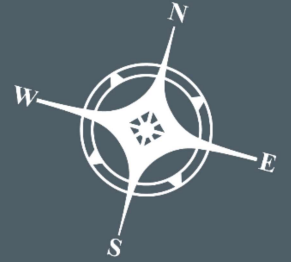


Carnarvon Dredging and Babbage Island Spit Stabilisation

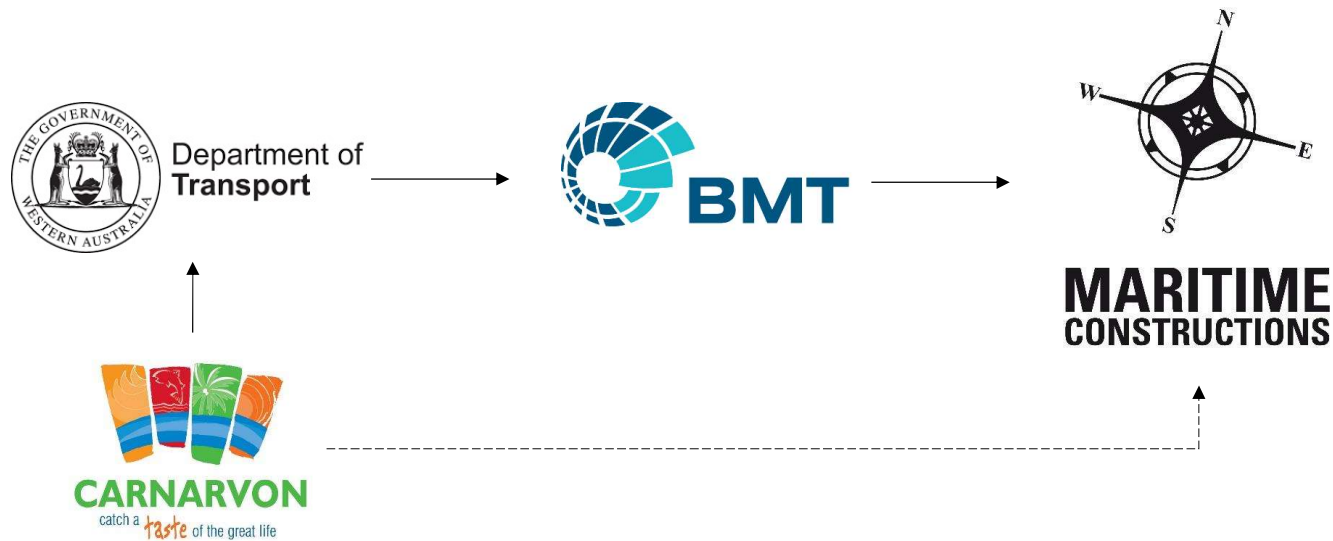


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Site Works



Introduction



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Site Layout



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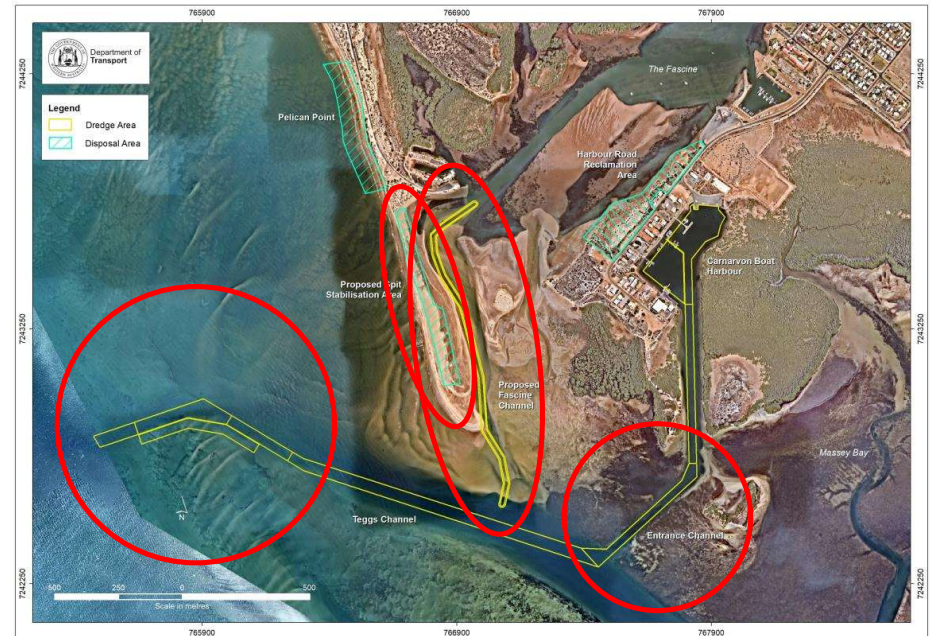
Scope of Works

