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</table>
1 Introduction

1.1 Project Scope
Cardno has been engaged by the Cassowary Coast Regional Council to form a team of preferred consultants to further develop the concept of providing the Mission Beach community with a modern multi-purpose aquatic facility.

Work previously conducted by other consultants on behalf of the council indicated that the MARCS Park site on the corner of El Arish – Mission Beach and Tully – Mission Beach Roads was the preferred site. Previous work also generated a conceptual design for the facility with an indicative construction budget of $6.18M.

As part of Cardno’s commission, the team was tasked with assessing whether this location was the optimal choice versus two other potential sites; verifying the financial viability of such a development on this site; preparing architectural and engineering documentation to a design development level, and finally calculating a budget estimate based on the prepared documentation with a target cost based on the previous consultants’ concept, being the $6.18M.

It should be noted that for this project, design development documentation has been considered to be 70% of a completed, ready for tender documentation package under the traditional construction procurement method.

1.2 Project Background
The Cassowary Coast Regional Council has undertaken studies for the development of an Aquatic Facility at Mission Beach over the past number of years.

In 2012 the Council approved the development of an Aquatic Facility at MARCS Park in Mission Beach and in 2013 Council accepted a preferred sketch design and site layout of the facility.

The Mission Beach Aquatic Facility (MBAF) Reference Group was consulted in the process and in principal gave endorsement of the location as well as the design and site layout.

The principles for the design is that of a “Rainforest Billabong” to provide a facility for the community but also provide a specific vernacular to attract tourists to a different experience and thus stimulate the economic development of the region.

As such, Cardno was appointed as the principal consultant and asked to amend the original design concept and site layout to better achieve the principles as expressed by the Council and reference group.

Cadastral survey of the site has been previously provided by Charles O’Neill Surveyors and was utilised as the basis of the design development documentation.

1.3 Project Team and Methodology
In order to achieve the scope as set out by Council, Cardno assembled the following consultant team charged with undertaking the relevant tasks:

Design Urban
- Prepare an evidence-based development options investigation and report assessing 3 locations within the Mission Beach region for the purpose of identifying the optimal location for the facility.
- Prepare a Master plan setting the facility in a perspective to the area from Mission Beach North CBD to Mission Beach Police Station and School.
- Show linkages to other key facilities
- Discuss natural environment and open space links
- Discuss transport and traffic links
- Prepare a precinct plan for MARCS Park inclusive of the Aquatic Facility, Art Centre, Tennis Facility, Girl Guides, Cricket Oval, Lions Shed and Shared Path
Outsource Management
Assess the ongoing financial viability of the Mission Beach Aquatic Facility located at the MARCS Park site.
Discuss and develop Management and Operational Plans.

CA Architects / COX Rayner
Preparation of a facility layout at the MARCS Park site which will incorporate the desired principles as expressed by the Council and reference group.
Design and prepare architectural documentation to a design developed level for each of the individual elements of the facility including building structures and pools

Cardno Civil, Structural, Building Services and Traffic Engineering
Undertake civil engineering design and documentation for the facility, including earthworks, stormwater internal roads etc.
Undertake structural engineering design and documentation for the facility, including buildings, pools and roof structures.
Design and Documentation of the electrical engineering services for the facility including power distribution throughout the facility.
Design and Documentation of the mechanical engineering services for the facility including air conditioning and ventilation requirements for the amenities building and hydro therapy building.
Design and Documentation of the hydraulic engineering services for the facility including water supply throughout the facility, sewerage and roof stormwater
Undertake a traffic impact assessment for the site access and existing adjacent road intersection.

Leisure Engineering
Undertake the hydraulic engineering design and documentation for the pools, including pool pumps, heating and filtration

Turner & Townsend
Prepare detailed cost estimates for construction based on the design development documentation prepared by the design team.

1.4 Facility elements
The brief as passed down by Council from previous iterations of the facility is that the project is to consist of the following essential elements:
> New amenities for the aquatic facility with the option of them able to be used by the public on market day held once a month on the oval,
> Kiosk / café / administration building
> A 25m long x 6 or 8 lane lap pool
> An indoor hydro therapy pool with the option of being able to hold learn-to-swim classes
> A leisure pool with a rainforest billabong atmosphere
> Shade structures

Other elements which would make the facility more comfortable and therefore attractive to visitors could be considered such as:
> Barbeque facilities
> Beach volleyball court
> Water slides
> Indoor or outdoor function spaces capable of usage during both the day time and evening.
2 Evidence Based Assessment

This assessment has been commissioned to provide evidence-based analysis and evaluation of three possible sites for the development of a new aquatic facility at Mission Beach. The need for this facility is not in question as numerous studies, Council reports and policies have highlighted the fact that Mission Beach needs an aquatic facility. However, there is a choice as to where this facility is to be located, and this report sets out assessment criteria as to which site fulfils the requirements for the facility. The evaluation criteria are identified from existing policy, good planning practice, sustainable investment and maintenance practice, and risk minimisation.

The sites chosen for evaluation are as follows:

**North Mission Beach Foreshore**
- The area in and around the site currently occupied by the Council-owned Mission Beach Caravan Park. This site lies between the beach and Porter Promenade.

**MARCS Park Site**
- Located on the northern edge of MARCS Park, a Council-managed sport and recreation site located 1.3 kilometres from the beach at the intersection of El Arish – Mission Beach and Tully – Mission Beach Roads.

