

# Bowen Jetty Project

Enquiry by Design  
Workshop  
March 2024



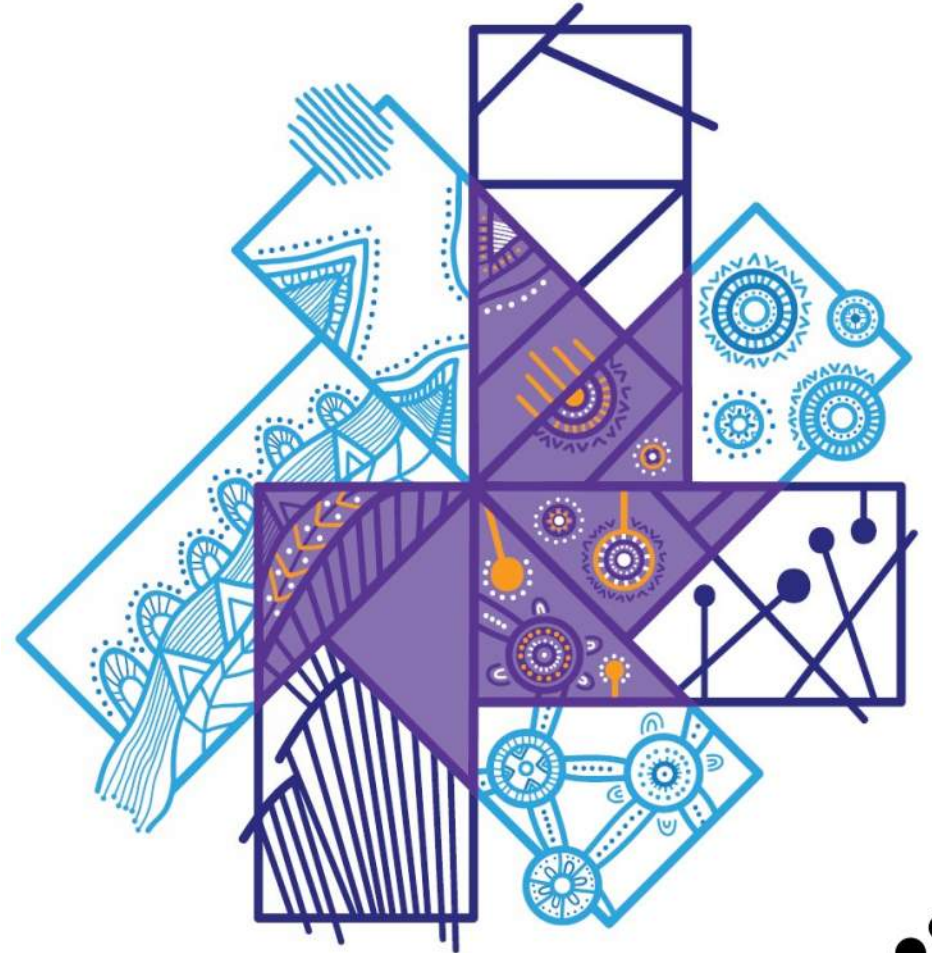
ARUP



# Acknowledgement Of Country

We acknowledge the Traditional Owners of the land on which this project takes place, the Juru people and we thank them for hosting us on Country today.

We pay our respects to Elders past, present, and future, and hold deep respect for the wisdom of their enduring Custodianship of the lands on which we live, work and play.



Melanie

# Enquiry by Design - Agenda



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## 1. Welcome And Project Overview – 10 min

- Bowen Jetty Overview
- Project Objectives & Considerations

## 2. What You've Told Us – Survey Results 5 min

## 3. What We Know So Far – 20 min

- Structure
- Economics
- Juru People
- Heritage (European)
- Environment
- Site Understanding

## 4. Develop the Place Brief

- Project examples to inspire creative thinking - 5 min
- Let's get creative – 60 min
- Share Your Ideas – 15 min

## 5. Conclusion And Next Steps – 5 min



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# Introductions – Arup Team



**Shy Tay**

Project Director | Architect



**Maja Belic**

Project Manager | Architect



**Dana Burrows**

Community Engagement



**Melanie Grills**

First Nations Engagement



**Marco Necchi**

Maritime Engineer



**Stephanie Palmer**

Architectural Support



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# Introductions – NQBP Team



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**Tim Lewis**  
General Manager  
Infrastructure



**Hossein Saadai**  
Senior Manager  
Engineering & Planning



**Nawar Spear**  
Project Director



**Stacey Gibson**  
Senior Advisor Stakeholder  
Engagement



**Julie Keane**  
Principal Development  
Advisor



**Sally Sala**  
Principal Planner



**Kelvin Power**  
Port Service Worker



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# Housekeeping

- Help yourself to refreshments during the session
- Emergency procedures
- Toilets
- Agreed workshop behaviours – to get the most out of today we all agree to:



**Be respectful**



**Keep an open mind**



**Be part of the conversation**



**Be on time and stick to the agenda**



**Tackle problems, not people**



**Have fun!**



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# The Design Journey

## DESIGNING THE BOWEN JETTY TOGETHER

### Community engagement process



#### Discover

What's important  
Big ideas



#### Design

Bring the ideas  
together



#### Consult

On the draft  
concept



#### Refine

Incorporate feedback  
Approvals, funding  
and delivery

February/ March 2024

- BCE Breakfast
- Stakeholder and community meetings
- School engagement
- Community pop up stall
- Juru People engagement
- Two-day Enquiry by Design Workshop with community reference group
- Project webpage to follow the design journey and have your say

April/ May 2024

- Enquiry by Design workshop feedback with community reference group
- Juru People engagement
- Consultant develops design options
- Project webpage updates to follow the design journey and have your say

June 2024

- Share design options for feedback
- Advertising
- Flyer letterbox drop
- Stakeholder and community meetings
- Community pop up stalls
- Juru People engagement
- Online survey - have your say
- Project website updates to follow the design journey

July 2024 - onwards

- Refine and finalise concept design following feedback
- Advertising
- Community reference group meetings
- Juru People engagement
- Project website updates on project plan and delivery pathway



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## OVERVIEW OF WORKSHOP

- Share what we know about the constraints and the opportunities
- Invite community stakeholders to come up with creative ideas on the future Bowen jetty
- EbD workshop is part of a series of community engagement during the Discover phase
- EbD consultation will inform our design approach to:
  - Define the **place brief**, aligns expectations, before design begins
  - Identify the **right uses** and **facilities** to incorporate into the design
  - **Better plan for current and future needs**





## PARKING LOT

- **What** – The Parking Lot is a place to record issues and ideas relevant to project but outside the discussion and focus of the EbD activities. These will need to be further unpacked by project team after the EbD
- **How** – Record issues / ideas on a post it note and stick it on the Parking Lot panel.





# BOWEN JETTY OVERVIEW

# Bowen Jetty – Overview

- Valued community facility
- Constructed late 1860s
- Reconstructed and extended up to 1950s
- Timber deck structure, concrete piles, headstock and head structures are deteriorating and nearing end of life
- In 2021 \$3.6m was spent on priority repairs across all stems focusing on timber superstructure: 66 timber girders, 12 corbels, 132 beams, 550m<sup>2</sup> decking ply and >0.5km of timber deck planks.



# Bowen Jetty - Overview



## **PUBLIC ACCESS JETTY:**

- Access for walking, fishing and other general recreational activities
- State Government has allocated \$50m for the future jetty

## **TUG OPERATIONS JETTY:**

- Mooring for tugs that service the Port of Abbot Point
- NQBP has allocated funding for demolition





# PROJECT OBJECTIVES & CONSIDERATIONS

# Project Objectives



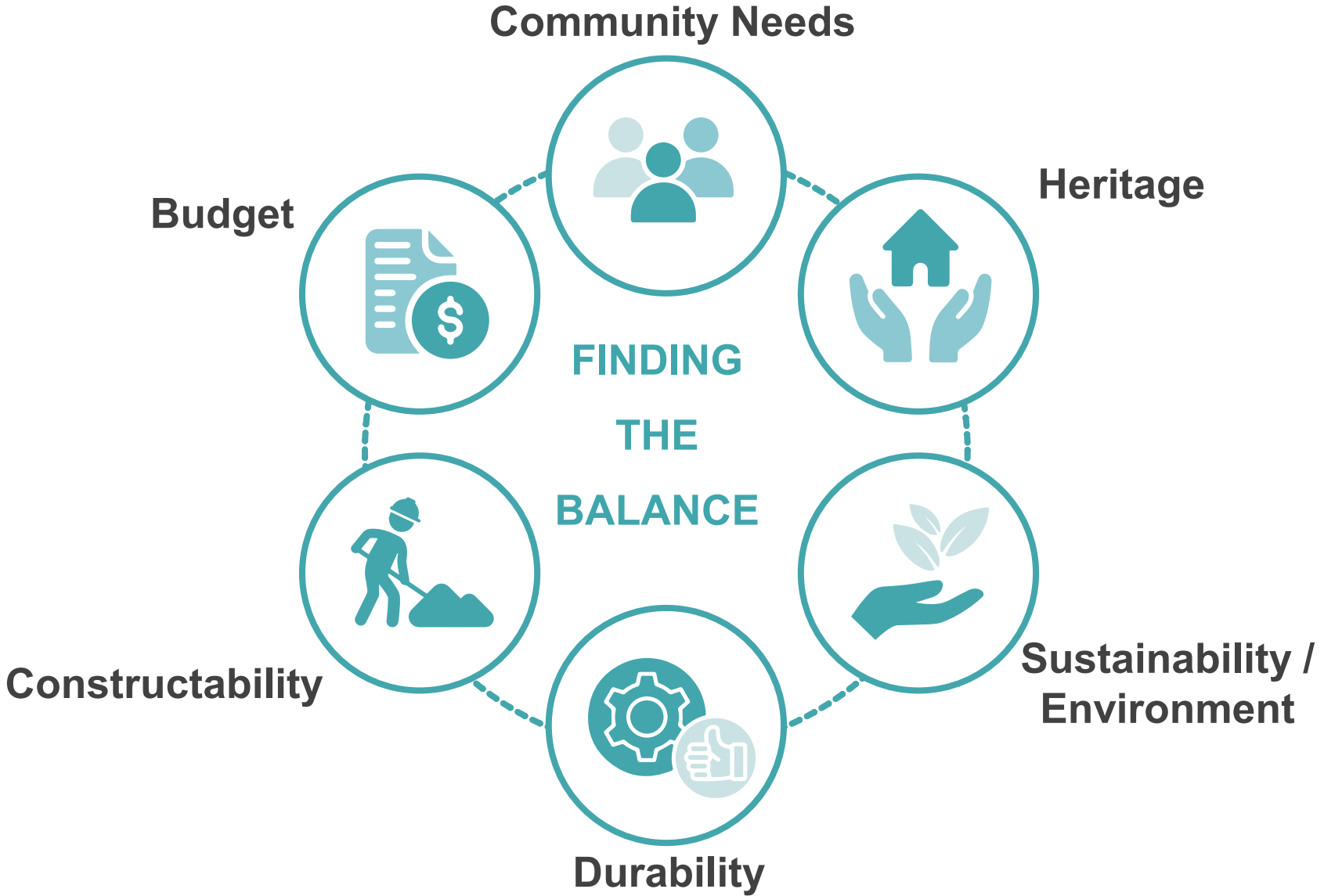
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- Ensuring the jetty can continue to be a **valued landmark** and **community asset** into the future
- Developing a **concept design** for a **low-maintenance** and **resilient** jetty, that will continue to be a landscape icon for Bowen for future generations
- Ensuring, through a well-considered **engagement** process, the jetty is widely **supported** by the **community** and **stakeholders**
- Delivering the project within **budget** and within the **project boundary** with allowance for **operational maintenance costs**, with a high standard of compliance with **safety and environmental** requirements
- Ensuring **sustainability**, preservation of **cultural** and **heritage values** and support for local jobs and suppliers are core considerations of the project.