Dredging

1. Dredging Teggs Channel
2. Dredging Boat Harbour Channel
3. Dredging *new* Fascine Entrance Channel

Dune Construction

- Reclamation all material to Baggable Island Spit to design profile
- Sand stabilisation & revegetation



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Project Challenges & Achievements

- Accelerated timeline due to Government commitments
- Dune design flexible to accommodate unknown volume
- Clays in Fascine dredge area → impacts on dredging and reclamation
- Mix of dredging conditions and minimal downtime
- High indigenous engagement (employment and spend)

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Dredging Works

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Dredge Selection: competing interests

Cutter Suction Dredge

- Offshore maintenance dredging exposed to wind and sea
- Capital new-channel dredging protected by spit

Selected 3-point anchored CSD with high pumping capacity



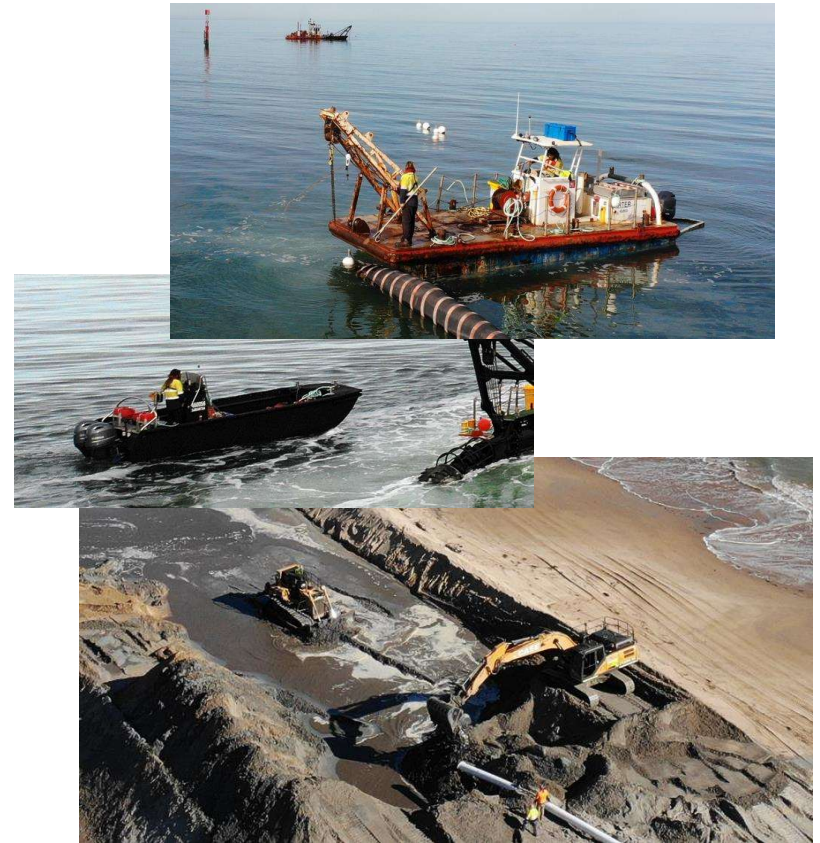
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Auxiliary Equipment