**Wongaling Site**
- A privately owned site at the intersection of Webb and Reid Roads in Wongaling. The site is set back from the beach, adjacent to existing residential development and approximately 200m from the Mission Beach Primary School.

In order to evaluate the best site for the aquatic facility, the evaluation methodology adopted for comparison of the site will interpret and apply the following criteria:

> Policy – Does the site meet the objectives of current policy?
> Previous Evaluations
> Good Planning Practice – Does the site accord with good practice?
> Risk – Does the site represent undue risk?
> Cost and Value – Does the site support value for money and sustainable investment?
> Marketing – Does the site support the marketing of Mission Beach

A detailed matrix listing the breakdown and core elements of each of these criteria along with their evaluation scores for each site can be found within the Evidence-Based Assessment report in the appendices of this document.

The results of the analysis can be seen below:

<table>
<thead>
<tr>
<th>Table 2-1 Evidence-Based Site Evaluation Results (Weighted)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North Mission Beach Foreshore</strong></td>
</tr>
<tr>
<td>Total Scores (Maximum 129)</td>
</tr>
</tbody>
</table>

From the evidence-based evaluation the score the MARCS Park site received was the highest, clearly identifying it as the most suitable site for the Mission Beach Aquatic Facility.

Of the three sites evaluated, the site at MARCS Park meets the criteria better than the other two options and is therefore recommended as the optimum site for the development of the Mission Beach Aquatic Facility.
3 Management and Operational Plan

3.1 Project Introduction

The Mission Beach Aquatic Facility Project is significantly closer to becoming a reality after many years of discussions, proposals and studies by the community and Local Government.

Recently the Cassowary Coast Regional Council (the Council) and the Mission Beach Aquatic Facility Community Reference Group (MBAFCRG) have endorsed a specific location, i.e., MARCS Park, approved a certain design concept, and acknowledged that a staged approach supported by external funding is required for delivery of this important regional project.

Based on the most recent project costings the first stage of the project will include construction of a six lane 25 metre lap pool, entrance facilities (including change rooms, administration and café), associated internal road and car park, paths, landscaping, utilities, fencing, retaining walls and closed-circuit television (CCTV). Funding of this initial stage is seen to be achievable within the scope of Council’s current and planned funding. This Management and Operational Plan has been prepared for the operation of such a completed Stage One facility and also analyses a Stage Two project and provides comparisons between the two stages.

A completed Stage Two facility will incorporate the following additional major assets:

> An indoor hydrotherapy pool
> A shade sail cover on the 25 metre lap pool
> A billabong pool with rainforest landscaping
> A beach volleyball court
> Barbeque structures

![Proposed Master Plan for facility](image-url)
Such a facility will significantly increase overall operations compared to Stage One particularly in relation to the Billabong Pool in a rainforest which will be a unique asset for the region and will have the potential to attract significant visitor numbers to the facility.

The Billabong pool, landscaped within a rainforest setting, will be designed to reflect the natural beauty of the Mission Beach region and provide a relaxed, peaceful and shaded environment which will attract both locals and visitors to this distinctive facility.

As there is a considerable overlap between a Management and Operational Plan for Stage Two, the details of Stage One are not duplicated but referred to in the context of additional infrastructure and components to be included for a Stage Two facility.

3.2 Previous Studies

As indicated above, numerous studies have been commissioned, performed and analysed in relation to this project. Significant examination of all aspects of the proposed Mission Beach Aquatic Facility has been undertaken.

This Management and Operational Plan will build on the existing information to take the project to the next level and analyse how this facility could potentially be operated once constructed. Therefore, where appropriate, references will be made to previous studies in building this Management and Operational Plan.

Certain decisions have now been made by Council regarding the location and facility mix of the project. These can now be used as a basis for future planning, operational analysis and decision making.

What has been clear from all previous studies is the concept that the facility will need ongoing annual subsidisation from the Council. The most recent Feasibility Study contained a variety of scenarios resulting in annual subsidy amounts ranging from $158,412 to $187,575, without including any allowance for depreciation.

This presents a significant challenge for the Council as not only are funds to be sourced for construction, but operating funding support will potentially need to be found annually in order to keep the facility open.

3.3 Project Need

Previous studies have provided evidence of the need and value of such a facility to the community. This has been well-established on a variety of levels and is therefore not re-analysed in this report. Following is the comparison of Stage One and Stage Two facilities which will demonstrate the benefits of the project to both key stakeholders: the community and Cassowary Coast Regional Council.
3.4 Innovation

The approach of this plan has therefore been to research and analyse the proposed facility, in both Stages, to present management and operational models that will benefit the Mission Beach community and demonstrate the potential to minimise subsidisation from the Council.

Previous studies have not identified any specific approaches for Council to minimise ongoing subsidies – this will however be part of the focus of this plan.

While there are various structures and approaches analysed in this plan, the underlying precepts will be applicable to any approach adopted by Council and the Community. The main issue is not how the model is legally structured, but how committed all parties are towards working together to make the facility an ongoing success and generating positive outcomes for the community whilst minimising the financial impacts to ratepayers.

3.5 The Concept

The fundamental concept is one of a facility that is a community hub with consistent and continuous involvement by community members, local businesses and Council. The models foresee a ‘partnership’ approach to virtually all operational aspects of this facility with mutually beneficial outcomes for all parties.