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# Project Considerations





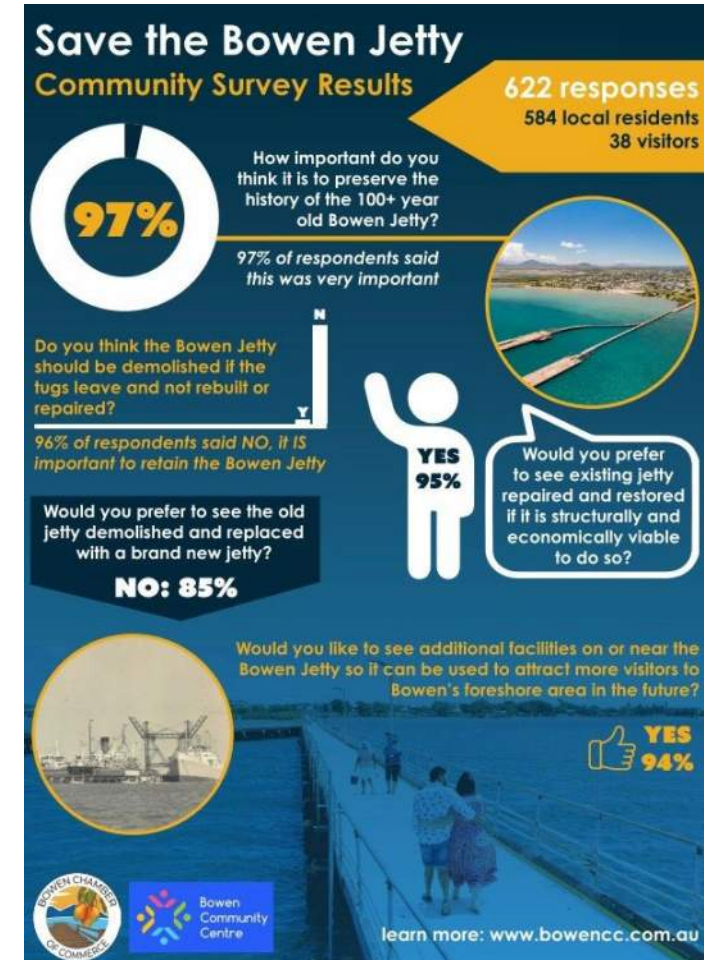
# WHAT YOU'VE TOLD US



# Save The Bowen Jetty Survey

## OVERVIEW

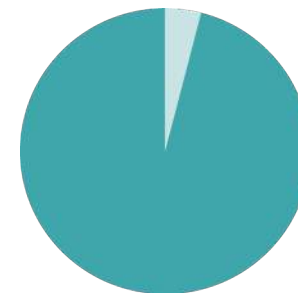
- The Save the Bowen Jetty Community Survey was conducted by the Bowen Chamber of Commerce Inc. to gather information from the Bowen community about how the Bowen jetty may be used by the community in the future.
- The survey was:
  - Open for 4 months from Nov 2023 to Mar 2024
  - 622 responses - 584 local residents | 38 visitors.
- The survey was invaluable to our process, and we want to dive deeper into the results and how we can address these in the design.



# Save The Jetty Survey – Key Outcomes

1. How important do you think it is to **preserve the history** of the 100+ year old Bowen Jetty?

**97%**  
Very Important



2. Do you think that Bowen Jetty should be **demolished** if the tugs leave and not rebuilt or repaired?



**96%**  
Said No

3. Would you prefer to see the old jetty **demolished and replaced** with a brand-new jetty?

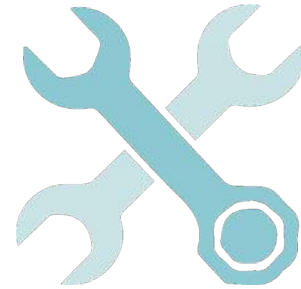
**85%**  
Said No



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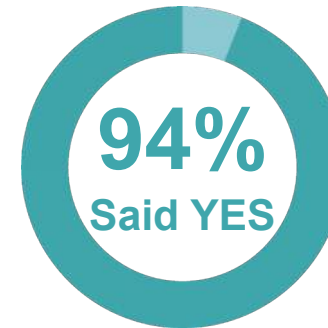
# Save The Jetty Survey – Key Outcomes

4. Would you prefer to see existing jetty **repaired and restored** if it is **structurally and economically viable** to do so?

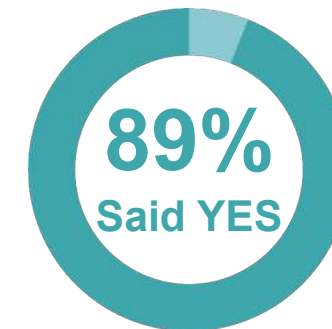


**95%**  
Said Yes

5. Would you like to see **additional facilities** on or near the Bowen Jetty so it can be used to attract more visitors to Bowen's foreshore area in the future?



6. Do you think that the jetty could be used for **water-based activities** such as for boat trips, fishing charters, diving, sailing, jet ski hire etc.?



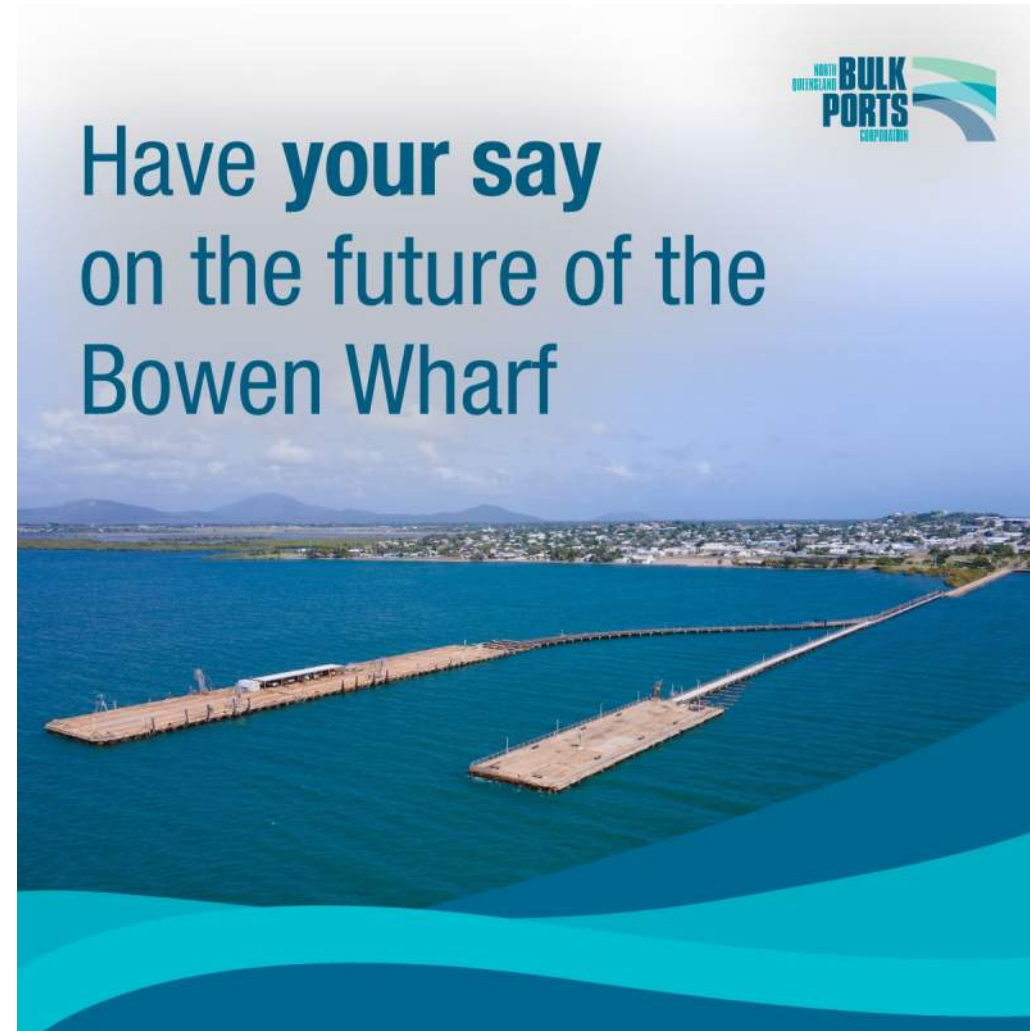
# NQBP Bowen Wharf Survey



ARUP

## SURVEY RESULTS

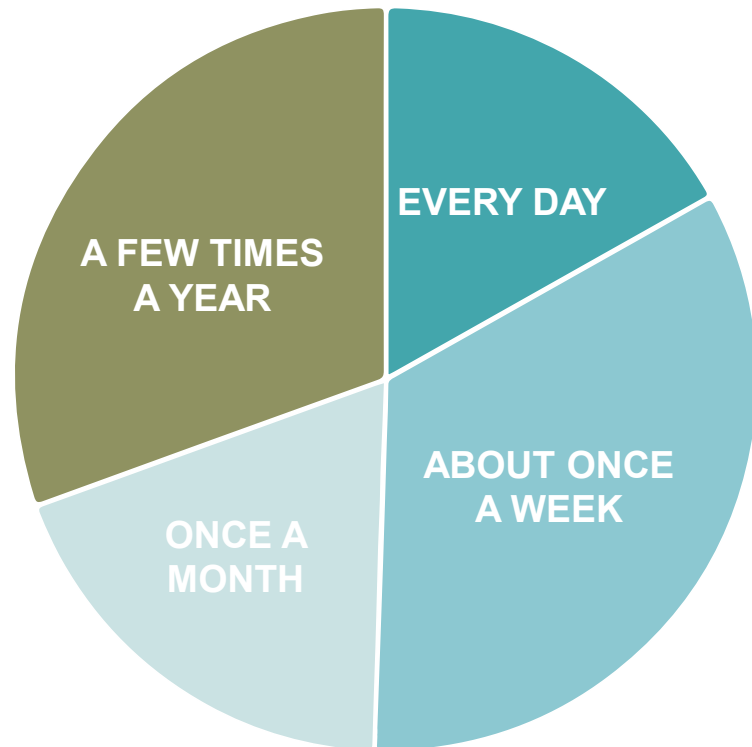
- This survey aims to build upon the Save The Jetty survey and inform the design process
- So Far:
  - Open for 2 weeks, 2 more to go
  - 95 responses – 92 local residents | 3 visitors



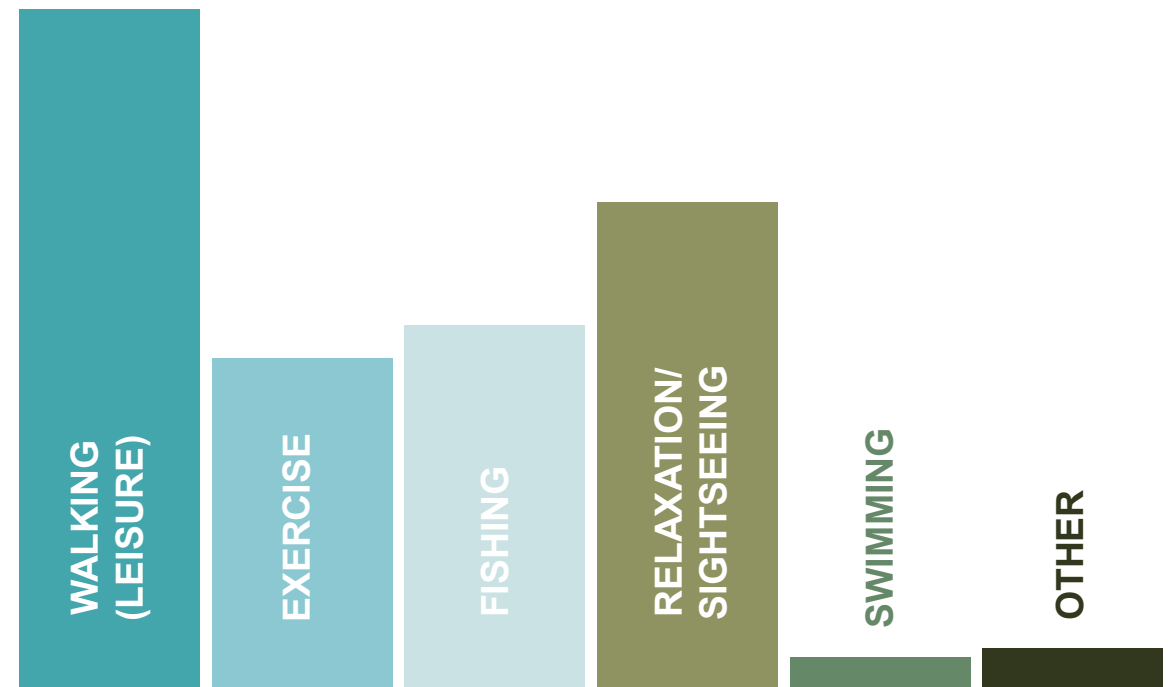
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# Survey Results – To Date

Q1: How often do you **visit/use** the Jetty now?



