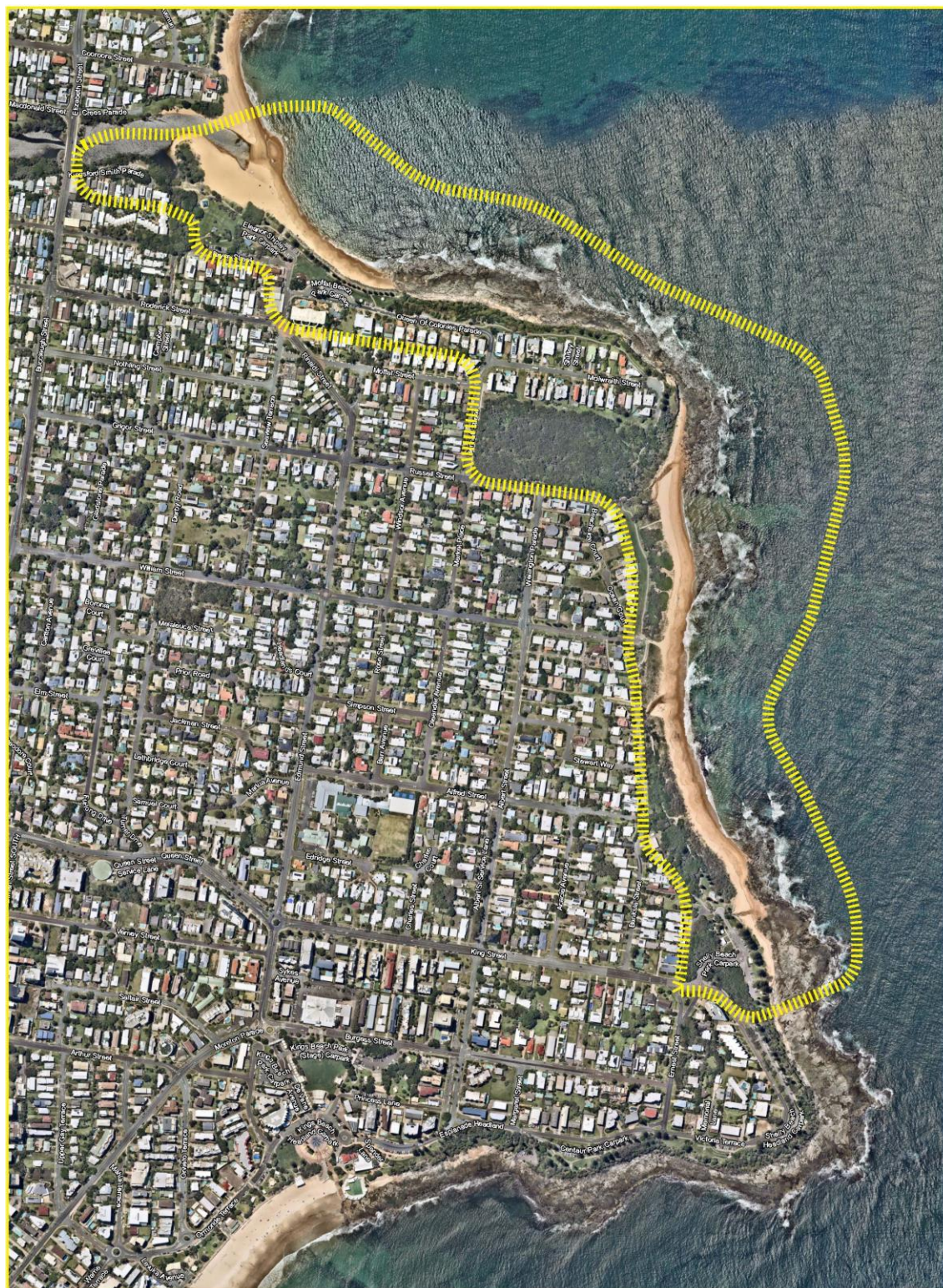


Shelly to Moffat Beach Coastal Study

Final Report and Action Plan



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Part 1 - Project overview and approach

1.1 Project overview

At the beginning of 2021 Council commenced a detailed study of the coastal strip from the southern end of Shelly Beach northward to Tooway Lake. This is a 2km section of coastline enjoyed as a series of individual destinations – Tooway Lake, Moffat Beach, Moffat Headland, George Watson Park, North Shelly Beach, and South Shelly Beach - and as a series of connected experiences linked by The Coastal Path.