It is clear that operating this pool in a similar manner to Council’s other pools will require significant annual subsidies by Council. For the 2013/14 financial year, Council expensed just under $700,000 in relation to these three pools.

There are factors at play relating to the development of this facility that can potentially be utilised to their maximum benefit to obtain a significant advantage for both Council and the Mission Beach community. The two distinguishing features which differentiate the situation from that of Council’s other pools are:

The significant number of tourists visiting Mission Beach on an ongoing basis; and the high level of community contribution that has been involved in the project to date, evidencing the potential for such continuing support once the facility has been constructed.
Exploitation of these two factors, if implemented and meshed correctly, will potentially have a considerable positive impact on the ongoing viability of the Mission Beach Aquatic Facility.

### 3.6 Tourism

Setting Mission Beach apart from most comparable small communities and their ‘local pools’ is the high number of visitors to the region. Mission Beach is a premium Australian tourist destination; extremely well known and promoted exceptionally well by Mission Beach Tourism. On average, there are 1,646 visitors staying in Mission Beach per day in accommodation ranging from the Council-run Caravan Park to five-star resorts.

![World Heritage Areas](image)

Previous studies have not included tourist numbers in their financial projections for the facility due to difficulties associated with making such predictions. This analysis however, has specifically identified tourism as a significant area of potential revenue and devoted resources to designing programs to take maximum advantage of the situation.

### 3.7 Community Involvement

Community involvement in this project dates back to May 2001 with the incorporation of the Mission Beach Aquatic & Recreation Club. Council has been proactive in seeking community input regarding the design and location of the project through the MBAFCRG over many years.

The continued involvement of the community is strongly recommended within the analysis of the proposed structure. It is recommended that Council consider the adoption a ‘Committee of Management or Subsidiary of Council’ structure, which would involve community members being appointed to a Committee or Board on a voluntary basis to make recommendations and/or decisions regarding the operations of the facility.

Such utilisation of the skills in the community, and maintenance of a direct link between local residents and major decisions relating to facility operations is seen as being the most favourable option to maximise the ongoing success of this project.

### 3.8 Financial and Marketing Projections

In general, the projections included in this document have been deliberately constructed in a conservative manner. Generous allowances for contingencies have been included in all financial models to provide a buffer against any unforeseen expenses. It is also emphasised that most predictable costs have been included in the projections, with little or no additional items to be absorbed by Council.
In deriving marketing projections this document has employed very conservative assumptions when forecasting potential visitation rates. The most meaningful figures have been derived from the Tourism Profile created for the Cassowary Coast Region as a whole. Due to a change in ABS data collection procedures (in 2011) it is not possible to obtain meaningful data on the Mission Beach community alone; therefore it is essential that these figures are extrapolated based on older data.

Assumptions made within forecast revenue allow for a 5 per cent conversion rate across most visitor target audiences.

A paper produced by the CSIRO forecasts tourist numbers to the Mission Beach region of 1,646 people per day. Even when considering the most predominant market, being those day trippers and domestic overnight visitors to the region for a ‘Family Pass’ offering, the forecast conversion rate allows for 2,087 families annually, which breaks down to an average of 23 persons per day.

3.9 Operational Model

It is emphasised in this plan that the actual operational model selected for the facility will not impact financial results or sensitivity, or make the project successful or unsuccessful. There are relative merits and deficiencies of all potential formal structures regardless of type.

The proposed structure per this evaluation is a Committee of Management or Subsidiary of Council. Such a structure involves the community in a formal way, while still giving Council control over the operation of a major asset.

Successful ongoing operations of the facility will need to involve the establishment of Key Performance Indicators (KPIs) for management, along with a system for reviewing and analysing such performance to ensure timely reaction to unacceptable indicators. A full risk management process will also be key to reducing all risks of operation to an acceptable level.

A fundamental aspect of the design of facility operations is the involvement of community and local business partners in the day-to-day functions of the facility. At this stage it is envisaged that this would involve partnerships with:

- A café operator
- Tourism providers
- Mission Beach Surf Life Saving
- A child care operator
- Fitness and rehabilitation operators

3.10 Stage One

Stage One of the Mission Beach Aquatic Facility is comprised of the following components:

- A six lane 25 metre lap pool;
- All earthworks and external services;
- Entrance facilities including;
  - Change rooms
  - Administration
  - Café
- Associated internal road;
- Car park;
- Paths;
- Landscaping;
- Utilities;
- Fencing;
> Retaining walls; and
> CCTV.

The facility at this stage is predominantly serving the region’s need for a community pool similar to those in Innisfail, Tully and Cardwell. As such, and similarly to other regional pools, it will have limited ability to generate revenue.

3.10.1 Market Analysis

The facility has been designed to cater to the local community and is therefore quite easily delivered to this market; with activities such as lap swimming, learn to swim classes and school usage.

It is, however, possible to tap into the sizeable visitors market in the Mission Beach area with targeted marketing and a small investment in add-on equipment. The analysis of tourism products available in the region found a gap in the area of activities for children and the provision of child care while parents are pursuing ‘adventure’ activities.

It is proposed that the facility consider the purchase of large-scale floating structures and have an Inflatable Water Play Park constructed on the 25 metre pool for weekends. This could then be marketed as a family activity in Mission Beach, along with the establishment of a Kids’ Club providing day care facilities using the same equipment on weekends.