- Anchor Handling Vessel (AHV)
- Crew / Tender / Safety Vessel
- ~2km DN400 pipeline
- Booster Pump
- Swamp-track Dozers (D6)
- Excavator (30T)
- IT Loader (966)

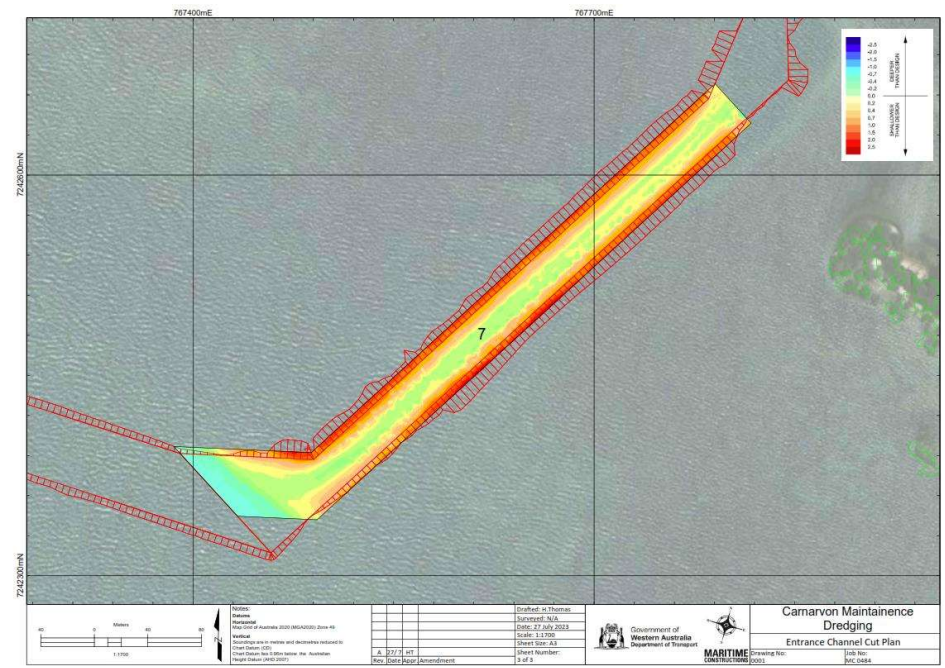
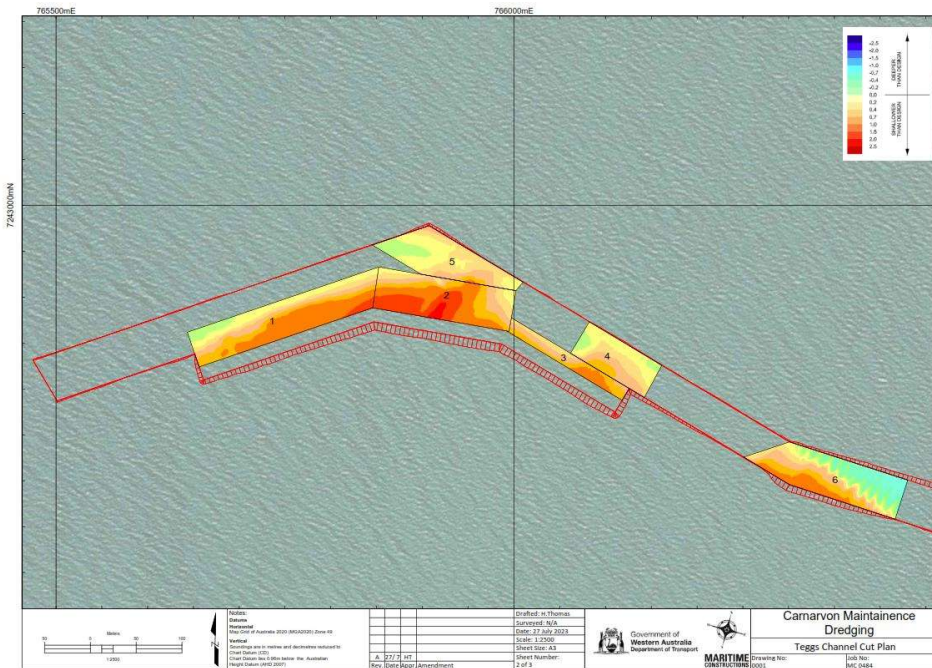


