Australian Government

Great Barrier Reef
Marine Park Authority

GREAT BARRIER REEF AQUARIUM REDEVELOPMENT

TOWNSVILLE, QUEENSLAND

STATEMENT OF EVIDENCE TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Public Submission

Date of submission: November 2025

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1. EXECUTIVE SUMMARY

This submission seeks agreement from the Parliamentary Standing Committee on Public Works (PWC) on the Great Barrier Reef Marine Park Authority's (the Reef Authority) proposal to redevelop the Great Barrier Reef Aquarium (the Aquarium) at 2-36 Kelleher Place, Townsville, North Queensland at an estimated total cost of $161.1 million (ex GST).

The Aquarium redevelopment project ("the Project or the Redevelopment") is a key deliverable under the Townsville City Deal (a federal, state and local government agreement led by the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts).

The redevelopment of the Aquarium is considered public works under the Public Works Committee Act 1969. The PWC has requested a new project proposal be brought forward to reflect the change to scope of works proposed in the Statement of Evidence submitted to PWC in 2022 under the 2021-2041 Reef HQ Masterplan (the Masterplan).

The Reef Authority has received six separate funding tranches between 2019 and 2024 at a combined total of $180.1 million. To progress critical early works and other project associated costs there has been a total expenditure of $21.7 million as of September 2024.

The Reef Authority has been providing world-leading marine park management since 1975. Management is guided by the *Great Barrier Reef Marine Park Act 1975* and the best available science to protect values, reduce threats, and improve the current and long-term outlook for the Great Barrier Reef (Reef) and the communities that depend on it.

The Aquarium (previously Reef HQ Great Barrier Reef Aquarium) is Australia’s national education centre for the Reef, recognised nationally and internationally as a premier education destination in tropical reef education.

Opened in 1987 as a Bicentennial Commemorative project, the award-winning facility is home to the world's largest living coral reef aquarium, showcasing the rich and complex biodiversity of the Reef, including hundreds of species of fish, corals and invertebrates to provide a highly effective replica of the Reef on the land. The Aquarium makes the Reef accessible to people of all ages and abilities without getting wet.

The redevelopment option outlined in this submission will address the non-compliant building conditions of the current facility and the requirement to fast track modernising the facility to extend its life cycle for another 30 years.

This delivery option presents a return on investment, minimises delivery risk, meets critical Project timeframes, and supports the Prime Minister's endorsement of a rebuild announced in Townsville in August 2024. Furthermore, it reduces all risks associated with phased refurbishments presented in the former Masterplan.

The decision to shift from a staged refurbishment to a redevelopment has been driven by various factors such as the age and condition of the existing facility and a reassessment of the feasibility and cost effectiveness of short-term solutions.

The redevelopment option allows for greater flexibility in incorporating new technologies, addressing any structural or functional limitations of the existing building from the outset, and will create a modern aquarium that is operationally and environmentally sustainable, that aligns with its purpose within the available total funding envelope. Delivering a world-class contemporary education and tourism facility to educate visitors on the importance of protecting the Reef will not only have a positive impact on the Reef’s sustainable future but

also have a positive social and economic impact on the community. It will deliver a national asset for the Government to continue to promote Australia's world-leading reef management initiatives and cultivate lifelong learning opportunities vital for the conservation of one of the world's most iconic ecosystems.

Accompanying this submission, the Reef Authority has engaged expert consultants to develop a detailed Economic and Financial Analysis (EFA) for the project with forecast financial modelling of Whole of Life Costs (30 years) and a Cost Benefit Analysis (CBA).

Key findings for the Project indicate*:*

- The Aquarium is expected to attract more than 165,000 visitors in its first year and almost 4.5 million visitors from opening to 2055.
- The CBA shows the redevelopment has an economic Net Present Value (NPV) of $14.9 million and a Benefit Cost Ratio (BCR) of 1.1 - suggesting a return of 1 dollar and 10 cents of benefits for every dollar spent.
- In total, the Aquarium is expected to create 1,388 jobs (387 jobs per annum) from the start of construction to five years from the commencement of operations. This will stimulate economic activity, generating $564.1 million in total output.

This level of cost recovery is strong for an important public asset where the mandate extends beyond commercial outcomes to include education, conservation, and public access objectives.

All procurement activities are and will be conducted in full compliance with the Commonwealth Procurement Rules (CPR), the *Public Governance, Performance and Accountability Act 2013* and associated instruments ensuring transparency and value for money for the Commonwealth. Supported by internal procurement activity with external probity oversight, the Project is being managed by comprehensive governance practices, including an extensive gateway review process undertaken by an independent assurance assessor.

2. INTRODUCTION

2.1 Project History

Since its establishment in 1987, the Aquarium has been crucial in delivering on the Reef Authority's program area of educating and fostering stewardship to enhance the protection of the Reef, ensuring Australia remains at the forefront of global reef education.

After more than three decades in a harsh and corrosive tropical environment, the building fabric and many of its internal systems have deteriorated. In 2021 the facility closed for an extensive program of critical works to key building elements to comply with Workplace Health and Safety standards.

Between 2019 and 2021 the Aquarium received five separate funding tranches at a combined total of $80.1 million, including two emergency relief funding packages during COVID-19. As a result of fragmented funding allocations, the Reef Authority sought approval from PWC to undergo a staged refurbishment for the transformation of Reef HQ Aquarium (now Great Barrier Reef Aquarium) into a global centre of excellence in tropical reef education to deliver on the 2021-2041 Reef HQ Masterplan.

During preparation for these works, major deterioration of key structural and service elements was identified, resulting in a reassessment of the project's feasibility and value for money.

Following confirmation from Building Certifiers of the extent of compliance related work required, the project shifted focus from a refurbishment to new construction to commence planning for a redeveloped facility that delivers a modern Aquarium that meets National Construction Codes and extends the Aquarium's life for more than 30-years. The new facility would not only meet the expectations of the local community but also drive tourism, support the Townsville economy, and provide a long-term, value for money solution, making it the most viable solution.

As a result, implementation of a staged refurbishment as per the Masterplan was paused. The Reef Authority notified the PWC Secretariat of these changes via email in January 2023 and December 2024.

2.2 Townsville City Deal

The Townsville City Deal is a 15-year commitment between the Australian Government, Queensland Government and Townsville City Council to transform the Townsville region. The deal is designed to build resilience in the region and attract new investments, ensuring a prosperous economic future for Townsville.

In August 2024, Townsville City Council voted to reallocate $100 million in Australian Government funding under the Townsville City Deal (Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts) to secure the future of the Aquarium. Prime Minister Anthony Albanese publicly announced the funding in August 2024, taking the total government investment to $180.1 million to deliver Australia's national education centre for the Reef.

2.3 Project Phases

For this submission, all early works and activity undertaken on the Project between 2019 and 2024 is referred to as Phase One.