3.10.2 Financial Projections

Projections were compiled for three representative years of operation of the facility. The first year of operation includes certain start-up expenses which will be ‘one-off’ in nature. The second year of operations is considered the ‘Base Year’ as it represents annual results with no unusual expense items. The third year represents a ‘Maintenance Year’ where the facility undergoes major maintenance, and as a result is closed for one month of the year.

Summarised projected results for these three years are:
Table 3-1  Summary of annual forecast financial results for Stage One

<table>
<thead>
<tr>
<th></th>
<th>Start Up Year ($)</th>
<th>Base Year ($)</th>
<th>Maintenance Year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue – Local</td>
<td>$ 109,998</td>
<td>$ 109,998</td>
<td>$ 102,029</td>
</tr>
<tr>
<td>Revenue – Visitors</td>
<td>93,434</td>
<td>93,438</td>
<td>85,651</td>
</tr>
<tr>
<td>Expense</td>
<td>(357,000)</td>
<td>(312,500)</td>
<td>(329,167)</td>
</tr>
<tr>
<td>Net Surplus/(Deficit)before Depreciation</td>
<td>(153,565)</td>
<td>(109,065)</td>
<td>(141,486)</td>
</tr>
<tr>
<td>Depreciation</td>
<td>(110,000)</td>
<td>(110,000)</td>
<td>(110,000)</td>
</tr>
<tr>
<td>Net Surplus/(Deficit)</td>
<td>$ (263,565)</td>
<td>$ (219,065)</td>
<td>$ (251,486)</td>
</tr>
</tbody>
</table>

The base year, as a representation of ongoing operations projects an operating deficit of $219,065. Should depreciation be removed from this calculation, the deficit would be $109,065.

3.10.3 Sensitivities

A variety of calculations were performed to determine what the impact of changing certain financial assumptions would have on the projected financial result. These impacts are summarised as follows:

Table 3-2  Summary of financial impact of potential sensitivities during Stage One

<table>
<thead>
<tr>
<th>Sensitivity Outline</th>
<th>Impact ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of the population to that projected from Census results</td>
<td>(27,967)</td>
</tr>
<tr>
<td>Increase in the Catchment Multiplier to 5 from 3.8</td>
<td>20,131</td>
</tr>
<tr>
<td>Increase all prices by 10 per cent</td>
<td>15,756</td>
</tr>
<tr>
<td>Decrease the visitor conversion rate from 5 per cent to 2.5 per cent</td>
<td>(46,719)</td>
</tr>
<tr>
<td>Increase the visitor conversion rate from 5 per cent to 7 per cent</td>
<td>31,775</td>
</tr>
<tr>
<td>Increase the visitor conversion rate from 5 per cent to 10 per cent</td>
<td>79,438</td>
</tr>
<tr>
<td>Decrease the estimated useful life of the constructed asset from 50 to 40 years</td>
<td>(18,000)</td>
</tr>
<tr>
<td>Increase operating costs by 10 per cent</td>
<td>(31,250)</td>
</tr>
<tr>
<td>Decrease operating costs by 10 per cent</td>
<td>(31,250)</td>
</tr>
</tbody>
</table>

From a revenue perspective, the most impactful scenarios relate to the visitor population given the much higher number of individuals who can be targeted compared with the local community. A halving of the number of visitors attracted to the facility will have a negative impact on the bottom line of $46,719 (which would realistically occur with the introduction of a competing facility such as the proposed Rotary Park ‘Splash Pad’). Increasing the number of visitors attracted to the facility to 7 per cent and 10 per cent will improve the bottom line by $31,775 and $79,438, respectively.

A breakeven scenario has been calculated for Stage One using a combination of increasing prices and increasing the visitor conversion rate. To achieve breakeven under this scenario, Stage One will need to increase the visitor conversion rate to 12.5 per cent, and raise all prices by 23 per cent. Given this analysis, it therefore does not appear that a Stage One facility has the capacity to break even.

3.11 Stage Two

Stage Two of the Mission Beach Aquatic Facility is comprised of the following components:

> A six lane 25 metre lap pool;
> Entrance facilities including:
  - Change rooms
  - Administration
  - Café
> Associated internal road;
> Car park;
> Paths;
> Landscaping;
> Utilities;
> Fencing;
> Retaining walls;
> CCTV;
> Indoor hydrotherapy pool;
> Shade sail cover on 25 metre lap pool;
> Billabong pool with rainforest landscaping;
> Beach volleyball court; and
> Barbeque structures.

This larger facility, incorporating three pools, serves the community and the visitor population in a variety of ways and provides a diverse range of options for use.

3.11.1 Market Analysis

The facility has been designed to cater to the local community and visitors to the region and delivers both sport and recreational needs - as outlined in Stage One and expanded with the addition of the hydrotherapy pool - and leisure needs, with the billabong pool and beach volleyball court.

It is therefore possible to tap into the sizeable visitor market in the Mission Beach area with targeted marketing and a small investment in add-on equipment. The analysis of tourism products available in the region found a gap in the area of activities for children and the provision of child care while parents are pursuing ‘adventure’ or relaxation activities.

It is proposed that the facility consider the purchase of large-scale floating structures that create a removable Inflatable Water Play Park constructed on the 25 metre pool for weekends. This will then be marketed as a family activity in Mission Beach, along with the establishment of a Kids’ Club providing day care facilities using the same equipment for up to three hours (on weekends).