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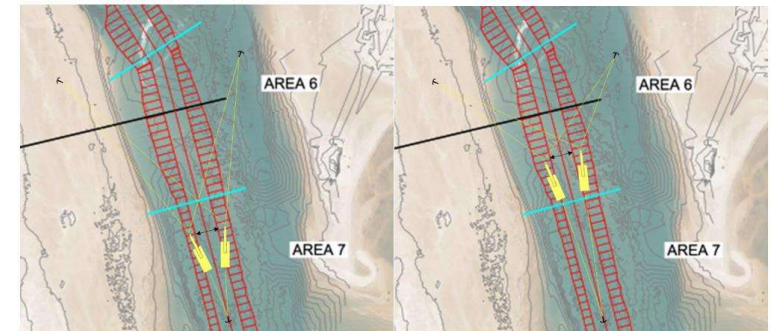
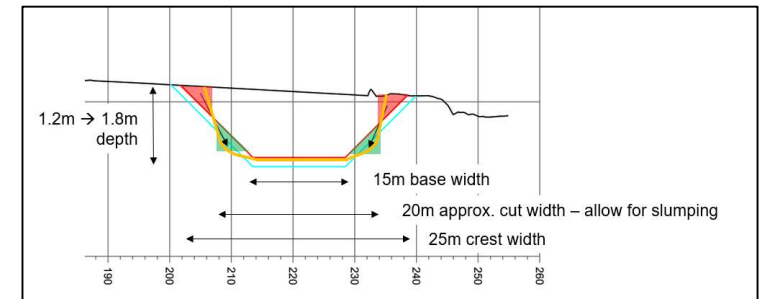
Maintenance Dredging



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Capital Dredging – new channel



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Dredging Works – summary

- Teggs Channel: 36,000m³
from July to September 2023
- Fascine new channel: 101,000m³
from October to December 2023
- Boat Harbour Approach 16,000m³
in January 2024

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Reclamation Works & Dune Construction

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Reclamation of dredge spoil

- Initial swale system – high retention time = maximum material capture
- Working area decreased as dune was completed



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Dune Construction

- Final dune shape was to mimic a natural dune.
- Design allowed wide tolerances but required surface variety in 3 directions
- To minimise re-working to the specification, material was captured at the outfall point and immediately shaped to the final design while ‘wet’
- The final dune shape to its final design “grew” as the dredging progressed



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Dune Construction – Design & Setout