Q2: **How** do you **use** the Jetty now?

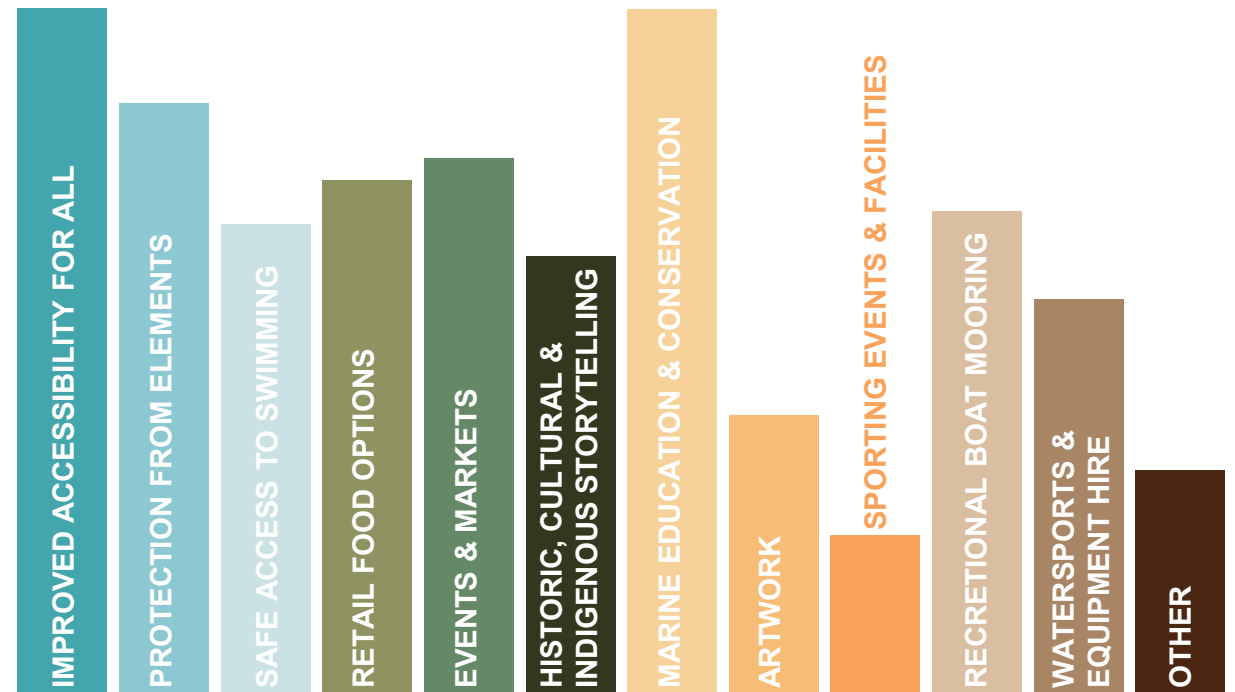
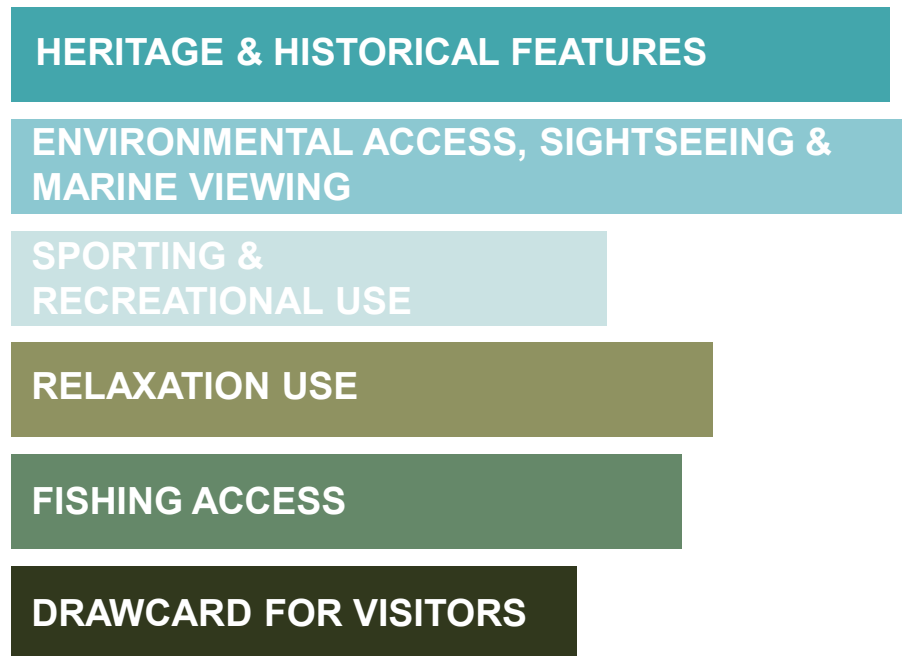


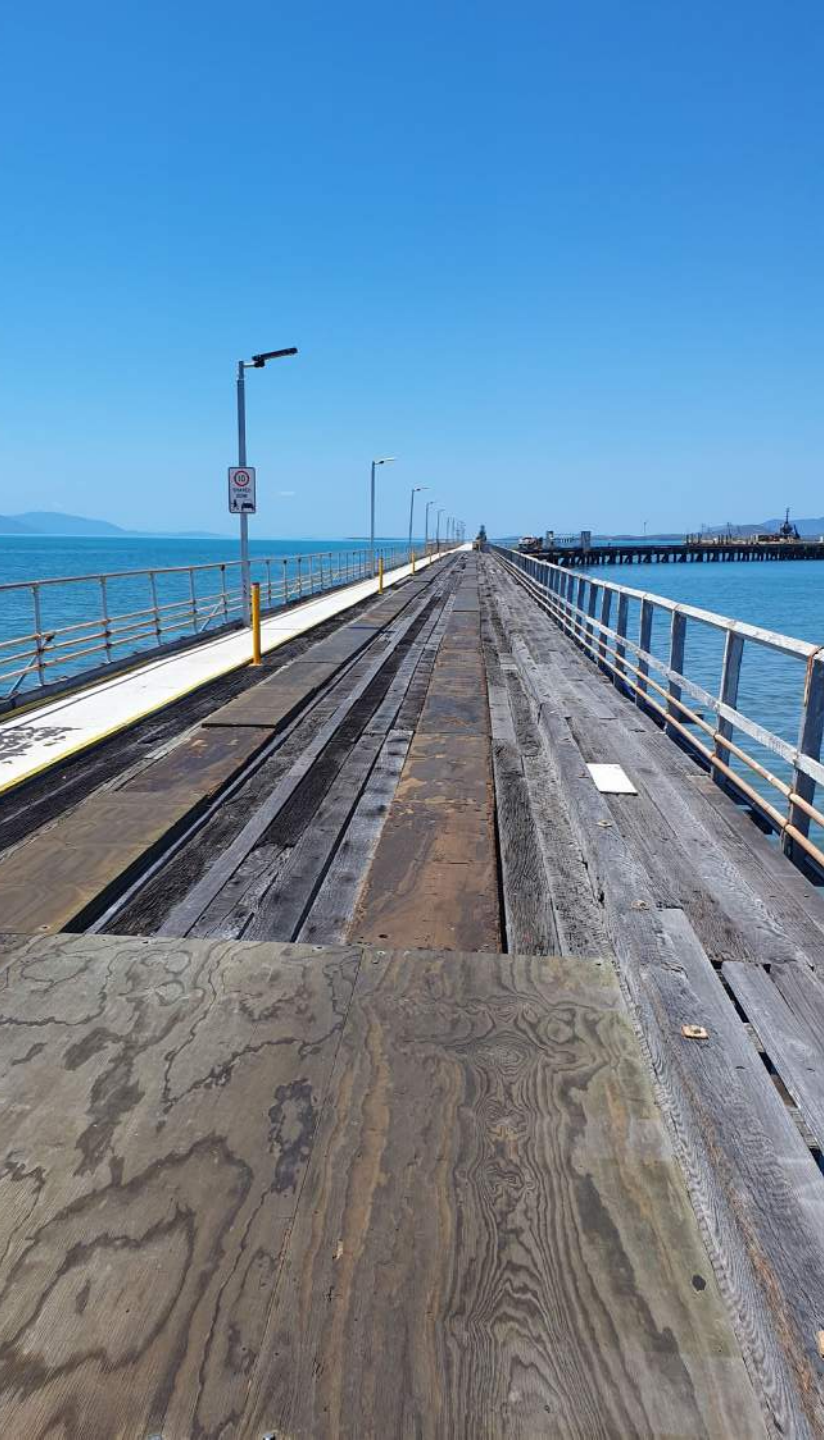
# Survey Results – To Date



Q3: What do you most **value** about the Bowen Jetty, as it is now?

Q4: What do you think could be **improved** so more locals and visitors use the Jetty?