Phase Two commenced in 2025 following confirmation of the new total funding envelope during the 2024-25 Mid-Year Economic and Fiscal Outlook (MYEFO) budget process.

Given the project history, revised scope of works and increased budget, PWC advised the Reef Authority in November 2024 (PWC Ref: 46-34 and 46-15) a new project proposal was required. This submission will replace the previous submissions tabled in June 2020 and November 2021 respectively.

2.4 Project Funding

Funding for the Project will be delivered as per the 2024-25 MYEFO:

The Government will provide $149.6 million over four years from 2024–25 (and an additional $11.5 million in 2028–29) for a redeveloped aquarium in Townsville, enhancing its role as Australia's national education centre for the Great Barrier Reef and boosting the local and regional economy. The cost of this measure will be met from within the existing resourcing of the Great Barrier Reef Marine Park Authority and the redirection of existing funding for the Townsville City Deal.

The Reef Authority intends to maximise value through the redevelopment by retaining high-value structures and equipment from Phase One where possible, while substantially rebuilding and/or reconfiguring other elements of the facility. The redevelopment will be neither a like-for-like refurbishment, nor a complete knock-down-rebuild. Rather, it will be a transformed facility that includes the best interactive exhibitions and experiences for visitors and delivering the promise of a world-class educational facility.

3. NEED FOR WORKS

3.1 Project Need

Over the years, the Aquarium has undergone various upgrades, maintenance, and improvements to keep the business operating, however, these were often band-aid solutions to the effects of a harsh tropical environment and saltwater degradation. Prior to closure in 2021, the current facility had been in continuous operation since it first opened, except for a six-month shut down period in 2002, to accommodate a refurbishment.

Despite these updates and the range of critical safety works conducted during Phase One, some assets from the original construction remain, plus other key issues including:

- Structural degradation and evidence of concrete cancer (reinforcement corrosion) have been observed, indicating structural degradation and compromising the building's functionality, safety, and asset value.

- Potential structural catastrophic failure risks have been identified for the Coral Reef Exhibit (CRE) acrylic windows. Recent reports from engineering consultants, who conduct bi-annual assessments of the large acrylic tank windows reveal progressive deterioration of the steel mullion support beams that support the viewing panels.

- Some structures are non-compliant with current building standards such as the roof weather proofing, floor loading and staircase accessibility and fail to meet current performance, safety and efficiency requirements.

The Project will address deficiencies with the existing design including:

- Spatial constraints and limited public spaces that prevent maximising floor area essential for telling stories of the Great Barrier Reef at a level of detail to contemporary standards that includes properly recognising the significant cultural and historical connection of Traditional Owners to the Reef.

- The lack of capacity to display technology rich displays, minimal floor space to establish an education hub and virtual connection studio to stream live shows from the CRE around the world, the lack of connectivity to the Turtle Hospital in the customer journey and visibility to back of house areas - all essential to improve visitor experience and dwell time.

- Challenges caused by aging technologies essential for best-practice animal husbandry, water flow and treatment, suitable spaces for housing animal life support systems.

- Physical and operation limitations to optimising the sustainable and energy efficient design necessary to meet requirements of Australian sustainable design certification such as Green Building Council of Australia Green Star standards, and to meet Australian Public Service net zero targets.

- Minimal civic presence in the Townsville central business district to lacking suitable public areas, such as outdoor spaces for shaded seating, covered public entry, street lighting and landscaping.

- The lack of compliance with the *National Construction Code, 2022* and the Federal *Disability Discrimination Act, 1992* to ensure the facility is both compliant and accessible for all visitors regardless of physical capability.

A contemporary public Aquarium will ensure public utility as it will foster inclusivity for all abilities, value for money, and a more energy efficient and sustainable facility supporting national Net Zero targets.

Figure 1 – Aerial of current Great Barrier Reef Aquarium adjacent to Lease W located on Ross Creek, Townsville (2025).

3.2 Phase One (2019 – 2024)

Early works were undertaken over two years and delivered successfully by June 2021, meeting the objective to immediately mitigate the highest risks and avoid reactive closure of the Aquarium.

Key building elements and systems were replaced or upgraded including the electrical infrastructure, expanded solar power, electrical battery storage, wet fire systems, stormwater drainage, large animal life support systems, main chilling systems, thermal storage and an upgraded plantroom was constructed on the first floor to relocate the main switch room and pad-mount transformer.

After advancing through various phases of design and planning, the project was paused in 2023 to review delivery risks and the financial implications arising from broader industry cost increases. This decision allowed the organisation to reassess the project scope, funding requirements, and delivery model to ensure continued alignment with governance and financial assurance processes.

3.3 Phase Two (2025 – Reopening)

Despite the progress achieved through Phase One, ongoing assessments have identified emerging structural integrity risks across the facility. These findings have informed the commencement of Phase Two, which is now underway following confirmation of the total funding envelope through the 2024–25 MYEFO. This submission seeks approval to progress Phase Two activities to address these priority risks and advance the project's delivery.

3.4 Key Legislation

The following key legislation is considered in the development of the Project:

1. Great Barrier Reef Marine Park Act 1975
2. Public Works Committee Act 1969
3. Public Governance, Performance and Accountability Act 2013
4. Building and Construction Industry Improvement Act 2016
5. Queensland Building and Construction Commission Act 1991
6. Work Health and Safety Act 2011
7. Federal Disability Discrimination Act 1992
8. Environmental Protection and Biodiversity Conservation Act 1999
9. Plus, all relevant capital works legislation, Australian Standards, National Construction Code and Net Zero in Government Operations Strategy.

4. PURPOSE OF WORKS

4.1 Project Objectives

The Project aims to confirm the Aquarium's status as Australia's National Education Centre for the Great Barrier Reef by developing an education-focused facility with improved living exhibits, immersive technologies, and interactive learning spaces. Expanding conference and classroom areas and building partnerships with academic and research entities will enhance Science, Technology, Engineering and Mathematics (STEM) education pathways and affirm the Reef Authority's position as a global leader in Reef management.

In line with the Great Barrier Reef Marine Park Act 1975, the Reef Authority's purpose is to:

"Provide for the long-term protection, ecologically sustainable use, understanding and enjoyment of the Great Barrier Reef for all Australians and the international community through the care and development of the Marine Park."

The Aquarium serves as a vital connection point between people and the Great Barrier Reef, offering visitors the opportunity to experience the wonder of the Reef firsthand, while gaining a deeper appreciation of how their individual actions can make a difference in conserving and protecting this natural icon. Through immersive exhibits and educational displays, the facility highlights the Reef Authority's critical role in safeguarding the Reef for future generations. Visitors are introduced to the many ways the Reef Authority manages and protects the Marine Park, from programs like the Crown-of-Thorns Starfish Control Program, Reef Guardians, and Eye on the Reef monitoring, to initiatives supporting Traditional Owner sea country management, High Standard Tourism Operators, and field management activities across the Reef. Together, these experiences foster a sense of shared responsibility—empowering every guest to contribute to the Reef's long-term health and resilience.