With the wide variety of options available, the facility will be able to attract family groups both locally and from visitors to Mission Beach with family passes.
Backpackers can be attracted on weekends for planned activities such as beach volleyball tournaments and entertainment. Grey nomads will most likely be attracted to the hydrotherapy pool activities and general lap swimming.

3.11.2 Competitive Products

A crucial factor for the marketability and potential visitation rates will be determined by the potential to have two very similar offerings within close proximity. It is not feasible nor viable to have both the Mission Beach Aquatic Facility and Rotary Park ‘Splash Pad’ on offer a stone’s throw apart as this will quite literally split the market when considering the predominantly family audience visitation for this region, and will create a distinct competitive disadvantage to the aquatic facility.

From a marketing perspective; there is no doubt the proposed ‘Splash Pad’ will draw families with younger children to the Rotary complex and all other visitation to the Mission Beach Aquatic Facility. It is imperative a decision be made to either combine the offerings or pursue one complex as opposed to the other because the population catchment in addition to the tourism visitation rates do not warrant such similar entities operating with such significant operational costs for the Council.

The business model presented in Stage Two delivers significant benefit to the community with regards to boosting employment, tourism and economic opportunity as outlined within the Cassowary Coast Community Plan 2011-2021. This is due to the marketing strategy being based on both partnerships with regards to external suppliers as well as cross-promotional activities for tourism and accommodation venues.

Water play and aquatic based facilities are very common throughout the Far North Queensland market. Therefore it is essential the Mission Beach Aquatic Facility be able to promote a point of difference; particularly when an admission fee is mandatory compared to free offerings from Cairns Lagoon and the Townsville Strand. Only when Stage Two of the proposed development comes to fruition will there be a unique selling point for this venue; as the ‘Rainforest Billabong’ concept is implemented.

Figure 3-4 - Cairns lagoon [Source: http://www.cairnsswimming.com.au/pools/the-lagoon/]

3.11.3 Financial Projections

Projections were compiled for three representative years of operation of the facility. The first year of operation includes certain start-up expenses which will be ‘one-off’ in nature. The second year of operations is considered the ‘Base Year’ as it represents annual results with no unusual items. The third year represents a ‘Maintenance Year’ where the facility undergoes major maintenance, and as a result is closed for one month.

Summarised projected results for these three years are:
Table 3-3  Summary of annual forecast financial results for Stage Two

<table>
<thead>
<tr>
<th></th>
<th>Start Up Year ($)</th>
<th>Base Year ($)</th>
<th>Maintenance Year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue – Local</td>
<td>159,825</td>
<td>159,825</td>
<td>147,704</td>
</tr>
<tr>
<td>Revenue – Visitors</td>
<td>328,075</td>
<td>328,075</td>
<td>300,735</td>
</tr>
<tr>
<td>Expense</td>
<td>(550,000)</td>
<td>(486,500)</td>
<td>(532,750)</td>
</tr>
<tr>
<td>Net Surplus/(Deficit) before Depreciation</td>
<td>(62,100)</td>
<td>1,400</td>
<td>(84,311)</td>
</tr>
<tr>
<td>Depreciation</td>
<td>(210,000)</td>
<td>(210,000)</td>
<td>(210,000)</td>
</tr>
<tr>
<td>Net Surplus/(Deficit)</td>
<td>(272,100)</td>
<td>(208,600)</td>
<td>(294,311)</td>
</tr>
</tbody>
</table>

The base year, as a representation of ongoing operations, projects an operating deficit of $208,600. Should depreciation be removed from this calculation, a surplus of $1,400 would be generated.

3.11.4  Sensitivities

A variety of calculations were performed to determine the impact of changing certain financial assumptions would on the projected financial result. These impacts are summarised as follows:

Table 3-4  Summary of financial impact of potential sensitivities during Stage Two

<table>
<thead>
<tr>
<th>Sensitivity Outline</th>
<th>Impact ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of the population to that projected from Census results</td>
<td>$ (36,281)</td>
</tr>
<tr>
<td>Increase in the Catchment Multiplier to 7 from 5</td>
<td>33,552</td>
</tr>
<tr>
<td>Increase all prices by 10 per cent</td>
<td>48,790</td>
</tr>
<tr>
<td>Decrease the visitor conversion rate from 5 per cent to 2.5 per cent</td>
<td>(164,038)</td>
</tr>
<tr>
<td>Increase the visitor conversion rate from 5 per cent to 7 per cent</td>
<td>155,858</td>
</tr>
<tr>
<td>Increase the visitor conversion rate from 5 per cent to 10 per cent</td>
<td>389,646</td>
</tr>
<tr>
<td>Decrease the estimated useful life of the constructed asset from 50 to 40 years</td>
<td>(27,000)</td>
</tr>
<tr>
<td>Increase operating costs by 10 per cent</td>
<td>(48,650)</td>
</tr>
<tr>
<td>Decrease operating costs by 10 per cent</td>
<td>48,650</td>
</tr>
</tbody>
</table>

From a revenue perspective, the most impacting scenarios relate to the visitor population given the much higher number of individuals who can be targeted compared with the local community. A halving of the number of visitors attracted to the facility will have a negative impact on the bottom line of $164,038 (which would realistically occur with the introduction of a competing facility such as the Rotary Park ‘Splash Pad’). Increasing the number of visitors attracted to the facility to 7 per cent and 10 per cent will improve the bottom line by $155,858 and $389,646, respectively.