The study considered the public lands within this area, including the:

- Recreation open space (parks) including coastal path
- Dune and conservation areas
- Beach

The broader area, and specifically Shelly Beach, has been a focus of discussion and community tension for several years. Specifically focused on:

- Light impact on turtles
- Views (from private residences)
- Vegetation management and species choice
- Cottonwood trees on the dune
- Culminating in Dec 2020 – Placement of shade cloth at William Street car park to screen headlights for turtle nesting

Previous approaches to address the management of the area had largely focused on individual concerns and outcomes when the issues and opportunities that exist are influential across an integrated landscape system.

The high ecological, amenity and landscape values of the area, coupled with increasing recreation demands, means the area requires careful consideration to ensure a sustainable balance can be struck between its significant natural values, increasing community use and diverse community expectations and desires.

1.2 The project brief

The Shelly to Moffat Beach Coastal Study sought to:

1. Better understand community perspectives on what is valued about this section of coastline
2. Better understand a diverse range of community views relating to the management of the area's flora and fauna

3. Better understand the challenges and opportunities associated with the area's management –to include the context of up-to-date professional advice
4. *Map a way forward to guide the future evolution and management of this part of the coastal landscape, including the Coastal Path, to ensure the best outcomes for residents, nesting turtles and coastal biodiversity to support a long-term sustainable future.*

1.3 The study findings

The findings of this study have been presented as a series of spatially applied actions (refer to Part 7 – Action Plan) to help inform and coordinate future council management. This spatial presentation also helps to establish a clear and consistent resource for reference by all who enjoy, and generously contribute to, the area's ongoing preservation.

The documented actions are aligned to support the defined community, recreational and ecological values, as determined through the project engagement process (See Part 7 – Action Plan for a full summary of proposed actions).

1.4 This document

This document has been prepared to provide a concise summary of:

- The project objectives
- The process/method adopted to undertake the study
- The key findings following community engagement activities and inputs from relevant key technical experts – including representatives from Federal, State and Local Government agencies
- The outcomes and associated actions to support the future management and enhancement of the area in line with community and ecological (flora and fauna) values.

The report is intended to provide a concise summary of the project and provide clear guidance on operational management of the public open space over the next 10+ years, with short term and medium to long term actions identified across the study area and separated into spatial zones. The report has been compiled to present key information specific to project considerations and clearly communicate the outcomes/actions arising from the study. Additionally, the report is intended to better inform interested stakeholders and the wider community of the key project stages, inputs, outcomes and specific actions taken / to be taken.