Additionally, the Aquarium will bolster Townsville's economy and tourism and work to advance regional Australia. It will generate jobs, attract tourists, benefit local businesses, and boost community pride and liveability, including providing opportunities for First Nations peoples.

The Redevelopment will elevate the Aquarium as a leading attraction, reinforcing Australia's prominence in reef education and marine park management. With advanced exhibit and research facilities, it will engage global audiences and remain a vital national asset.

Environmental sustainability is a key focus, incorporating renewable energy systems and sustainable innovations to support a Net Zero economy. This aligns with the Reef Authority's Sustainability Strategy 2024-2027 and the Reef 2050 Long Term Sustainability Plan.

4.2 Customer Experiences

The redeveloped Aquarium aims to offer an enriching and dynamic customer experience journey that aligns with its original mission, established in 1987, of showcasing and celebrating the Great Barrier Reef and its unique ecosystem. Central to the Aquarium's vision is the Coral Reef Exhibit, housing a 2.5 million litre living reef exhibit—the largest in the world. This exhibit serves as the Aquarium's premier attraction, vividly illustrating the complexity and importance of marine conservation and the significant efforts led by the Australian government to protect the Marine Park.

The inclusion of apex predators, like sharks, in dedicated exhibits provides another captivating experience, appealing to both novice and seasoned marine enthusiasts. By delving into the ecological roles these predators play, visitors can gain a deeper appreciation for the interconnectedness of marine life and the imperative of habitat preservation.

An immersive walk-through viewing tunnel enhances the visitor journey by simulating the sensation of being submerged in the vibrant underwater ecosystem of the Reef. This compelling experience is further enriched by the Aquarium's collaboration with the Gurambilbarra Wulgurukaba peoples, presenting a series of exhibits that highlight First Nations perspectives and cultural connections to Sea Country. The journey begins with a *Welcome to Wulgurukaba Country* exhibit, transitioning into narratives such as the Whale Story, which offers rich digital storytelling from various Traditional Owner groups.

The Turtle Hospital remains a cherished feature, embodying the Aquarium's dedication to marine conservation. By facilitating close encounters and educational programs, the hospital provides insights into the challenges facing sea turtles, such as habitat degradation and climate change, emphasising the importance of coral propagation as a conservation strategy.

Overall, the Aquarium seeks to engage, educate, and inspire visitors through a diverse array of exhibits and experiences, reinforcing its commitment to the long-term protection of the Reef and fostering a profound connection between visitors and the marine world.

5. OPTIONS CONSIDERED

5.1 Functional Design Brief

A Functional Design Brief was prepared in Phase One to set down the specific requirements of a public aquarium required specifically to replicate the Reef on land. This brief included an analysis of the internal and external requirements of a contemporary facility such as the amount of space required for suitable visitors' experiences and living exhibits essential to tell the stories of the Great Barrier Reef, plus all associated plant rooms, workspaces and engineering infrastructure to support an operating aquarium.

5.2 Design Options Overview

This proposal is the third submission to PWC regarding the Project, highlighting the urgent need to upgrade the deteriorating facility to align with contemporary standards and National Construction Code. Previous submissions to the Committee (2020 and 2021) thoroughly explored various options such as phasing critical safety enhancements and undertaking staged refurbishment efforts. However, given the escalating degradation of the existing

infrastructure, these previously considered options have been deemed untenable. Earlier options would leave significant issues unaddressed and fail to rectify compliance and regulatory deficiencies as outlined by the National Construction Code.

As such, multiple options are not being presented to the Committee due to the compelling need for this Redevelopment to be fast-tracked, to meet current safety and operational standards within the existing footprint, ease community and stakeholder frustrations on the extended closure and avoid any further costly delays which will impact the confirmed total funding envelope.

5.3 Redevelopment Option

The Redevelopment option being put forward to the Committee has been expertly designed to ensure the Reef Authority can deliver on its core purpose of providing a living coral reef on land for people of all ages and abilities to experience and appreciate without getting wet, and will be constructed to meet contemporary building compliance and environmental sustainability standards ensuring efficient, economical and ethical animal life support systems when in operation.

Key elements of this option include:

- Construction of an immersive coral reef exhibit with a new viewing tunnel to enhance the visitor experience (including all related Life Support Systems and engineering infrastructure).
- Construction of a unique external façade in the heart of Townsville's central business district and prominent public entrance to improve visitor access (compared to the original facility's entrance which was nested in a corridor within an adjacent building).
- Use of some existing infrastructure to support the operation of a public aquarium (access roads, carparks, sewage, power supply, water-in take from Ross Creek).
- Use of dedicated plant rooms built during early works in Phase One.
- Use of electrical, fire services, mechanical and hydraulic systems.
- Construction of a Turtle Hospital inside the facility and easily accessible as part of the visitor experience.

Benefits of this option include:

- Provides an asset which considers the whole of life performance and cost.
- Provides a facility that is functional and achieves a high standard of animal welfare, husbandry and safety.
- Supports the increase of exhibit spaces. Allows for the continued provision of educational and informational services through engaging with living and thematic exhibits and multi-purpose spaces.
- Works as a major public facility that meets full compliance with all relevant construction codes and standards.
- Innovative design to protect the facility against severe weather impacts and deliver an environmentally sustainable building to seek a 5 or 6 Star, Green Star rating.
- Secures the future of the Aquarium building for at least another 30 years.

This option has undergone design development to a 30 per cent concept and has been fully costed at a P80 level.

Costings outlined in the Confidential Cost Submission (Submission 2) align with the confirmed total funding envelope and therefore costs to deliver would be 100 per cent offset by the project's existing budget and require no further funding to deliver.

6. SCOPE OF WORKS

6.1 Location of works

The Aquarium will be redeveloped on its current site, 2-36 Kelleher Place, Townsville North Queensland.

The Aquarium sits on the north bank of the Ross Creek. Across Ross Creek to the south is the city's popular hotel and dinning district. There is currently a vacant plot (Lease W - former Wonderland site owned by the Port of Townsville Limited) to the west of the Aquarium site. The Queensland Museum Tropics is located a half block away further west adjacent to Lease W.

6.2 Site Ownership

The Australian Government owns the Aquarium and its assets, however, the land on which it stands is leased from the Port of Townsville Limited (Queensland Government) until 2061, under a 'peppercorn' lease arrangement.

6.3 Townsville Waterfront Priority Development Area Scheme

The land on which the Aquarium stands is included in the Townsville Waterfront Priority Development Scheme (the Scheme) spearheaded by the Port of Townsville Limited and Townsville City Council.