A breakeven scenario has been calculated for Stage Two using a combination of increasing prices and increasing the visitor conversion rate. To achieve breakeven under this scenario, Stage Two will need to increase the visitor conversion rate to 7.5 per cent, and raise all prices by 6.8 per cent. This is considered an achievable proposition with effective management.

3.12  Cost/Benefit Analysis

Essentially, upon reviewing the financial projections for each Stage, there is very little difference in the projected deficit for the Base Year models. Financial results should therefore have very little impact on a comparison between the two stages.

The extension of facilities available under Stage Two gives it a clear advantage in relation to providing the community with a diverse and usable facility which can tap into the visitor market to finance the additional facilities and turn it into a vibrant social hub in Mission Beach.

On the cautionary side, the sensitivity analyses demonstrate that variances in factors of financial success and failure will have significantly bigger impacts on the bottom line for a Stage Two facility. Should this
The recommended formal structure of operations, marketing and risk management must be implemented to ensure that significant losses are not generated by a facility which is not utilised to its full potential.

Broader economic and community benefits of both stages can be calculated with reference to a recent Victorian study which found that for every dollar spent to deliver aquatic and recreation programs, there is a $7.60 benefit. Using Base Year projections, these benefits are quantified as $2.29 million for Stage One and $3.64 million for Stage Two annually. This will be increased by the expenses incurred by facility partners, such as the café operator.

In addition to direct employment by the facility of approximately 3 full-time equivalent employees (FTEs) in Stage One and 5 FTEs in Stage Two, facility partners such as the café, child care provider and Mission Beach Surf Life Saving will also generate additional significant employment opportunities.

<table>
<thead>
<tr>
<th>Table 3-5 Summary of comparative characteristics of Stage one and Two</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensitivity Outline</strong></td>
</tr>
<tr>
<td>Major facilities provided</td>
</tr>
<tr>
<td>Estimated increased employment for the region</td>
</tr>
<tr>
<td>Annual community users of facility</td>
</tr>
<tr>
<td>Annual visitors to facility</td>
</tr>
<tr>
<td>Annual expenses of running the facility (including depreciation)</td>
</tr>
<tr>
<td>Potential annual result generated for Council</td>
</tr>
<tr>
<td>Net subsidy per visit</td>
</tr>
<tr>
<td>Impact of unsuccessful marketing and/or introduction of a direct competitor reducing visitors by half</td>
</tr>
<tr>
<td>Impact of successful marketing activities increasing visitor conversion rates by 2 per cent</td>
</tr>
</tbody>
</table>

The full version of the Management and Operational Plan prepared by Outsource Management can be found in the appendices of this document.
4 Master Plan

The Cassowary Coast Regional Council has produced a Priority Infrastructure Plan. Within this document, council has outlined a strategy to “upgrade MARCS Park to a district level facility”.

The recent activity by the current consultant team to design and document an aquatic facility on this site provides additional impetus to create a master plan for the park so that over time a coherent and well-considered district level facility is delivered as budgets for implementation become available.

In addition to planning facilities, Council has considered potential synergies of facilities. Arts, culture, sport, markets and community meeting spaces form part of the strategy to ensure that this location delivers synergies and a strong sense of place, ensuring that MARCS Park becomes a strong focus for the broader Mission Beach Community.

In addition to the facilities, the park setting could become a place which strongly expresses the tropical context within which it finds itself. This will further add to creating a strong sense of place and identity.

4.1 Landscaping Strategy

MARCS Park offers a point of difference to other recreation areas in the region. The proposed aquatic facility includes a billabong pool which reflects those occurring in surrounding natural areas and parks. In addition to this facility, there is an opportunity to express the tropical character of Mission Beach and enhance existing vegetation with that which is clearly tropical in character. Currently vegetation is limited to the “edge” of the park as significant clearing has taken place, as well as damage from recent tropical cyclones.

In addition to expressing the tropical context, planting should be used to clearly delineate the various facilities, and create better spatial definition, shading and visual attraction. There is a real opportunity to enhance the park and create a unique and significant recreation facility which strongly expresses its context through landscaping.

4.2 Proposed Master Plan

The plan on the following page indicates the MARCS Park master plan. This plan includes existing facilities as well as proposed future facilities. Together these will raise the profile of this recreation park and potentially lift it to regional park status in accordance with the objectives of the CCRC Priority Infrastructure Plan.

The plan shows the proposed aquatic facility and its individual elements which will enhance the existing arts and fitness centre, and support the existing girl guides. Additional parking is shown for the existing tennis courts and club as well as a potential new bowls rink.

The complete Master Plan report can be found in the Appendices of this document.
Figure 4-1  Proposed MARCS Park Master Plan
5 Traffic Impact Assessment

The proposed site for the aquatic facility is located at the junction of El Arish – Mission Beach Road and Tully – Mission Beach Road. The site is currently utilised for a number of community and recreational events including as a community space for markets, recreation and sport. The addition of the aquatic facility is intended to complement and enhance the recreational aspect of the site.

In order to estimate the traffic generation for the site, a first principle analysis was undertaken. This process approximated the generation based on assumptions relating to the operation and constraints for the aquatic centre, sourced from the Review of Feasibility Report previously prepared for Council and from advice from Council representatives.

Results from the intersection analysis have shown that the existing intersection forms of both the El Arish – Mission Beach Road / Tully – Mission Beach Road / Site access intersections will be adequate to accommodate the anticipated development traffic volumes. The sensitivity analysis to investigate the impact of the Monster Markets has indicated that some light internal queuing may result at the ultimate scenario; however this will occur without the development anyway.