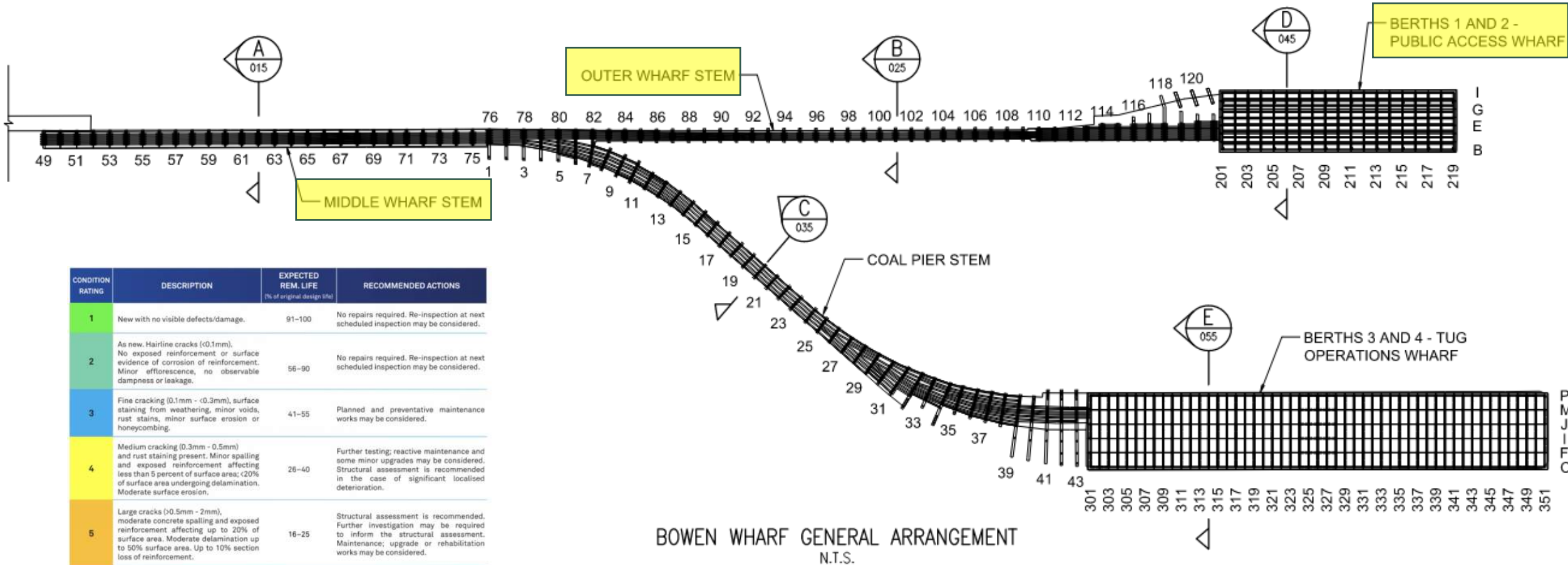
# WHAT WE KNOW SO FAR



# STRUCTURE



# Structure – Bowen Wharf Layout

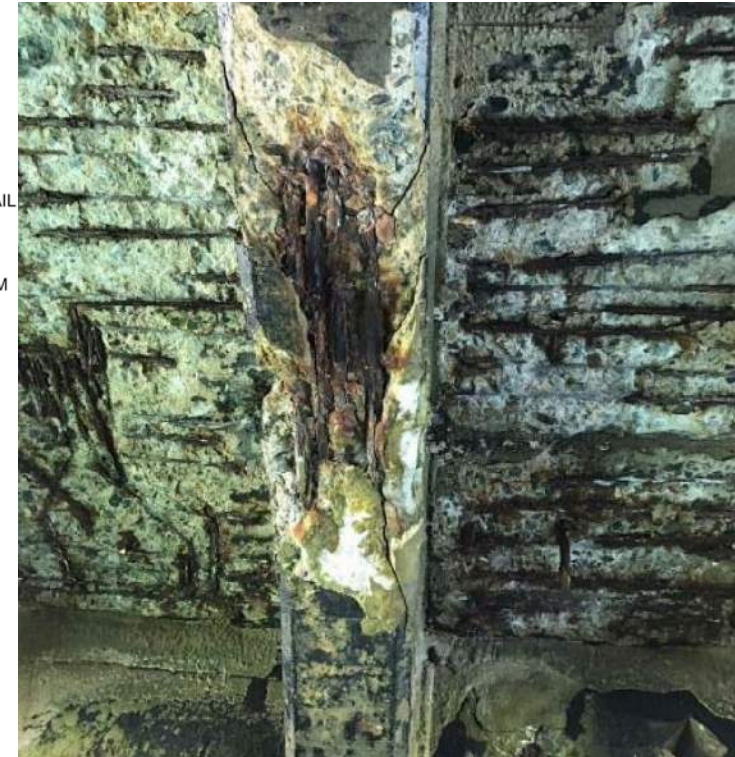
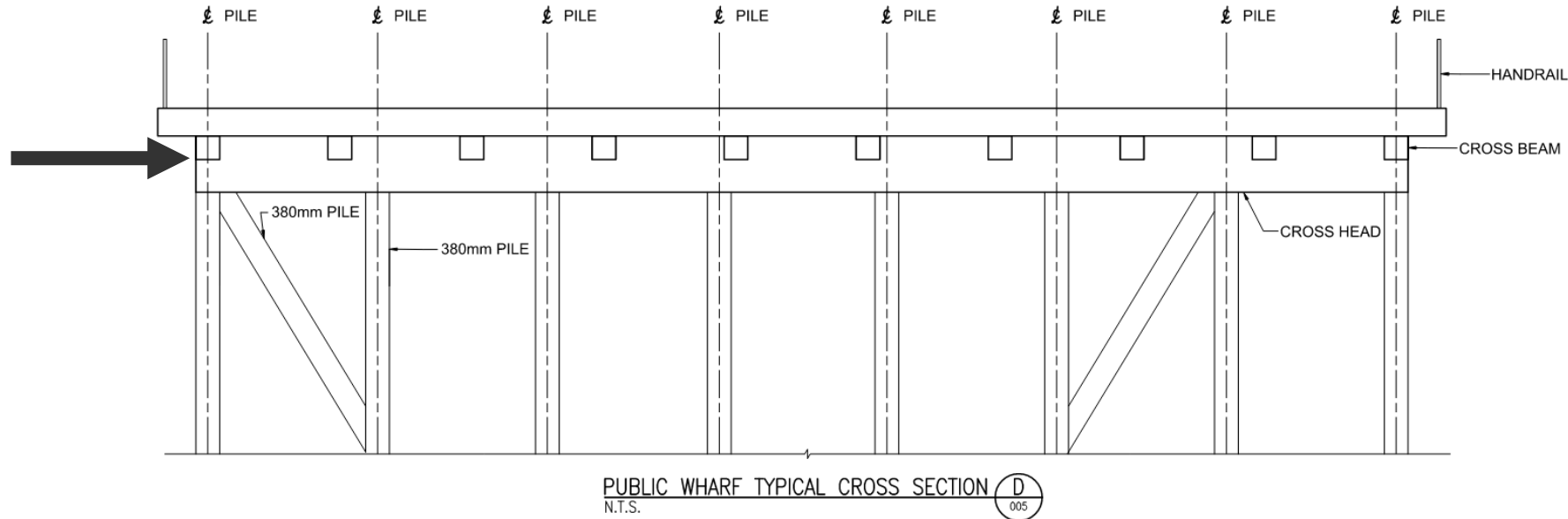


CONDITION RATING	DESCRIPTION	EXPECTED REM. LIFE (% of original design life)	RECOMMENDED ACTIONS
1	New with no visible defects/damage.	91-100	No repairs required. Re-inspection at next scheduled inspection may be considered.
2	As new. Hairline cracks (<0.1mm). No exposed reinforcement or surface evidence of corrosion of reinforcement. Minor efflorescence, no observable dampness or leakage.	56-90	No repairs required. Re-inspection at next scheduled inspection may be considered.
3	Fine cracking (0.1mm - <0.3mm), surface staining from weathering, minor voids, rust stains, minor surface erosion or honeycombing.	41-55	Planned and preventative maintenance works may be considered.
4	Medium cracking (0.3mm - 0.5mm) and rust staining present. Minor spalling and exposed reinforcement affecting less than 5 percent of surface area; <20% of surface area undergoing delamination. Moderate surface erosion.	26-40	Further testing; reactive maintenance and some minor upgrades may be considered. Structural assessment is recommended in the case of significant localised deterioration.
5	Large cracks (>0.5mm - 2mm), moderate concrete spalling and exposed reinforcement affecting up to 20% of surface area. Moderate delamination up to 50% surface area. Up to 10% section loss of reinforcement.	16-25	Structural assessment is recommended. Further investigation may be required to inform the structural assessment. Maintenance; upgrade or rehabilitation works may be considered.
6	Major cracks (>2mm), severe concrete spalling and exposed reinforcement affecting up to 50% of surface area. Severe delamination >50% surface area. 10- 20% section loss of reinforcement.	1-15	Structural assessment is recommended. Further investigation may be required to inform the structural assessment. Rehabilitation or renewal works may be considered.
7	Very severe concrete spalling with exposed reinforcement and reinforcement section loss of > 20%. Component has failed.	0	Rehabilitation required immediately or replace component/asset. Structural assessment is recommended where rehabilitation works are to be undertaken. Further investigation may be required to inform the structural assessment.

BOWEN WHARF GENERAL ARRANGEMENT  
N.T.S.

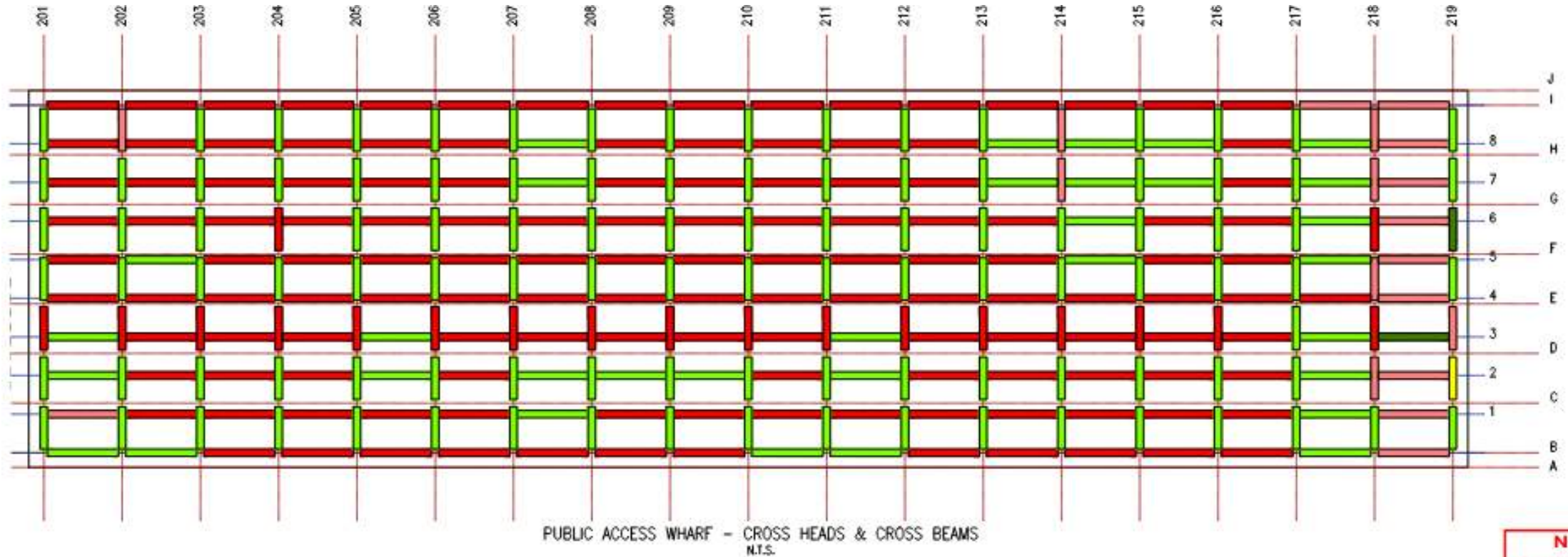


# Structure – Public Access Wharf

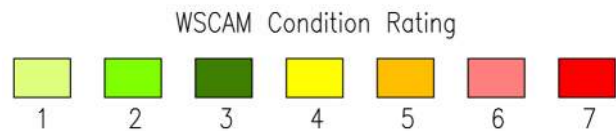


Marco

# Structure – Public Access Wharf Heat Map



NOT FOR CONSTRUCTION



## ARUP INVESTIGATION IN 2018

- Diving investigation
  - 48 piles (5%) were inspected. Most piles inspected were observed to have cracking, generally vertical.
- Concrete condition testing
  - 20 test locations with no visually observed deterioration were selected. Generally, the tested reinforced concrete elements indicated a high risk of corrosion.



# Structure – Dive Inspection 2018

## 3.2 OUTER WHARF STEM

Five out of the eight piles inspected at the outer wharf stem have vertical cracking as a result of, what appears to be, reinforcement corrosion within the piles.

As well as cracking, there appeared to be evidence of 'corrosion bleeding' at pile number P115-C as can be seen in the adjacent photo.

A comprehensive defect summary can be referenced in the Pile data sheet provided.