The purpose of the Scheme expects "*a place where the city and nature intersect...a world-class destination, through an interconnected series of vibrant and active day and night experiences focused on the water ... which embeds diverse maritime, tourism, recreation, open space, natural, cultural, community, educational, entertainment, residential, commercial and business uses and events, that embrace the waterfront and the city's tropical climate."*

The Redevelopment directly responds to these stated objectives and is wholly consistent with them. Therefore, the Project is catalytic for the Scheme and will encourage further enhancement and activation of the area in line with the independent Council strategies that are being progressed for a well-connected and vibrant locality.

6.4 Preliminary works

Preliminary works to prepare for redevelopment have already been completed, with these initial activities conducted during Phase One of the Project. These activities were not subject to PWC approval.

6.4.1 Preservation of living fish and corals

All livestock (large animals, fish, corals and invertebrates) were relocated from the Aquarium to partner organisations and/or bespoke holding facilities at the Australian Institute of Marine Science (AIMS) in 2024. The Aquarium's animals are currently housed at purpose-built holding systems located at AIMS, where the Reef Authority leases suitable space and equipment. The Aquarium's curatorial team provides daily care, ensuring ongoing welfare until the animals can return to the redeveloped facility.

6.4.2 Improvement on current exhibit design and filtration systems

A digital map was created of the existing Coral Reef Exhibit to aid and inform the future design (see Figure 2 – *3D digital map of existing Coral Reef Exhibit*). Flow data from the existing Coral Reef Exhibit has been collected to inform improvements to the coral reef structure and wave machine design. This will create efficiencies and maximise efficacy of the system for the benefit of the animal and plant inhabitants of the system.

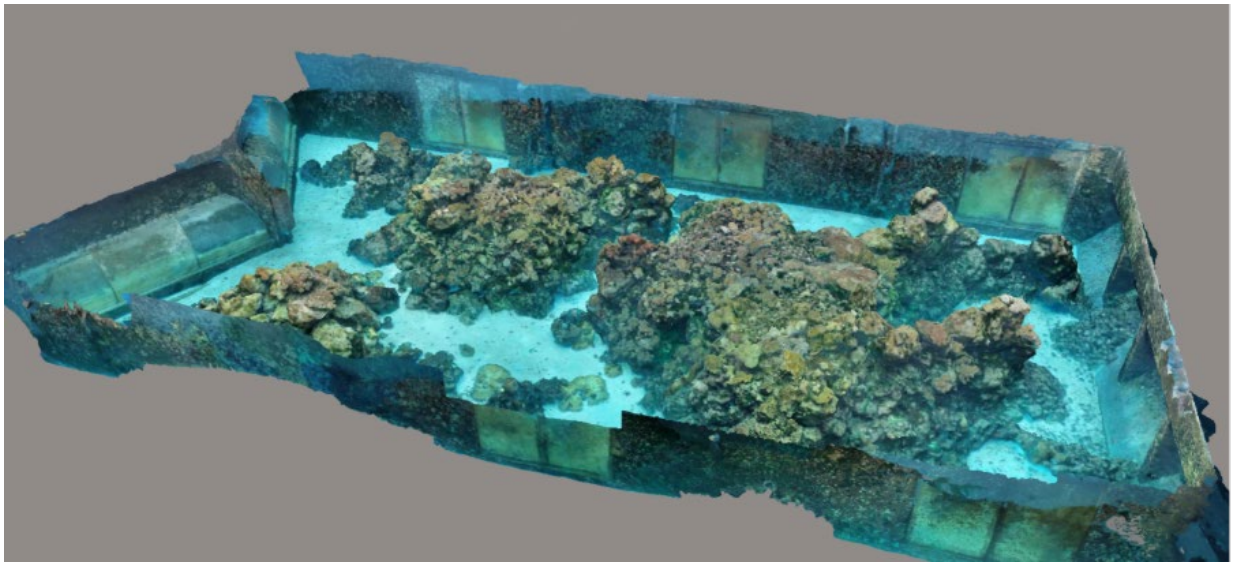

Figure 2 – *3D digital map of existing Coral Reef Exhibit*

6.4.3 Condition and dilapidation reports

Structural, electrical, mechanical and civil foundation condition reports have been undertaken to determine any structures or equipment that is suitable for re-use. A significant volume of equipment is likely to be suitable for re-use or to hold as spare inventory as they were purchased during critical works undertaken in 2021 and 2022.

6.4.4 Geotechnical and Piling Assessments

An existing foundation pile assessment has been undertaken to determine the feasibility of re-using any piles. It has been determined that the re-use of piles is possible but will be dependent on future pile integrity testing, supplier appetitive to re-certify piles and suitability in the new design.

6.5 Works Overview

The scope of works consists of multiple phases, incorporating the preliminary works already undertaken (not dependant on PWC approval), followed by additional early works to prepare for the major undertakings, culminating in the final construction phase.

6.5.1 Early Works

Subject to PWC approval, the Reef Authority will undertake the following early works:

a. Demolition

Demolition of relevant structures in the current building will be undertaken prior to the construction period, concurrent with the final stages of the detailed design. A demolition managing contractor will be engaged directly by the Reef Authority as a separate work package to accelerate the overall program and manage risk (to cost and programming) associated with any latent conditions.

b. Foundation piling and civil works

To advance the overall program and mitigate project risk, foundation and civil works may be delivered as a separate, early-stage work package. This strategy will allow the project to address areas of significant uncertainty early in the program, achieve greater cost certainty for these high-risk elements, and establish confirmed ground conditions before engaging the main building contractor.

c. Early procurement and long lead times

The project's unique requirements demand specialised components not available in Australia, such as acrylic panels (large viewing windows) with fabrication lead times of up to twelve months. Living exhibitions require prolonged curing (stabilising) before animals can be added. For example, the CRE will require an intricate soaking process to remove harmful substances, stabilise water chemistry, and create a safe habitat with phased animal introduction over many months. Large building chillers and passenger lifts can also have long lead times of up to eight months.

Developing a sustainable and energy efficient building cultivates extended lead times for necessary approvals due to the need for comprehensive regulatory compliance and environmental impact assessments. The Reef Authority has allowed up to 12 months for essential green energy approvals in its project timeline.

6.5.2 Major Works

The Project will deliver the following outcomes for the redeveloped Aquarium:

a. Function

The Project will address existing compliance limitations, strengthen the existing structure and reconfigure the footprint to convert previously back of house spaces (such as workshops and plantrooms) into suitable exhibit and education spaces for public use. These works will also ensure accessibility and work health and safety measures are compliant.

b. Ground Floor

Total Gross Floor Area (GFA) of the Ground Floor is 3,893 square metres and will consist of:

- Reception / Foyer including dedicated group access
- Gift Shop
- Exhibits and ancillary tanks
- Coral Reef Exhibit
- Predator Tank
- Whale Song Tunnel
- External viewing window
- Theatre (80 pax)
- Holding Tank
- Plant Room
- Animal quarantine
- Workshop
- Engineering offices, staff space
- Turtle Hospital and Large Animal Holding
- Creek water intake

c. Coral Reef Exhibit and Predator Tank

As the world's largest living coral reef aquarium at 2.5 million litres, the Aquarium holds a unique position globally. The Project will build upon this landmark status to deliver an enhanced visitor experience that brings the Reef to life on land.