Within the current design for the Aquatic Facility, the existing driveway has been designed to ensure that there is sufficient queuing length as required.

Details of the Traffic Impact Assessment can be found in the full report in the appendices of this document.

6 Architectural Design Development

CA Architects in association with Cox Rayner were commissioned to design the new aquatic facility as part of Cardno’s design consultancy team.

The brief to the architectural team highlighted that the aquatic centre needs to “offer a point of difference for aquatic and leisure facilities within the region” and that a pool designed as a billabong rather than a lagoon was to provide a unique experience required to attract tourists to the region and invites them to spend some time in the region whilst also attracting the locals from their usual watering holes.

A strong desire to create a sense of place is achieved by village style architectural forms. Measures were undertaken during the design process to compress the facility in an effort to reduce construction and future operating costs, as well as create a user friendly facility capable of being operated with minimal staffing numbers.

It was also expected that the new facility helps to reinforce the notion that the park is the activity node of the area, creating a new arrival experience for the precinct whilst ensuring that the surrounding facilities are well integrated, in particular the neighbouring arts centre.

Further details of the challenges which arose and solutions derived during the design phase can be found in the detailed report in the appendix A of this document.

7 Civil and Structural Design Development

The site is bound on the northern and western boundaries by high order roads that service North Mission Beach and Wongaling Beach. Industrial and commercial development exists opposite the site to the west and a residential development to the south. Adjacent to the site on the northern boundary is a drainage channel that flows into a creek that flows to the south. A shared pedestrian and cycle path is located on the site on the western and northern boundaries.

Bulk earthworks are required to prepare the site for pool and building construction, access to the site and maintain suitable grades for movement through the site.

It is expected the following volume of earthworks is required:
Cut to fill and compact: 1140m³ (solid volume)
Cut and remove from site: 1850m³ (solid volume)

Access to the site is from Tully-Mission Beach Road. It is proposed to utilise the existing intersection and access road to the site. The entry road will be reconstructed and has been designed generally in accordance with the FNQROC Development Manual.

Parking is being provided as part of the development. 15 sealed car parking spaces including one person with disability space will be provided as angled parking from the reconstructed access road. An additional 13 car parking spaces as required by the traffic report, are available within the existing site. The remainder of the existing parking spaces available in MARCS Park will be retained with no change.

During construction the site will temporarily be inaccessible and measures will be put in place to limit the time of disruption to the other users of the site.

The site generally falls to the north-west to earth swales located adjacent to the cycle path. These swales fall to the drainage channel and creek located on the northern and eastern boundaries.

It is proposed to utilise an existing culvert under the cycle path and provide an additional stormwater pipe under the cycle path to drain the stormwater flows from the main aquatic facility site. Flows from the eastern part of the site will be directed to the existing channel via grassed swales within the development.

The entry road will be drained through a piped system for the minor storm (Q5) and overland flow for the major storm (Q100). Stormwater flows from the entry road will be directed to an existing channel under the entry road.

Water infrastructure exists in the road verge of Tully-Mission Beach Road. The size of the water main is to be confirmed prior to final design being completed.

It is proposed to connect a DN150 water service to the existing water main in Tully-Mission Beach Road. The new main internal to the site will provide services to the new aquatic facility and incorporate pillar fire hydrants for firefighting purposes. A water service connection and meter for the aquatic facility will be installed adjacent to the amenities building.

Sewer infrastructure exists adjacent to the site. A DN150 gravity sewer main is located on the northern boundary of the site. Two sewer pressure rising mains; DN100 and DN250 in size, are located on the northern and western boundaries of the site.

It is proposed to provide a property connection branch on the gravity sewer main on the northern boundary of the site. Sanitary drainage and pool back wash will be conveyed to this connection branch.

The other users of the site are likely to be effected at times during the construction period. The table below summarises the expected effects on the site uses.

<table>
<thead>
<tr>
<th>Site Use</th>
<th>Access and Parking Issues</th>
<th>Loss of Services</th>
<th>Construction Pollution and Vibration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cricket Nets and Oval</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Community Arts Centre</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gym/Covered Area</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Girl Guides</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Tennis Courts</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Community Markets</td>
<td>Dependent on Dates</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

The effects on other site users during construction will be managed by the contractor to limit the time of disruption to as little as necessary.

On completion of the civil engineering construction required for the proposed aquatic facility, the surrounding users of the site will be provided with the following improved facilities:

> Improved entry and exit from site,
- Redeveloped and improved entry road,
- Improved stormwater drainage to the site,
- Sealed parking spaces,
- Underground electrical services,
- Security of services, and
- Parking areas for other site users retained.

Structural engineering design will be undertaken in accordance with all relevant Australian Standards and utilising best practice engineering principles. Wind loads on the building shall be for the appropriate wind speed as determined for the site which is equivalent to a high level category 3 cyclone. Pools will be designed to suit the specific ground conditions found at the site as per previous geotechnical engineering investigations. Material finishes shall be specified to ensure suitable protection given the potentially corrosive environment they will be found in, given its proximity to the ocean and pool chemicals.

Further details can be found in the Civil and Structural engineering report found in the appendices of this document.

### 8 Building Services Design Development

A detailed report for the Building Services engineering can be found at the appendix A of the documents however a brief summary is as follows.