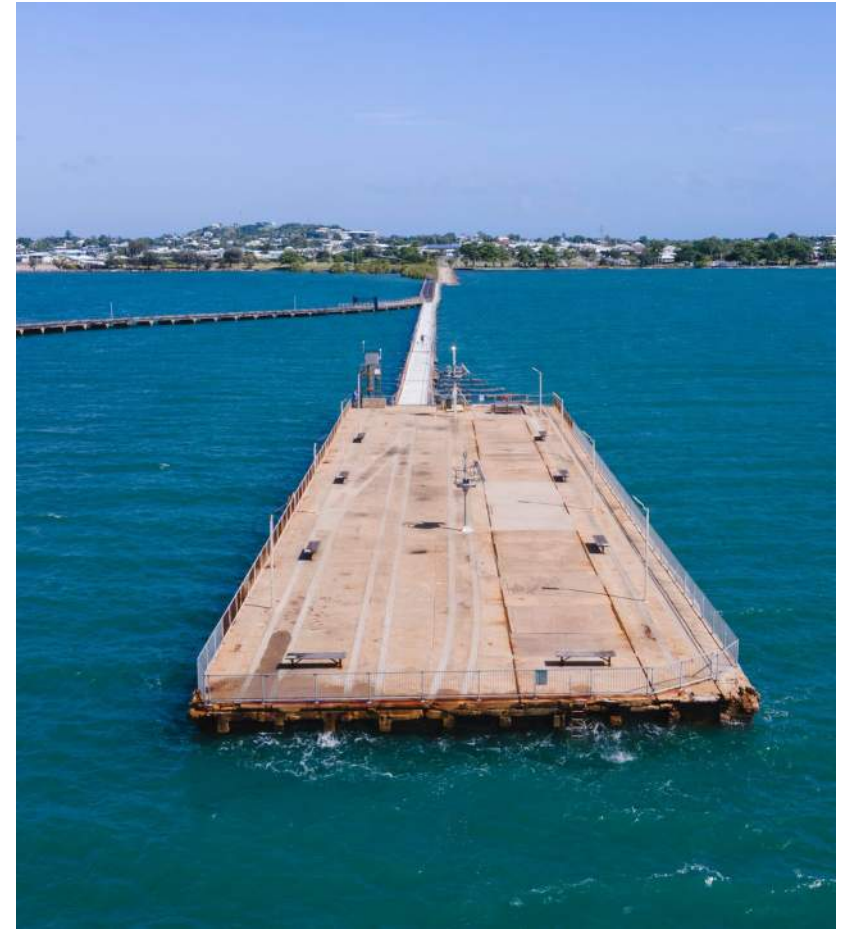


## SITE INVESTIGATIONS

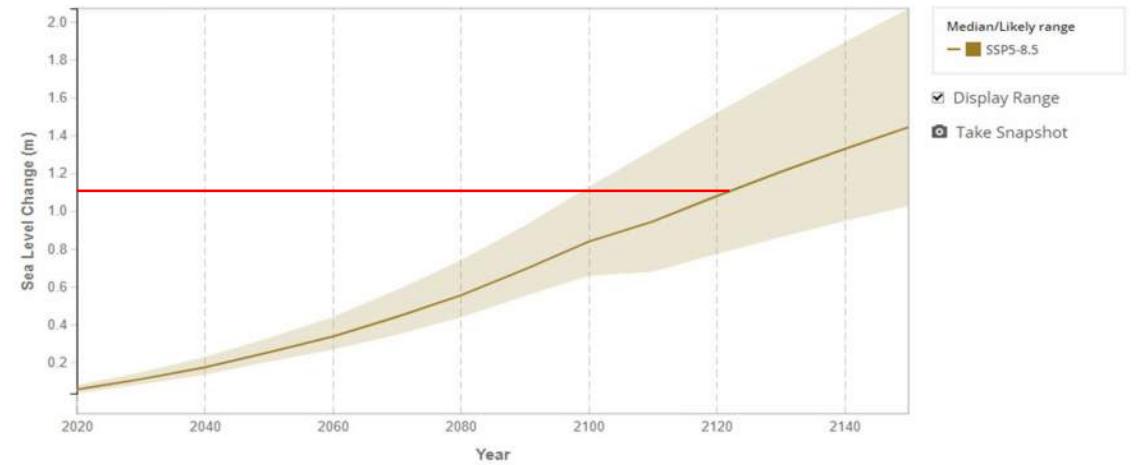
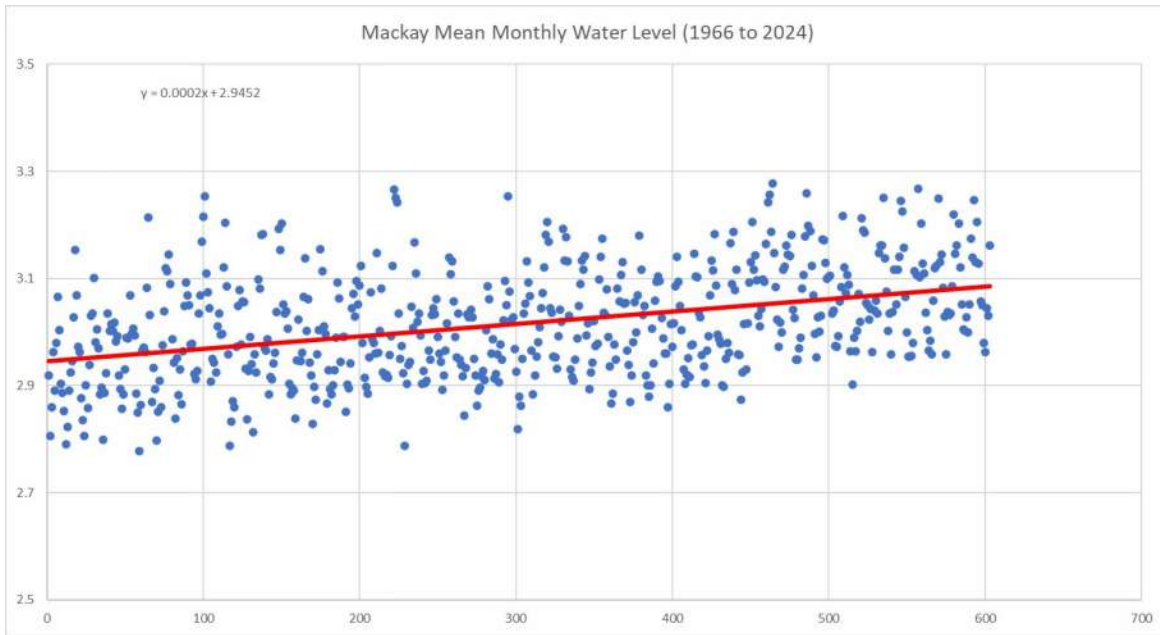
- Diving investigation
  - Below-water visual inspection at 18 pile locations to record the conditions and document any deterioration mechanisms.
- Concrete condition testing
  - 30 test locations randomly chosen to determine the risk of corrosion in the reinforcement of piles/headstocks.



# Structure – Current Water Levels

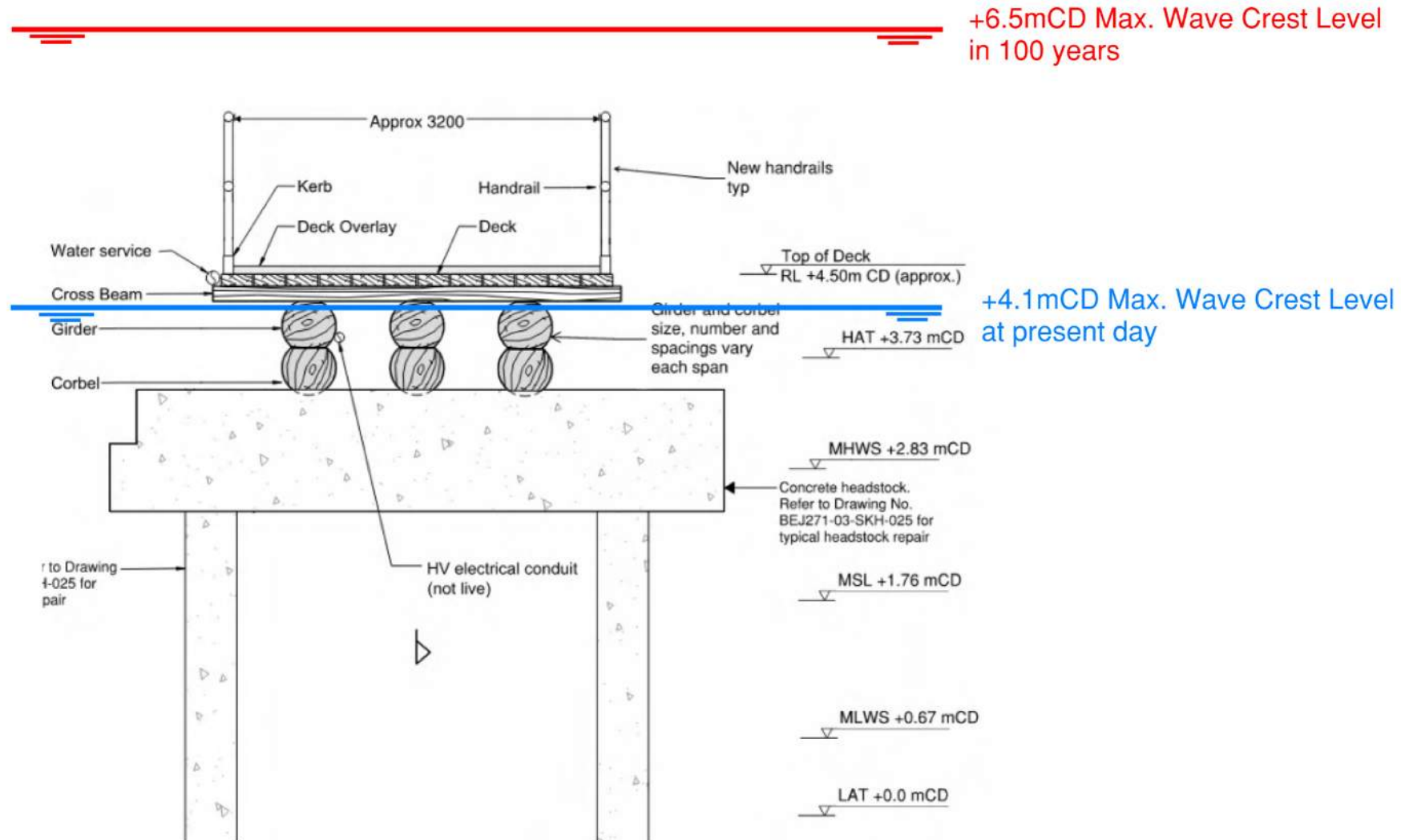


# Structure – SLR Data and Prediction





# Structure – Wave and Water Levels

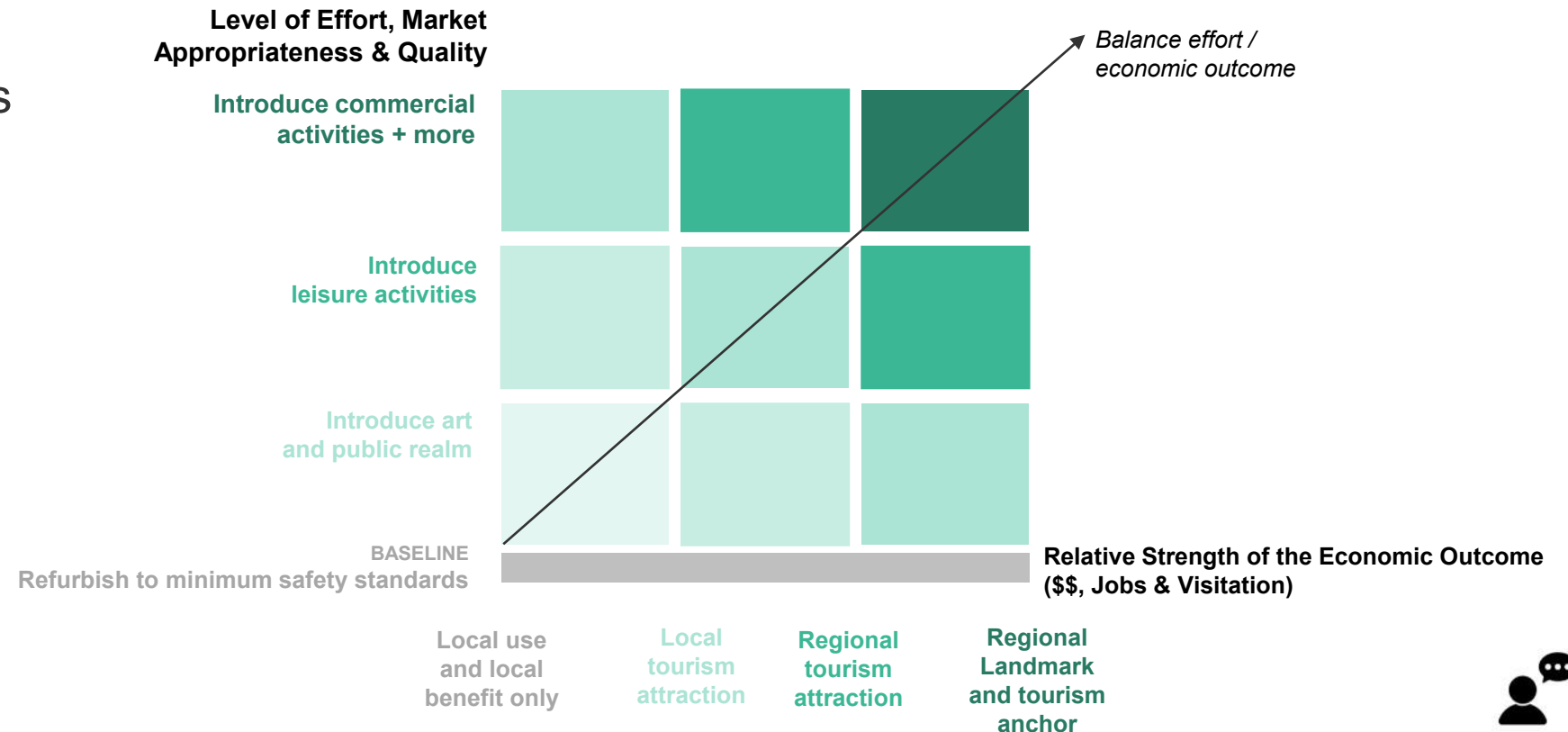




# ECONOMICS

There is a direct relationship with the realisation of economic opportunity with the level of intervention