When designing an open-air coral reef exhibit it is crucial to consider sun and shade patterns to effectively grow and maintain healthy corals as these organisms depend on specific light conditions to thrive. Corals house symbiotic algae called zooxanthellae, which require sunlight for photosynthesis, providing essential nutrients to the corals. However, excessive sunlight and heat can lead to coral bleaching, where the symbiotic algae are expelled, compromising coral health. By strategically planning the Aquarium's orientation and incorporating shading elements, the ideal balance of light and shade can be achieved, promoting healthy coral growth and resilience against environmental stressors.

In the existing facility, the viewing windows into the Coral Reef Exhibit are approximately four metres wide and are obstructed by structural mullions required to support the water volume and viewing panels. Visitors currently gain an appreciation of the exhibit's depth and scale by moving around the perimeter and viewing through these segmented panels. Advances in acrylic technology now allow for a single, uninterrupted eight-metre-wide viewing panel to be incorporated into the new design, significantly enhancing visibility and creating a more immersive visitor experience.

The viewing tunnel which separates the Coral Reef Exhibit to the Predator Tank will be rebuilt, thus forming a "T" path through the exhibits. As visitors walk through the tunnel, they are surrounded by water, creating the sensation of being underwater themselves. This design allows for close-up views of fish, sharks, corals and other Reef creatures swimming overhead and alongside them, allowing visitors to observe marine behaviours from a unique vantage point, making it a memorable feature for visitors.

6.5.3 First Floor

Total GFA of the First Floor is 2,544 square metres and will consist of:

- Café and Café Balcony
- Kids play area
- Amenities
- STEM Zone Education Hub
- Staff Offices
- Lagoon balcony
- Field Operations and Crown-of-thorns starfish
- Multipurpose theatre (100 seat capacity)
- Dive equipment storage
- Coral Propagation
- Thermal tanks
- Predator holding tanks
- Engineering and Plantrooms (Thermal storage, plantrooms, cooling towers, generator rooms)

a. STEM Zone Education Hub

The STEM Zone is a dedicated education hub designed to provide functional and fluid spaces for education and entertainment activities suitable for school aged children and tertiary students, plus any interested visitors. The STEM Zone will foster an interactive and

immersive learning environment, equipped with specialised tools, technology, and resources that support hands-on experiments and collaborative projects.

b. Multipurpose Rooms & Functions

Throughout the facility, multi-use rooms have been included in the design to provide the Aquarium a range of service offerings for education forms and hosting events. The ability to offer dedicated professional spaces, utilising the latest in AV technology and unique access to experience the Aquarium both during and after business hours, will provide a unique venue in the Townsville marketplace for event organisers.

c. Back of House

Considering the needs of staff, curatorial team and maintenance support, dedicated workspaces to care for all animals, store equipment, hide plant rooms and other technical infrastructure away from public infrastructure.

d. Wayfinding

Wayfinding will reflect the customer journey to guide them through different zones of the Aquarium. The interior navigation system will feature colour coded, pictographic icons. A simple to understand system will incorporate illuminated signage, wayfinding directional signs plus visitor guide maps at junctions throughout the Aquarium.

6.5.4 Second Floor

Total GFA of the Second Floor is 236 square metres and will consist of:

- Staff rooms
- Video conferencing studio
- Storage
- Dive supervisor station

a. Video Conferencing Studio

As Australia's National Education Centre for the Great Barrier Reef, a dedicated video conferencing studio will be built to ensure the Aquarium's education team can facilitate high-quality virtual connections, webinars and classes seamlessly around the world. Incorporating a dedicated studio into the designs will further strengthen the Aquarium's ability to connect globally and provide professional interactive classes from the Coral Reef Exhibit.

b. External Façade

The current building is a significant civic and community asset in Townsville and is visible from the street and creek and was 'revealed' when the adjacent buildings were demolished in 2022.

The original facility was previously recognisable from the height and location of a spire built on the iMax Theatre in the northwest of Lease W; however, this landmark feature was lost when the iMax Theatre was demolished with other buildings across Lease W during Phase One. As a result, the Aquarium will benefit greatly from constructing its own iconic façade that reflects the building's functions and establish a unique identifiable piece of architecture synonymous with the Aquarium and Great Barrier Reef.

6.5.5 Entry and Street Frontage

The preferred entry for the new building is off the western plaza, which correlates to the previous public entry of the building and alleviates safety concerns regarding queuing of large groups adjacent to Flinders Street. The current facility lacks significant street appeal and presence, therefore constructing a new statement façade (as outlined above) will

dramatically impact the facility's street appeal and broader presence as a landmark destination in the Townsville CBD.

6.5.6 Public Realm

The Project will enhance the public area with a landscaped buffer zone to the west of the facility. It will also incorporate a new undercover plaza and walkway along the public frontage of the Aquarium creating a welcoming and inviting space. The shaded walkway will connect the main entry, after hours entry, and the building's perimeter. The public area will be designed to Council's urban design guidelines, selections and specifications for hard and soft landscape features (see Figure 3 - *Concept of the public area outside the redeveloped Aquarium*.)

Figure 3 – Concept of the public area and external façade of the redeveloped Aquarium

6.6 Environmental Assessments and Sustainability

In accordance with the Net Zero initiatives and to demonstrate its leadership in sustainability to act on climate change, the Reef Authority will seek a 5 or 6 Star 'Buildings' rating from the Green Building Council of Australia. This Project may target the following credits:

- Credit 1 - Industry Development (responsible) (1 point)
- Credit 2 – Responsible Construction (1 point)
- Credit 3 – Verification and Handover (1 point)
- Credit 4 – Responsible Resource Management (nil points minimum requirement)
- Credit 5 – Responsible Procurement (1 points)
- Credit 6 – Responsible Structure (5 points)
- Credit 7 – Responsible Envelope (4 points)
- Credit 8 – Responsible Systems (2 points)
- Credit 9 – Responsible Finishes (2 points)
- Credit 10 – Clean Air (healthy) 2 points
- Credit 11 – Light Quality (healthy) 4 points
- Credit 12 – Acoustic Comfort (healthy) 2 points
- Credit 13 – Exposure to Toxins (healthy) 2 points
- Credit 14 – Amenity and Comfort (healthy) 2 points

