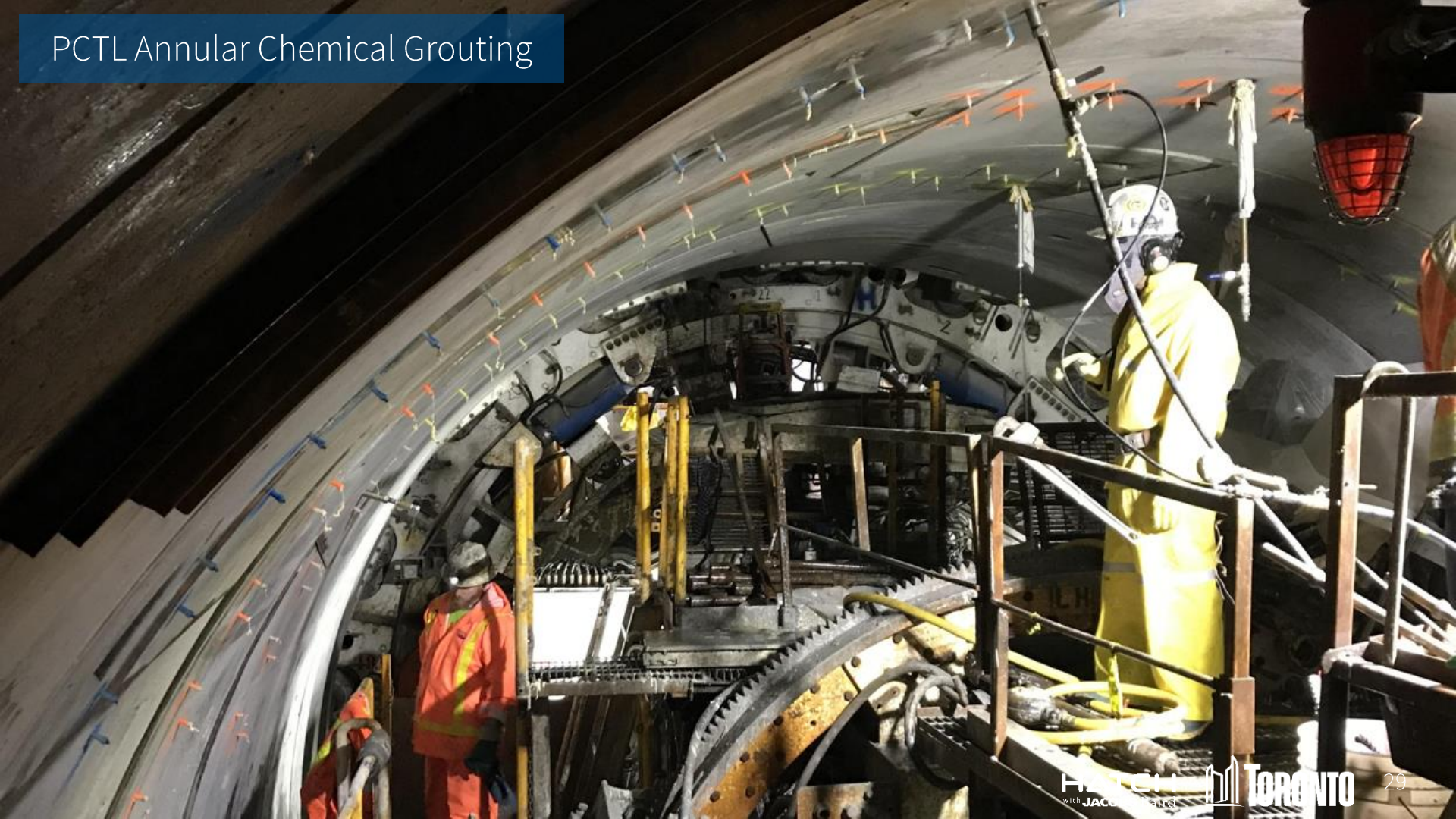
Tunnelling & Water Inflows

Differing Site Conditions – Water Inflow



PCTL Support & Annular Grouting

PCTL Annular Chemical Grouting



Tunnelling & Water Inflows, Again

PCTL Support & Chemical Grouting

TBM Tunnelling Completion

TBM Decommissioning

TBM Abandonment

Tunnel Bulkhead

Tunnel Riser Connections

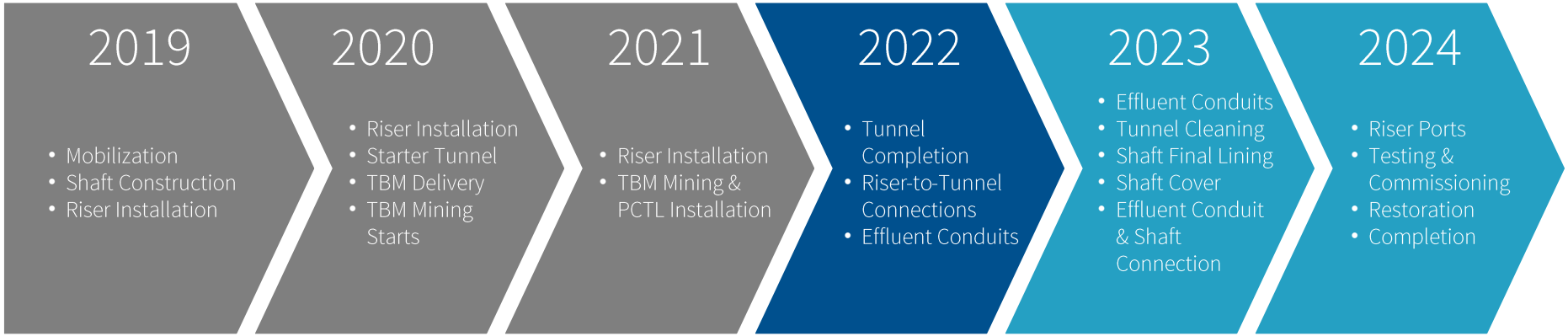
Bottom of Riser Plug & Draining

Riser Pipe Draining to Tunnel

Disinfection Effluent Conduits

Outfall Effluent Conduits Connection

Overall Schedule



Thank You.


SUNDAYS, 8 ET/PT
IMPOSSIBLE REPAIRS
S1E6: BIG CITY TUNNEL BORING