- Baseline intervention = No economic change
- Balance between what's appropriate for Bowen
- Consider future generations and what they will be left with



# Economic Pathways



ARUP



Altona Pier, Vic

**REPLACE**

- Replacement of pier
- Alignment providing a connection to historical elements
- Space for fishing, boating and pedestrian



Seebrücke Kellenhusen, Ger

**PUBLIC ART & EXPERIENCE**

- Public Art installations
- Immersive leisure activities to attract tourism



Portarlinton Harbour, Vic

**REVITALISE**

- Reconstruction of pier and berthing area
- Loading area for ferries
- Widening of deck, low landing
- Art installation



Princess Pier, Vic

**OPEN SPACE & HERITAGE**

- Historic piles under decking retained
- Mooring for recreational boats & ferries
- Flexible public open space
- Public art



Paihia Wharf, NZ

**TOURISM ANCHOR**

- Wharf and harbour waterfront development to enhance & improve visitor experience
- Berths, commercial and public facilities



Santa Monica Pier, CA, USA

INTERVENTIONS

ECONOMIC OPPORTUNITY

- Safer more accessible pedestrian access
- Boating facilities and fishing areas
- Increased visitation > stimulating the local economy

- Public Art to boost tourism
- Day and night (lighting show, photo opportunities)
- Indirectly stimulating economic boost (retail, F&B, accommodation)

- Support local aquaculture fishers, ferry service and harbour visitors.
- Popular fishing, boating and diving spot for locals and visitors.

- Recreational use and historic landmark attracting locals and visitors
- Indirectly stimulating local economy (retail, F&B)
- Support ferry services and tourism (kayaking tours)

- Enable and expand regional tourism
- Link with island through regular ferry and recreational boat services
- Increase visitation and time spend locally



# JURU PEOPLE

# The Juru Story

- **Juru people** are the Native Title holders and Traditional Owners of the land and sea country of Bowen and north to the Burdekin
- Bowen Jetty is within the **Juru Sea Country**
- NQBP has worked closely with Juru for more than 20 years and are continuing this through **engagement** on this project
  
- Meeting with Kyburra Munda Yalga Board
- Walk on the jetty
- Ongoing meetings
  - *Saturday 9<sup>th</sup> March – Introductions*
  - *Sunday 24<sup>th</sup> March – Meeting & Jetty Walk*
  - *Sunday 21<sup>st</sup> April – Meeting & Project Update*



# Juru Cultural Values

- Past development has seen almost all **archaeological cultural heritage values** of the foreshore area impacted through reclamation and development
- Cultural values remain through **story** and **connection** to **sea country** with important fauna including: sea turtles and dugong
- NQBP is facilitated the preparation of a **Cultural Values Report** for the Juru people
- Working with Juru we hope to include representation of the **cultural values** in the **jetty design**





# HERITAGE (EUROPEAN)



# Heritage (European) – Timeline

Date	Event
1861	Bowen Established
1865	Construction of Bowen Jetty commenced
1867	Bowen Jetty Complete
1877	Redesign of the original Bowen Jetty
1880	Reconstruction of the Bowen Jetty
1913	Planned extension to Jetty head completed
1914-1915	Extension of jetty with new railway
ca. 1922-1926	Coal Pier Built
1950	Reconditioning Bowen Jetty, consisting of redecking and concreting the decks
1954	Concrete pier replacement, from the shore approximately 215m. Foundations of the Coal Pier replaced with concrete.
1958	Cyclone hits Bowen damaging the Bowen Jetty
ca.1977	Causeway / Pipeline built to coal jetty
1988	Original Jetty Head removed, leaving early 20 <sup>th</sup> century extensions
ca.1992	Causeway / Pipeline removed

Historic timeline (AHS 2024)

The Heritage Scoping Report confirmed the historical phases associated with construction of the Bowen Jetty, Railway Jetty, and the Coal Wharf.

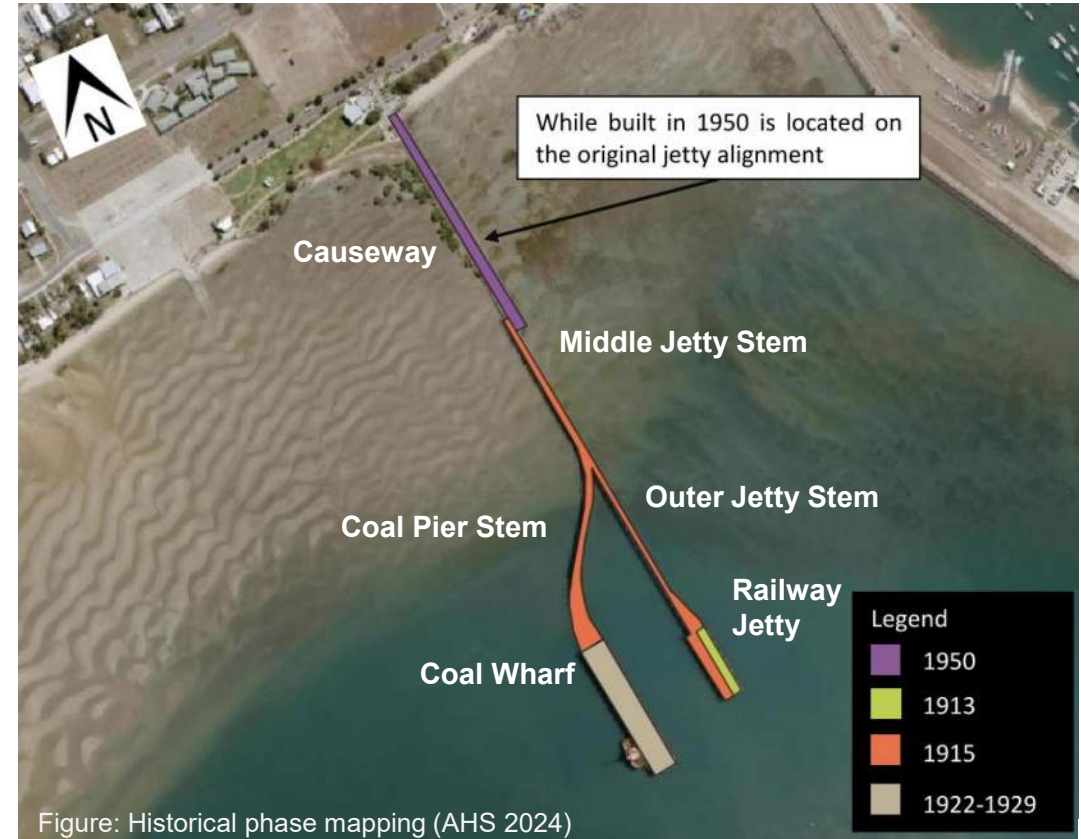


Figure: Historical phase mapping (AHS 2024)



# Heritage (European) – Key Points

- **Heritage value** is present on all sections of the jetty
- This project is **not a traditional conservation project** because the overall condition is generally poor.
- There is a need for the jetty to be **practically useful** for the community for another 100 years.
- Presently there is a **risk of Fit for Purpose**, due to condition issues.



# Heritage (European)

## PRESERVING THE HERITAGE

- Examples of how others have preserved & celebrated the heritage:
  - Retaining the piles in a way that celebrates them but doesn't rely on their structural integrity
  - Reusing materials in furniture.
  - Reflecting the original alignment, shape or features of the jetty.
  - Reinstating elements of the jetty which may have been lost over time.
  - Creating information boards which explain the heritage value of the jetty.





# ENVIRONMENT

- To **identify biodiversity values** at and surrounding Bowen Wharf to inform **for future mitigation or enhancement**
- Development at Bowen Wharf should seek to **minimise** impact to **biodiversity values** and where possible further **enhance the biodiversity values** that have developed in association with the **wharf structure**.
- Bowen Wharf is located within the **Great Barrier Reef – World Heritage area** (not in GBR Marine Park)

Critically endangered



Curlew sandpiper  
(*Calidris feruginea*)

Critically endangered



Eastern curlew  
(*Numenius madagascariensis*)

Endangered



Australian painted snipe  
(*Rostratula australis*)

Endangered



Black-tailed godwit  
(*Limosa limosa*)

Endangered



Loggerhead turtle  
(*Caretta caretta*)

Vulnerable



Green turtle  
(*Chelonia mydas*)



# Aerial Review – Biodiversity Values



## Mangroves

- Provide **feeding** and **breeding habitat** for fish, birds and crustaceans.
- **Act as filters** for nutrients and sediments, **reduce erosion** and maintain **water quality**.
- Acts as a **carbon sink**, absorbing and storing carbon from the atmosphere.
- A source of amenity for the community using Bowen Wharf.



## Seagrass

- Provides **habitat** for invertebrates and juvenile fish including important **recreational** and **commercial fishery species**.
- **Foraging habitat** for several threatened turtle species and dugong.
- Provide **defense to coastal erosion** and reduces turbidity by stabilising sediment.
- Acts as a **carbon sink**, absorbing and storing carbon from the atmosphere.