- Credit 15 – Connection to Nature (healthy) 2 points
- Credit 16 – Climate Change Resilience (Resilient) 1 points
- Credit 17 – Operational Resilience (Resilient) 2 points
- Credit 18 – Community Resilience (1 point)
- Credit 19 – Heat Resilience (Resilient) 1 points
- Credit 20 – Grid Resilience (Resilient) 3 points
- Credit 21 – Upfront Carbon Emissions (Positive) 6 points
- Credit 22 – Energy Use (Positive) 6 points
- Credit 23 – Energy Source (Positive) 6 points
- Credit 24 – Other Carbon Emission (Positive) 4 points
- Credit 25 – Water Use (Positive) 6 points
- Credit 26 – Life Cycle Impacts (Positive) 2 points
- Credit 27 – Movement and Place (Places) 3 points
- Credit 28 – Enjoyable Places (Places) 2 points
- Credit 29 – Contribution to Place (Places) 2 points
- Credit 30 – Culture, Heritage, and Identity (Places) 1 points
- Credit 31 – Inclusive Construction Practices (People) 1 points
- Credit 32 – Indigenous Inclusion (People) 2 points
- Credit 33 – Procurement and Workforce Inclusion (People) 3 points
- Credit 34 – Design for Inclusion (People) 3 points
- Credit 35 – Impacts to Nature (Nature) 3 points
- Credit 36 – Biodiversity Enhancement (Nature) 4 points
- Credit 37 – Nature Connectivity (Nature) 2 points
- Credit 38 – Nature Stewardship (Nature) 2 points
- Credit 39 – Waterways Protection (Nature) 4 points
- Credit 40 - Market Transformation – 5 Points
- Credit 41 - Market Transformation – Unlimited Points

6.6.1 Environmental Management System and Plan

Prior to construction, an Environmental Management Plan (EMP) will be required from the appointed Contractor. An Environmental Management System and Plan certified and recognised to a standard such as AS/NZS ISO 14001 must be valid for the duration of the construction activities.

6.7 Technical Building Requirements

The technical component to the scope of works has been developed to account for the bespoke and highly specialised technical requirements of the Aquarium. Detailed planning has ensured that critical elements such as large-scale life support systems, controlled environmental conditions, animal husbandry facilities, and advanced sustainability measures are fully integrated into the design.

6.7.1 Substructure

Following the demolition and installation of the substructures, other structures need to be installed including plumbing and drainage, underground diesel storage tank, and aquarium creek water intake pipes, and lift pits.

6.7.2. Concrete and steel building structures

This consists of:

- Aquarium capacity is four million litres of saltwater including the Coral Reef Exhibit (CRE), Predator Exhibit and holding tank.

- A connected concrete wave machine structure and plantroom.
- Structural walls to support two floors and a trafficable roof area.
- Gantry crane structures a required to support a gantry crane with coverage of the CRE and Predator Exhibits.
- Pump plinths to support large pumps.
- Non-structural walls and glazing to create separation between spaces, staff areas and exhibits.

6.7.3. Electrical Infrastructure

This consists of:

- Main switchboard, distribution boards, diesel generators and fuel storage, electrical battery storage, renewable energy.
- The backup power requirement is 300 kVA diesel generators and 5000 litres of fuel storage (enough for 4 days critical animal life support power without re-fuelling).
- Renewable energy generation systems including a large photovoltaic system and may include other sources such as pico-hydropower and pico-wind power
- Electrical battery storage (250 kWh) electrical storage.
- Power monitoring and control system to enable load shifting and shedding and maximise energy efficiency and thermal storage in the large aquarium tanks.
- Building management system that enables automation and control of HVAC and animal life support systems to maximise efficiency and manage risks.

6.7.4. Mechanical Infrastructure

This consists of:

- The Heating Ventilation Airconditioning and Chilling (HVAC) system includes a central cooling plant, air handling units, thermal storage, heat and energy recovery systems and heat exchangers all controlled by a building management system.
- The main chilling plant maintains the Coral Reef Exhibit and Predator Exhibits with their critical temperature thresholds to main a health ecosystem.
- The passenger lifts will include a visitor lift to the first floor and separate staff lift for staff and heavy equipment.
- A three-tonne gantry crane for lifting structures and equipment from the Ross Creek wharf area, and a landing area in Kelleher Place.
- A 20,000-litre chilled water storage to manage peak loads and minimise chiller stop starts.

6.7.5. Animal life support systems

This consists of:

- Large animal life support systems include large centrifugal pumps 4kW – 50kW pumps, vacuum pumps, sand filters, ultra filtration, protein skimmers, ozone sterilisation equipment and associated control equipment.
- Small animal life support systems include reservoirs, ultraviolet sterilisers, calcium reactors
- A wave machine uses large air blowers and pneumatic or electric actuators pistons to operate air chambers that create a positive displace to create a wave in the CRE. This creates a realistic reef experience for the visitors and provides crucial water movement to support the CRE mesocosm.

- A reverse osmosis machine can adjust salinity of the main aquarium tanks or creek water intake water.
- Sand filters and other mechanical filtration devices filter sediments from the Ross Creek and Aquarium water.

6.7.6 Business Enabling System (BES):

A modernised BES is a vital component of the Project to ensure the Aquarium possesses the essential tools and technologies required to support the operations of the business.

The BES will be designed and implemented in accordance with Digital Transformation Agency (DTA) regulations and developed to optimise customer management, ticket sales and connection to finance software, third-party tourism sales and management, membership sales and management, edu-tourism and group bookings, function and event bookings, entry and exit management, point-of-sale systems and retail stock management (Café and Gift Shop) business reporting and customer satisfaction surveys.

6.8 Building Performance

A summary of the Aquarium's building performance (below) has been prepared to ensure the building meets both regulatory standards and occupants needs:

Building Component	Performance Criteria
Civil and landscaping	The lease (Lease B) area connects to an adjacent lease area (Lease W) and requires landscaping for beautification, shading, heat island management and separation between the lease areas.
Building foundations structure	The building will be located on reclaimed land owned by the Port of Townsville Limited, and a requirement of the Lease agreement is that the building be supported by structural piles into bedrock. The main building structure will be concrete and blockwork suitable for a marine environment exposed to severe weather and potential flooding.
Electrical, renewable energy generation, and power management	Stable power is critical for Aquarium operations. A two-hour window for power failure exists to avoid risk of mortality of livestock. Robust and reliable power management and supply is required to ensure continuity of power. Backup fuel generators and uninterruptable power suppliers are required in case of grid power failure. The Aquarium facility is power intensive and requires on-site renewable energy generation, electrical and thermal storage to manage peak power loads. Electrical safety is crucial in a building