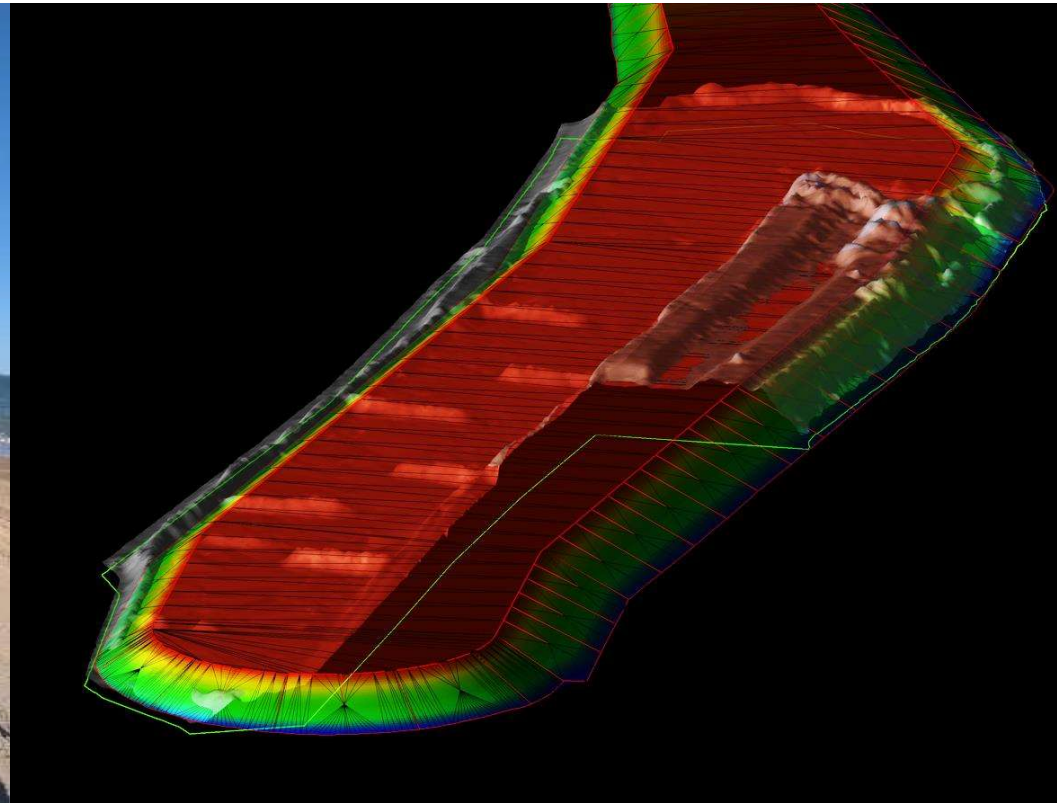


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Dune Construction – Progress Survey



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Dune Construction – Fascine & Clays



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Stabilisation – Drift Fence and Matting



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(Ex) Tropical Cyclone Lincoln



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Result: Completed Dune Construction