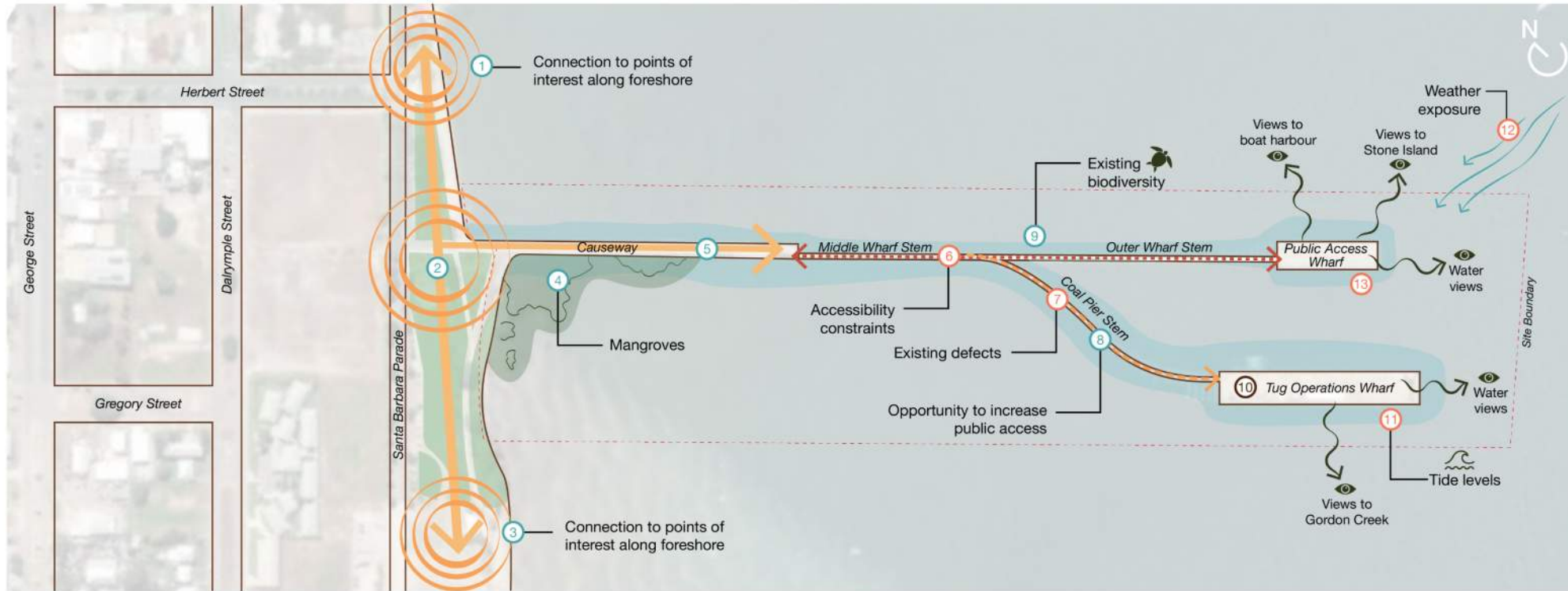
# SITE UNDERSTANDING

# Movement & Connectivity





# Opportunities & Constraints



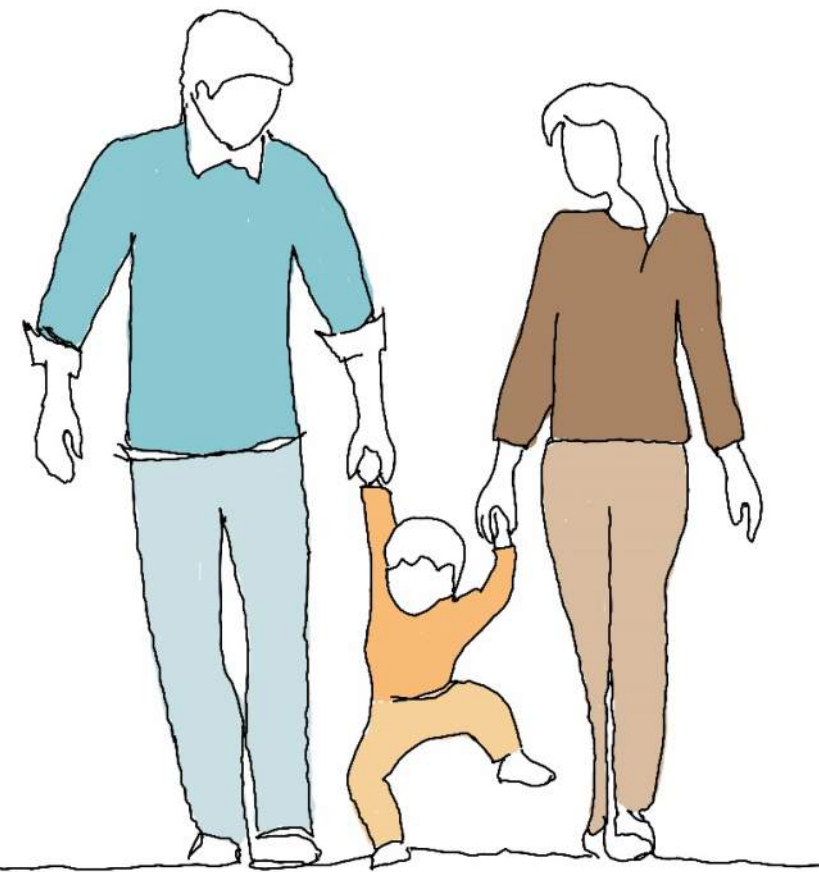
○ OPPORTUNITIES    ○ CONSTRAINTS

- 1 Connection along foreshore to water park, skate park, playgrounds & public amenities (toilets, bbqs, shelter).
- 2 Bowen Information Centre & Bowen Sound Shell is located at the gateway to the Bowen Wharf and included information displays regarding the wharf's history.
- 3 Connection along foreshore to public amenities (bbqs & shelter) and Catalina Flying Boat Memorial Wall
- 4 Existing mangroves - opportunity to retain and enhance the existing ecology around the wharf.

- 5 Existing wharf has strong ties to the community with significant historical value.
- 6 Accessibility compliance issues have been identified on the wharf stem and will potentially limit access for some people.
- 7 Defects to the existing structure have been identified throughout the piles, headstocks, cross beams, edge beams, deck soffit & topping slab.
- 8 The tug operations wharf and the coal pier stem is currently inaccessible to the public. With the relocation of the tug operations, there is an opportunity to increase the area of public access.

- 9 Existing biodiversity around the wharf should be considered ie marine life, seagrass and birds.
- 10 Existing tug operations to be considered during construction phase.
- 11 Risk of overtopping of the structure due to sea level rise.
- 12 Currently, the wharf has no weather protection against sun, wind or rain.
- 13 There is limited access to the water from the wharf. Users who currently use the wharf to jump into the water (illegally) experience unsafe swimming conditions with marine life such as jellyfish and sharks in the area.





**LET'S GET CREATIVE**

# Develop the Place Brief

## THE OBJECTIVE

- Place opportunities – articulate the **key elements** driving Bowen Jetty's desired place outcomes
- Who are the **users**? (current and future)
- Identify users **needs** and **aspirations**
- Consider the **broader community** – how can this be a place for all (ecological and human)



# Project Examples - Australia



Busselton Jetty, WA



Princess Pier, VIC



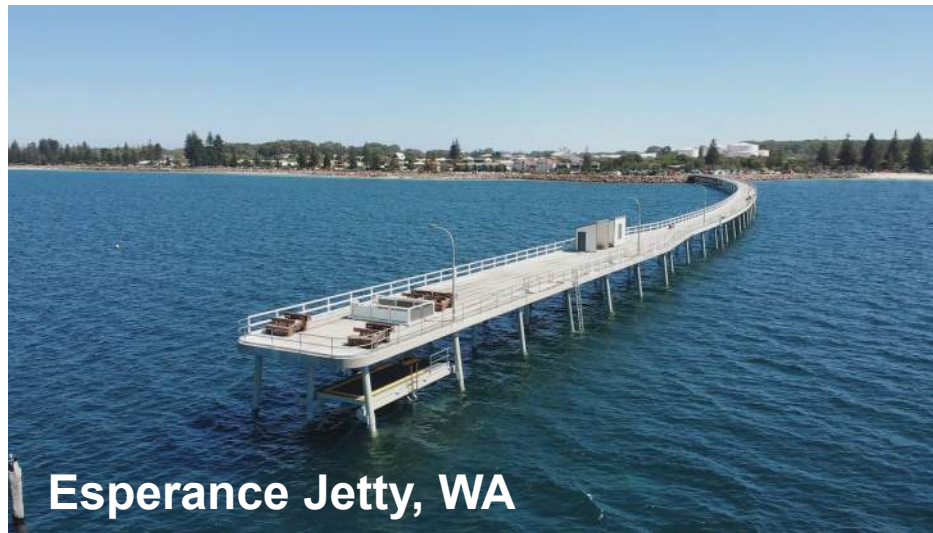
# Project Examples - Australia



Altona Pier, VIC



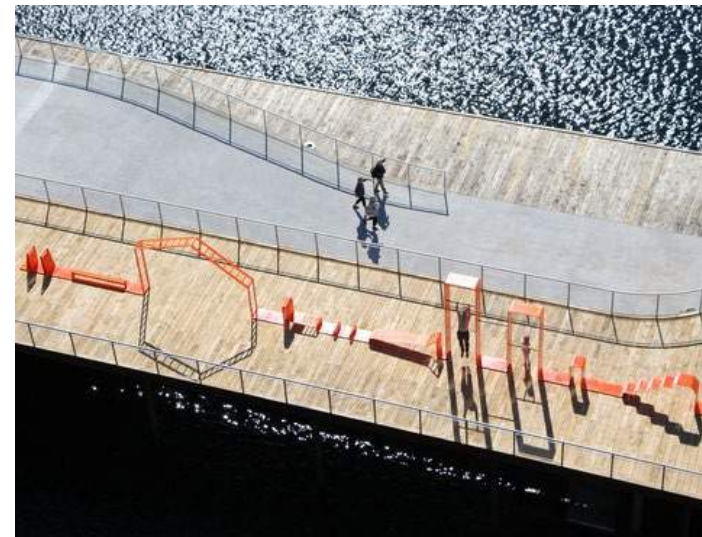
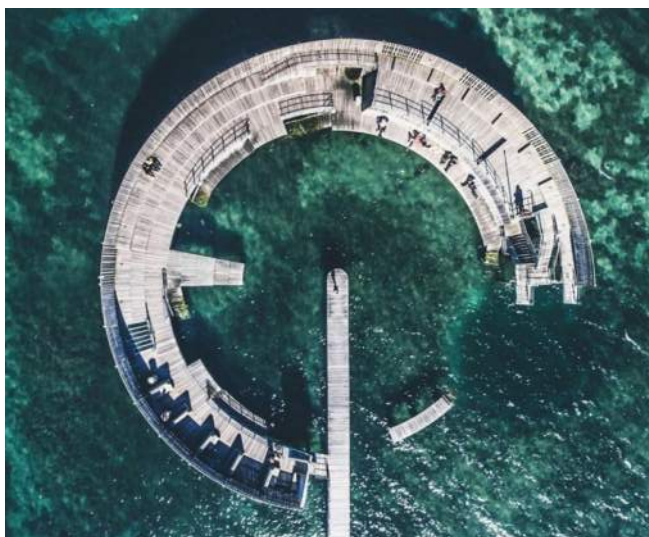
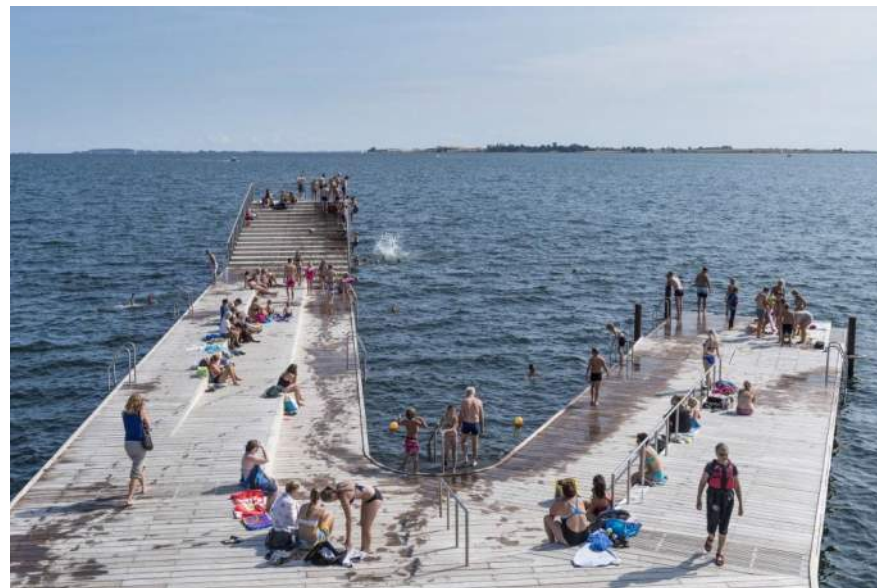
Terrigal Boardwalk, NSW