	containing large volumes of seawater and extensive wet areas. Electrical vehicle charging is required for Aquarium electric vehicles.
Building Management System (BMS)	A sophisticated BMS is required to manage animal life support system equipment such as pumps, water quality control equipment, failure monitoring and lighting and is required for the heating, ventilation, air-conditioning and chilling systems.
Data and Communications	Data and communications networks are required to service the building management system, power management, educational exhibits, staff online work and in-confidence network, fire services and passenger lift communications.
Security systems	Security systems must comply with Security Construction and Equipment Committee and must protect Aquarium staff, visitors and property from theft and other unauthorised access. Card Code Verification and building access systems will be installed.
Hydraulics	Hydraulic systems must support the National Construction Code (NCC) 2025 requirements for plumbing and draining, wet fire requirements, and drainage from Aquarium café, amenities, staff kitchen and animal life support systems.
Mechanical	Mechanical systems including passenger lifts, gantry crane, lifting equipment and Heating Ventilation, Air-Conditioning and Chilling systems (HVAC) are fundamental to Aquarium operations. The typical mechanical equipment interfaces with animal life support systems (for example HVAC system provides cooling to Aquarium tanks).
Fire protection and emergency egress	Fire protection systems are required according to NCC 2025. A fire booster pump and header tank may be requirement to meet fire compliance. Fire and emergency egress are important elements where the building is surrounded by the Ross Creek on one

	side, a neighbouring building, a lease boundary and near the street. The systems will include a Fire Indicator Panel, fire detection and occupant warning systems, Fire Hydrant Booster pump (and header tank if required), fire hose reels and fire extinguishers according to NCC.
Acoustics	An Aquarium contains a lot of acrylic aquarium windows that reverberate noise such as loud machinery and general visitor noise. Acoustic management and separation are crucial to maintain a satisfactory visitor experience and safety for staff. Acoustics must comply with the NCC.
Animal Life Support Systems	A variety of terrestrial, freshwater, brackish and seawater Aquarium ecosystems require highly specialised and complex filtration and water quality systems, including filtration devices, sterilisation, pipes, valves, monitoring and control devices, pumps and reservoirs.
Aquarium exhibits (wet exhibits)	The building will contain approximately four million litres of Aquarium exhibits including a Coral Reef Exhibit, Predator Exhibit, ancillary (smaller) exhibits, Turtle Hospital, and small animal holding facility and live feeding area.
Digital and immersive exhibits (dry exhibits)	Theming, educational and interpretative material, digital enhancements, art and sculptures are required to complement the Aquarium exhibits and convey key messages.
Staff facilities	Staff office space, meeting rooms amenities including staff servery and toilets, end of trip facilities, workshop and storage, water quality laboratory, loading areas and scuba diving facilities.
Visitor facilities and Accessibility	Front entrance foyer area, public amenities, ticketing area, storage, pram parking, gift shop, café and parents' room.
Waste management	Refuse bin areas and access

7. OTHER CONSIDERATIONS

7.1 Global Interest and Brisbane 2032 Olympics

Delivering a world-class public aquarium represents a pivotal step in affirming the Commonwealth's Thrive 2030 strategy and underscores Australia's commitment to sustainable tourism and environmental stewardship.

It will also serve as an international-ready product during the Brisbane 2032 Olympics, offering an unparalleled opportunity to promote one of Australia's natural wonders and the irreplaceable Great Barrier Reef on the world stage.

This Project is seen as critical to regenerating economic benefits for the region, providing new opportunities for tourism and education, strengthening its reputation as an iconic destination in the heart of Townsville. As one of the city's signature visitor attractions, the Aquarium supports the Queensland Government's Destination 2045 tourism strategy and is relied upon to draw national and international audiences.

7.2 Community and Stakeholder Engagement

The Aquarium redevelopment is a nationally significant project, drawing high stakeholder interest from all levels of government, industry, education institutions, residents and the broader North Queensland community, all eager for its reopening.

The Reef Authority actively engages with key stakeholders via bi-monthly and/or quarterly in-person briefings. These meetings are supported by a written project update distributed bi-monthly. Proactive media engagement is implemented on an as-needed basis to drive positive awareness of relevant milestones and ensure residents are informed and engaged for the life of the project.

The Reef Authority actively engages with the following stakeholders:

- Minister for the Environment and Water
- Department of Climate Change, Energy, the Environment and Water (DCCEEW)
- Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts – Townsville City Deal
- Townsville City Council
- Port of Townsville Limited
- Townsville Enterprise Limited
- Townsville Waterfront Priority Working Group (Townsville CBD based tourism operators and businesses)
- Gurambilbarra Wulgurukaba Traditional Owners
- Media
- Townsville and North Queensland residents
- Former Volunteers and Members

7.3 National Market Research

Comprehensive national market research was conducted in 2022 to guide the Aquarium's design and business strategy. The consumer-led study provided pertinent information regarding the Aquarium's pricing strategy, distribution channels and mediums, and national appeal to identified market segments.

The research was made of up of both qualitative and quantitative methods at a local and national level consisting of key stakeholder interviews, multiple focus groups, and a nation-wide survey (n=1500), achieving statistically significant confidence levels.

In addition, in 2020, following receipt of the original funding tranche, the Reef Authority engaged industry stakeholders as part of the cost–benefit analysis and conducted face to face interviews with industry representatives. This provided an opportunity to better understand the value the facility holds while also capturing ideas from both the community and industry on how the redevelopment could further strengthen its role.

7.4 Indigenous Heritage and Cultural Considerations

The Gurambilbarra Wulgurukaba Traditional Owner co-design working group communicates with the Reef Authority about the enduring connection of Aboriginal and Torres Strait Islander peoples to country, teaching of their knowledge and heritage and how traditional knowledge is building Reef resilience and protecting the Reef for future generations. The co-design consultation group will continue to work alongside the Reef Authority during development and operation to ensure the continuation of collaboration.

As part of the Townsville City Deal funding agreement and Reef Authority's *Innovate Reconciliation Action Plan*, the Aquarium will offer identified employment opportunities for First Nations peoples ongoing.

7.5 Public Transport and Parking

The location of the Aquarium on Kelleher Place, provides strong transport connectivity, making it a convenient location for visitors and staff. The location is serviced by local transport managed by Townsville City Council, with the closet bus stop situated approximately 300 metres from the facility.

Nearby Wilson Parking offers convenient 24-hour parking at 45 Flinders Street, approximately 200 meters from the Aquarium entrance.

Short-term paid parking is available on surrounding streets. While driving is the preferred travel method for Townsville residents, the Aquarium is well positioned to encourage visitation from foot traffic or e-scooter adopters, because of its proximity to SeaLink which connects Townsville to Magnetic Island (a 10-minute walk away) and nearby accommodation, restaurants and esplanade.

7.6 Inclusivity and Accessibility

Accessible tourism ensures everyone, regardless of age or ability, can enjoy the same tourism products, services and experiences. The Reef Authority is committed to ensuring designs for the redeveloped Aquarium will integrate essential provisions for people with disabilities to ensure it meets national disability standards. This includes accessible entrances and exits, elevators with operational buttons placed at accessible heights, restroom facilities with space for manoeuvrability and bars for support, clear and accessible signage including tactile elements for visitors with visual impairments and adequate spaces to accommodate visitors with neurodivergent needs. The Reef Authority is considering the use of inclusivity credits in the Green Star submission to demonstrate credible and evidence-based inclusivity in building design.