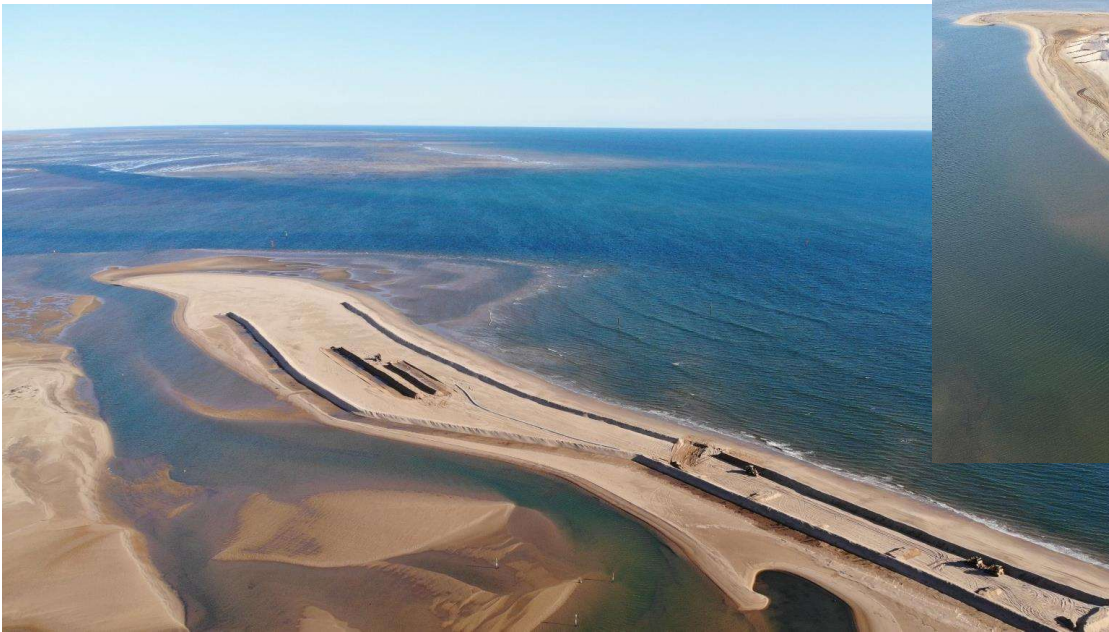


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Before



After



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Before



After



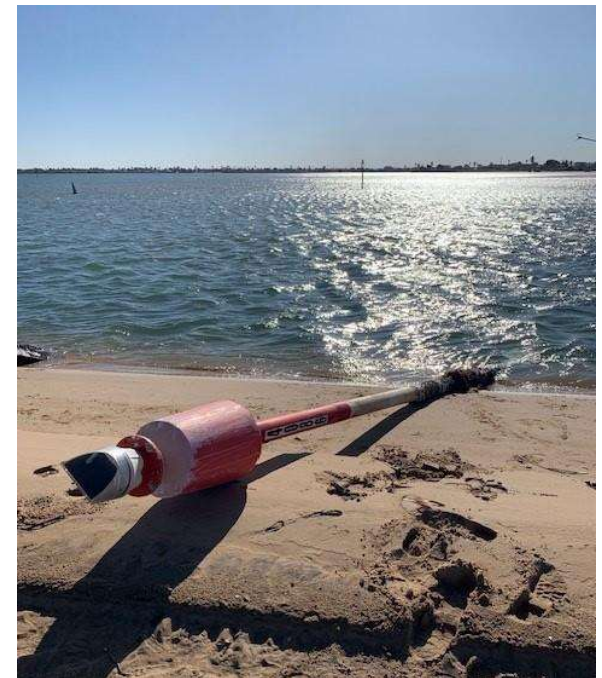
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Additional (& unexpected) Work Scopes

- NavAid removal added to scope to allow dredging works
- Old Jetty Piles found within dredge footprint (Heritage jetty of significance)
- Marine Fauna monitoring
- Turtle nests & hatchlings identification and management



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Historic Jetty Piles

- Dive Team mobilised for rigging and removal
- Extracted using AHV onsite
- Inspected and catalogued by WA Museum archaeologist
- Buried locally on the spit

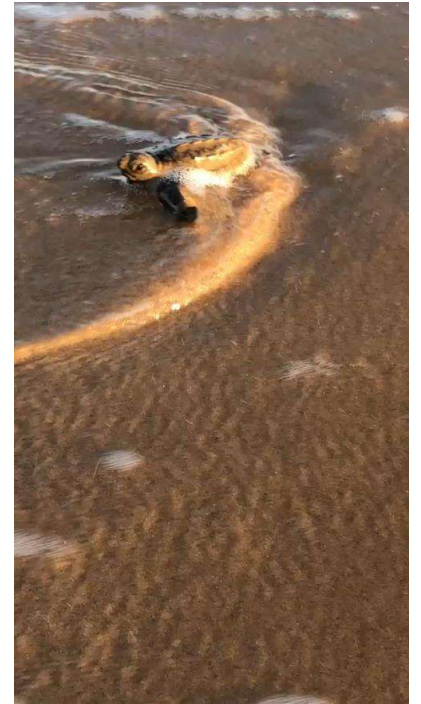


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Turtle Nests & Hatchlings



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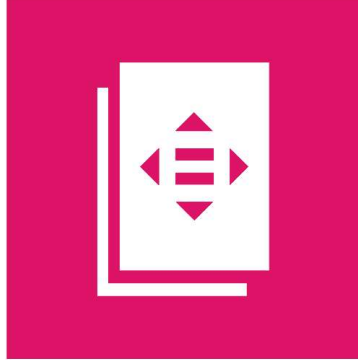
UN SDG #10: Reduced Inequalities

TARGET 10-3



ENSURE EQUAL OPPORTUNITIES AND END DISCRIMINATION

TARGET 10-4



ADOPT FISCAL AND SOCIAL POLICIES THAT PROMOTES EQUALITY

Strategic long-term partnerships produce best results



29.5% Indigenous employment by person-hours on site

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UN SDG #14: Life Below Water



TARGET 14.2

PROTECT AND RESTORE ECOSYSTEMS



TARGET 14.5

CONSERVE COASTAL AND MARINE AREAS

- Contractors “on the front line” on marine projects
- Whole site crew should be conscious of environmental impacts
- Taking an active role in monitoring, reporting and compliance is key

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Acknowledgements



Department of
Transport



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Questions?



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