#### 8.1 Electrical Engineering

The existing electricity supply will be reconfigured with the existing overhead reticulation replaced with underground reticulation. There will be a new site main switch board which will be the single point of supply for all buildings within the site.

There will be a new Telstra connection for a general purpose phone, internet and eftpos services. WIFI for the site has not been included however there is provision in the infrastructure to accommodate a WIFI installation if required in the future. The majority of the internal building lighting has been documented as energy efficient LED and all LED luminaires specified will have a 5 year warranty. The carpark area and access road has been documented as a compliant LED lighting design.

CCTV, public address and emergency help intercom systems have been documented for the pool areas.

#### 8.2 Mechanical Engineering

Air-conditioning has been documented for the office/first aid room and the hydro pool. The air-conditioning system documented in the hydro pool will be of corrosion resistant construction.

Mechanical extraction has been documented for the Café, Shop, Toilet Amenities, Kitchen and Pool Equipment Room.

Fans have been documented in the Café and outdoor seating spaces.

#### 8.3 Hydraulic Engineering

Reticulated water will be reticulated throughout the site as required. Hot water will be heated by energy efficient heat pumps and it is proposed that 50% of the showers will have hot water which will be tempered.

There is no requirement for firefighting water storage for the site.

Sanitary drainage will be provided via a new 150mm gravity sewer connection to the existing council sewer system.

A 2000L grease interceptor has been documented for the kitchen food preparation area.

Conventional gutters and downpipes will connect to the site stormwater drainage.
Pool Hydraulic Design Development

The Pool Hydraulics Design Report details the design approach, reference standards and guidelines and presents summary data in relation to the design of the proposed hydrotherapy pool, 25 m pool and billabong pool. The report outlines the filtration turnover periods involved, sanitation methods described in the documentation and provides data relating to water volumes and backwash water requirements. A brief description of water circulation and pool skimming is included along with the extent of heating of pools and a statement regarding flow velocities adopted in the design of pipework. Mention is made of maintenance and cleaning requirements and the provision of operator training.

The design of the various pool hydraulics elements is based on the following guidelines and Australian standards.

- AS 3979-2006 Hydrotherapy Pools
- AS 1926.3-2010 Swimming pool safety - Water recirculation systems
- Queensland Health Swimming and Spa Pool Water Quality and Operational Guidelines

9.1 Water Quality Control and Electro Chlorination

Equipment design includes automatic monitoring of free chlorine content and pH of the water in each swimming pool.

The monitoring equipment provides a signal for the control of electro chlorination equipment to generate chlorine as the sanitising agent, and this process invariably leads to a slow increase in pH.

Hydrochloric acid is the documented means of reducing pH, again under automatic control of the monitoring equipment.

Site constraints rule out the provision of bulk deliveries of sodium hypochlorite sanitiser, and there are prescribed access, standing and bunding requirements for tanker deliveries. An alternative adopted on some facilities relies on the use of calcium hypochlorite which is supplied in briquette or granular form. Both forms of hypochlorite involve considerable transport distances with the associated cost implications.

Electro Chlorination as allowed in the pools is becoming an ever increasingly popular method as the sole source of sanitization in pool projects of this nature. Recent developments in the technology allow efficient chlorine production from salt concentrations as low as 1200 mg/L in the swimming pool water. This quality of water is barely perceptible as being other than freshwater.

Specific power consumption of the electro chlorinated is typically 10-12 kWH per kilogram of chlorine produced. Depending on energy tariffs and purchase arrangements for bolt sodium hypochlorite, the respective costs for electro chlorination and sodium hypochlorite purchase are $15 and $45 per kilogram.

9.2 Heating

Only the hydrotherapy pool is heated with the design temperature being 30°C in accordance with the recommendations contained in AS 3979-2006 Hydrotherapy Pools. Heating is provided by a mechanical heat pump.

Further details of the pool hydraulics can be found in the full report in the appendix A of this document.
10 Cost Plan

A design development level cost plan has been generated on the basis of the consultant teams’ current documentation package which can be found in the appendix A of this report. It should be noted that this cost plan excludes consultant fees (at all stages of design and construction) and loose furniture costs.

The below costs do however include an allowance of $100,000 for expected fees for Ergon works to provide a new connection to the site. After the completion of this cost plan, Ergon responded providing approval of the application with $0 contribution cost required from the project. Therefore, the below budget estimate could be reduced by $100,000

Table 10-1 Summary of Staged Design Development Cost Plan

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost estimate ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 construction total (including contingencies)</td>
<td>$3,950,000</td>
</tr>
<tr>
<td>Stage 2 construction total (including contingencies)</td>
<td>$2,030,000</td>
</tr>
<tr>
<td>Direct costs (including Ergon Works &amp; QLeave)</td>
<td>$135,000</td>
</tr>
<tr>
<td>Total Construction costs</td>
<td>$6,115,000</td>
</tr>
</tbody>
</table>

A detailed breakdown of the costs can be found in the appendices of this document.
01

EVIDENCE BASED ASSESSMENT: DESIGN URBAN
Mission Beach Aquatic Facility

02

MANAGEMENT AND OPERATIONAL PLAN: OUTSOURCE MANAGEMENT
Mission Beach Aquatic Facility

04

TRAFFIC IMPACT ASSESSMENT: CARDNO
Mission Beach Aquatic Facility

CIVIL AND STRUCTURAL ENGINEERING REPORT: CARDNO