The Reef Authority is committed to ensuring digital accessibility for people with disabilities and will develop its operational systems to continually improve the user experience and apply relevant accessibility standards across its operational website, point of sale systems and digital exhibits where applicable.

Inclusivity and accessibility provisions provide for all abilities. The facility has the potential to positively impact Townsville's economy by attracting travellers with disabilities both pre and post the Brisbane 2032 Olympic and Paralympic Games, who represent a significant market. The total estimated spend for the travelling party (family and friends of the person with a disability) is $1.9 billion (approximately 10 percent of total domestic spend in Queensland).

7.7 Childcare provisions

Due to the nature of the works, dedicated childcare facilities are not a requirement of this facility, however child and family friendly areas have been incorporated in to designs to ensure the Aquarium remains inclusive and welcoming for all, catering to the needs of families and enhancing the community atmosphere.

7.8 Volunteering

There is a strong history of volunteerism at the Aquarium with up to 140 volunteers registered to work at the facility during its operation, with many participations volunteering for a minimum of ten years. Volunteering fulfils a sense of purpose and meaning and provides an ongoing connection to the community essential for mental health and wellbeing. For marine science students, volunteering enables them to gain valuable work experience. Many students who have volunteered previously have gone on to secure permanent APS positions with the Reef Authority and other local marine science institutions retaining their skills in the North Queensland region.

7.9 Work health and safety measures

The Project will comply with the Commonwealth's *Work Health and Safety (WHS) Act 2011* and associated legislation.

The original facility is not known to contain any contaminated substances such as asbestos.

The appointed Demolition and Construction contractors will be required to submit Safety Plans relating to the construction phase prior to the commencement of any capital works. All contractors and subcontractors will be required to comply with WHS legislation applicable to the building site.

The Reef Authority has strong systems and controls in place, with oversight by senior staff, for managing its own workforce throughout the project. These align with the Reef Authority's existing WHS systems of oversight and reporting.

7.10 Local Road and Traffic Considerations

There are some traffic implications because of the location of the facility situated on Kelleher Place which is used by residents to enter and or exit the residential complex located at 1 The Strand, Townsville.

Any temporary road closures or lane restrictions will be communicated in advance to affected stakeholders, with residents of 1 The Strand, Townsville whose secondary access to their site may be impacted at various stages of capital works. The Traffic Management Plan will be structured to mitigate congestion, uphold safety standards, and ensure that community disruption is kept to the lowest practicable level.

Closures and diversions will be managed by a third-party traffic management supplier, and a detailed Traffic Management Plan will be submitted as part of any associated tenders.

8. PROJECT DELIVERY

The following timeline outlines the key milestones and phases of the Project subject to Parliamentary approval:

Early to Mid-2025	Preliminary works and concept designs
Late 2025	Expression of Interest Detailed Design Services (AusTender)
Early 2026	Request for Tender and Design Services (AusTender)
Early 2026	Seek PWC and development application approvals
Mid 2026	Small work packages including demolition (pending approvals)
Mid to Late 2026	Tender for Construction
Late 2026 to 2028	Construction and Major Works
2027-2028	Business development and implementation of marketing strategies
2028-2029	Exhibition commissioning
Early 2029	Great Barrier Reef Aquarium reopening

9. COST EFFECTIVENESS AND PUBLIC VALUE

9.1 Project Budget

The Australian Government has allocated a total of $180.1 million to the Project since 2019. Funding will be delivered as per the 2024-25 MYEFO (see 2.4) and must offset all costs required for delivery of the Project including risk and contingencies, cost escalation and associated professional fees.

A detailed breakdown of Project costings is available in the separate Confidential Cost Submission (Submission 2) made available to the Committee.

9.2 Cost effectiveness

The Reef Authority is taking all necessary steps to ensure the Project is delivered within the confirmed funding envelope and in accordance with Commonwealth expectations.

A critical component of this commitment has been the engagement of an external consultant to support the development of a robust Procurement Strategy (the Strategy) that identifies, assesses, and recommends the most effective commercial delivery model for the Project.

The Strategy complies with the CPRs, the Department of Climate Change, Energy, the Environment and Water's Environmentally Sustainable Procurement Policy and Reporting Framework, and reflects a comprehensive analysis of risks, approval pathways, and governance processes. Oversight of the Strategy will be maintained by the Aquarium

Steering Committee (ASC) throughout the planning and delivery phases to ensure disciplined execution and transparent decision-making.

9.3 Preferred delivery model

The Reef Authority intends to adopt a Design and then Construct (two separate procurements) approach to major works.

The delivery model will likely represent a series of priority activities to be delivered through a staged and pragmatic approach, beginning with early works and progressing into major works. This approach builds on the foundations established in Phase One and is designed to maximise efficiency, manage cost and program risk, and maintain project momentum.

It will:

- Optimise use of existing assets that retain strong functional and operational life;
- Deliver modular and clearly defined work packages; and
- Advance specialist aquarium design and commissioning activities.

These factors increase the importance of meticulous project integration and coordination by the Project team.

All project-related procurement activities are and will continue to adhere strictly to the CPRs, guaranteeing transparency, accountability, and value for money for the Commonwealth. To preserve the integrity of the procurement process, all goods and services have undergone competitive tendering, supervised by the Reef Authority's internal procurement team alongside an independent external probity advisor. This dual-assurance structure ensures procurement decisions are fair, equitable, and justifiable.

9.5 Revenue

A breakdown of revenue and offsets is available in the Confidential Cost Submission (Submission 2).

9.6 Public Value

There is positive public value in the proposal based on the improved visitor experience and increased number of exhibits and multi-purpose spaces for the tens of thousands (>150,000) of visitors per year and enhanced opportunities to connect with people virtually around the world. Furthermore, the long-term value of the Great Barrier Reef will continue as its many stories, biodiversity and the management actions in place to protect the Reef for future generations will be shared in more detail to in-person and online visitors.

9.6.1 Marine Science Education and Collaboration

The redevelopment will strengthen the Aquarium's and the Reef Authority's reputation as a leader in tropical reef education, STEM learning opportunities, using immersive storytelling and advanced technology to engage visitors of all ages with the Reef's formation, importance, and protection. It will also enhance the Reef Authority's role in edu-tourism, expanding on the Aquarium's proven success in hosting international students for programs in marine park management and citizen science.

Townsville's growing reputation as a global centre for marine science is driven by institutions such as James Cook University, Australian Institute of Marine Science, CSIRO, and the Reef Authority. The Project will place the Aquarium at the heart of the Townsville's marine science

hub, serving as a conduit between world-leading research, international collaboration, tourism, economic growth and exemplary marine park management and protection.

9.7 Economic Impact

In total, the Aquarium is expected to create 1,388 jobs (387 job per annum) from the start of construction to five years from the commencement of operations. This will stimulate economic activity, generating $564.1 million in total output.

10. PROJECT COST ESTIMATES

Project costs are detailed in the Confidential Cost Submission (Submission 2) issued separately to PWC members.