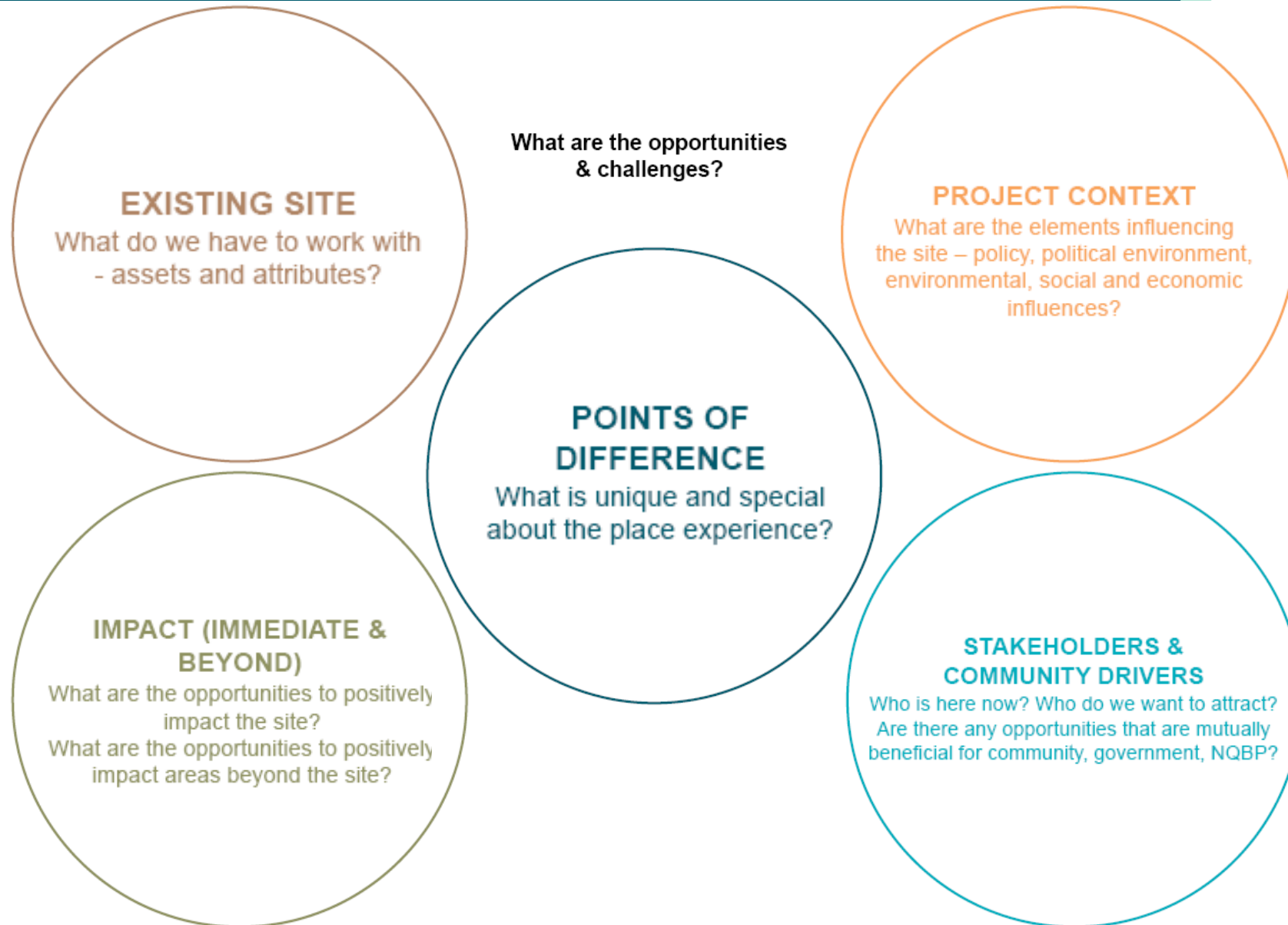
Esperance Jetty, WA



# Project Examples - Overseas



# Opportunities & Challenges



**20 MINS**



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# Let's Get Creative

## USERS | PRIORITIES | SPACES



CHILDREN

BOWEN JETTY: USERS



WATER SPORTS &  
RECREATION

BOWEN JETTY: PRIORITIES

BBQ AREA

BOWEN JETTY: SPACES



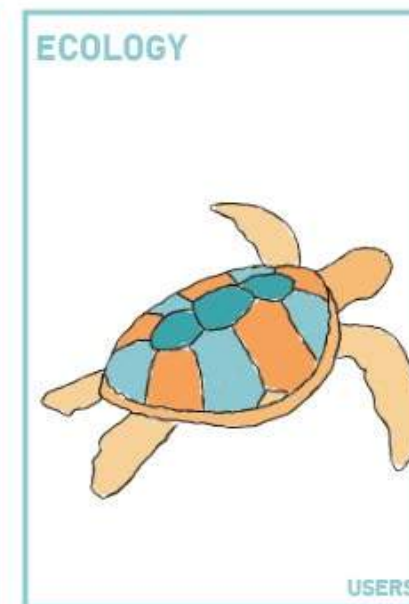
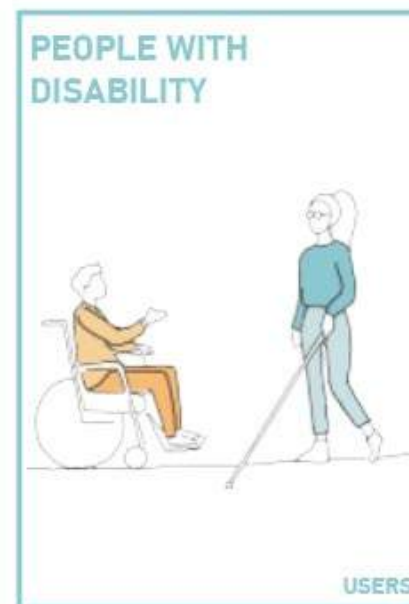
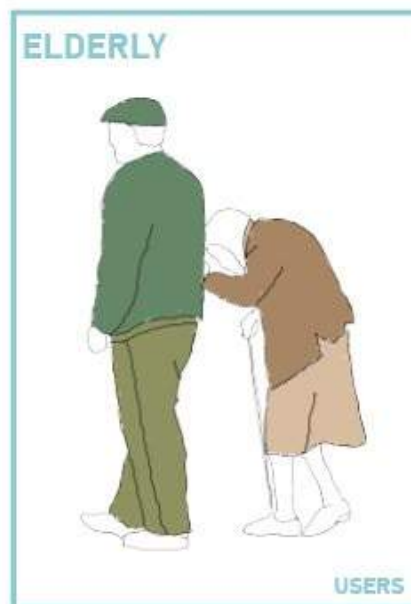
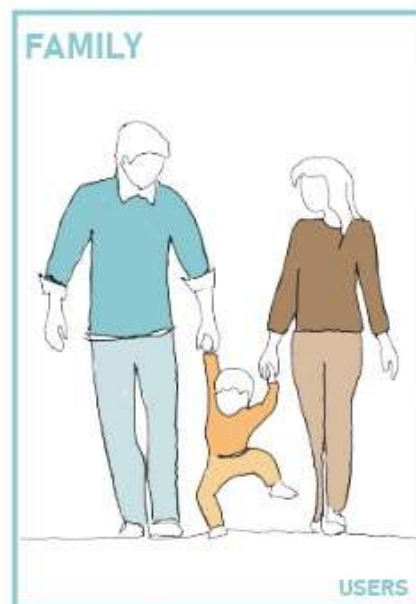
Shy



# Let's Get Creative

## USERS OF THE JETTY

- Place yourselves in all those users that might be using the Jetty

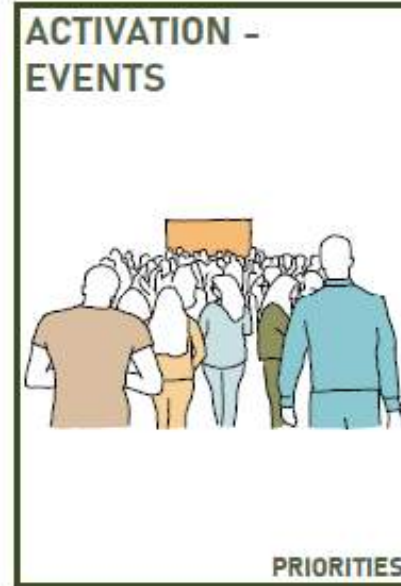
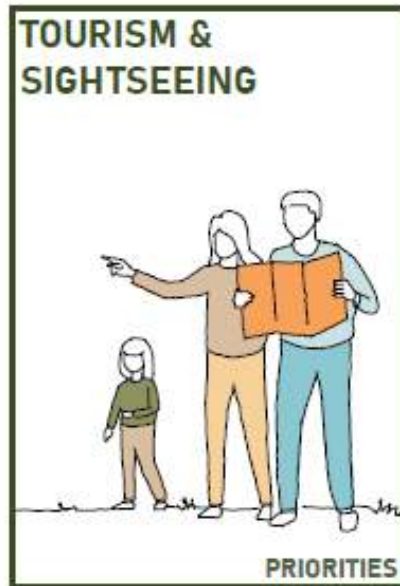


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# Let's Get Creative

## WHAT ARE YOUR PRIORITIES

- Think about how you / they want to use your future Jetty

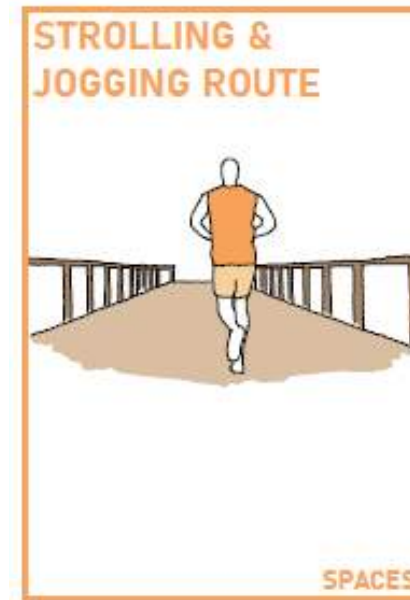
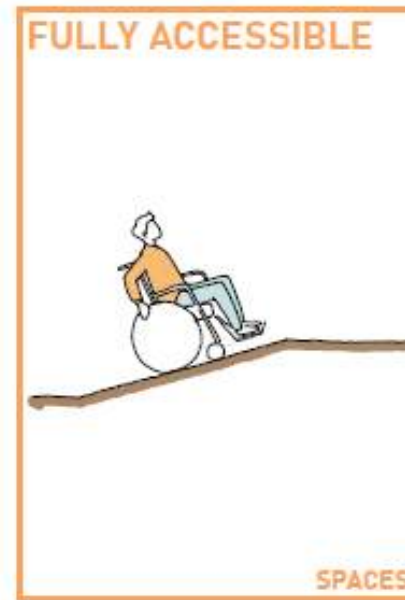
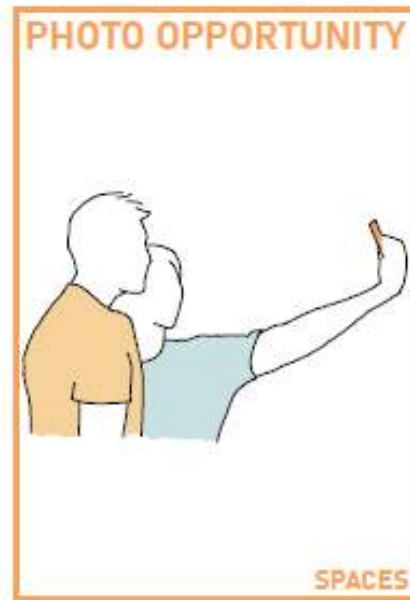


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# Let's Get Creative

## WHAT SPACES ARE NEEDED

- What kind of Spaces would you like to see in your future jetty to meet your needs



# Let's Get Creative



40 MINS



# Let's Get Creative

## HOW WILL WE ENGAGE



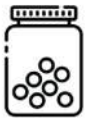
This is a safe space, we respect and embrace diversity of thought



Keep to time, rotate to next activity when the bell rings



Record your ideas using post it notes



Help yourself to tea / coffee / snacks as you go



Have fun



Shy

# SHARE YOUR IDEAS

# THANK YOU

Bowen Wharf Project - Enquiry by Design Feedback



ARUP