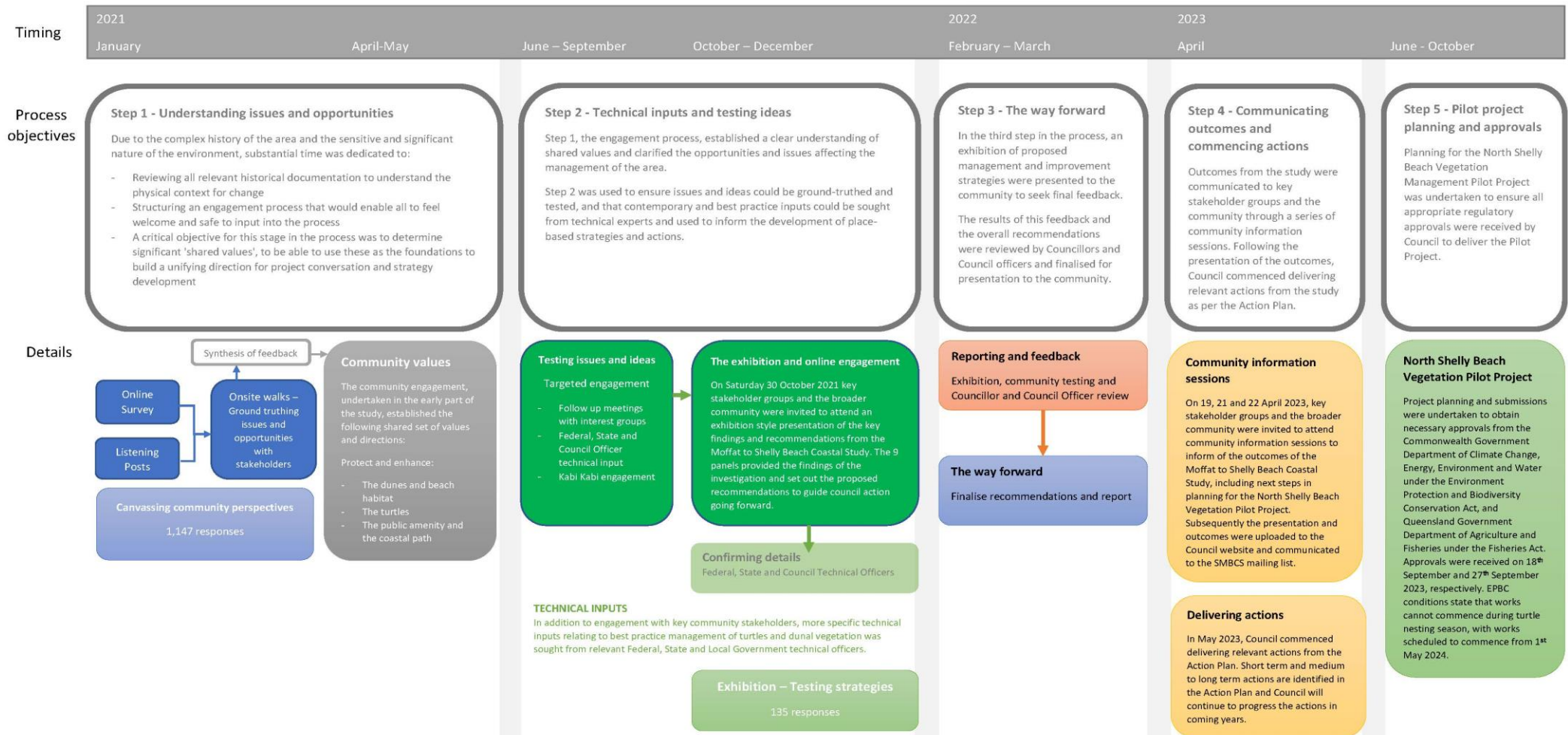
The document is structured in seven parts:

<i>Part</i>	<i>Title</i>	<i>Outline of content</i>
1	Project overview and approach	(This section) Provides a concise overview of the project, its objectives, and the approach adopted to undertake the work.
2	Finding common ground – Community values	Provides a summary of the key insights received following community engagement held between January 2021 – June 2021. It establishes an understanding of a set of key shared community values and ambition for the future qualities of the area.
3	The community exhibition	Includes a copy of the complete set of exhibition panels from the final engagement stage, undertaken 31 October 2021 – 29 November 2021. In order to deliver outcomes aligned to the shared values, these panels present a series of spatially applied directions and actions to guide council and community activity in the study area.
4	Unresolved issues and additional advice	Contains a concise summary of key advice provided by Federal and State agencies, and council staff in response to project considerations and questions relating to Shelly Beach dunes, vegetation, and marine turtles.
5	Project outcomes - The way forward	Following completion of this stage of work, provided is a concise statement of direction and summary of next steps.
6	North Shelly Beach Pilot Vegetation Management Project	Provides an overview of the project, legislative approvals processes and next steps for delivery of the project to support turtle nesting outcomes at North Shelly Beach.
7	Action plan	The action plan documents all relevant actions for each section of coastline, guiding council and community activity in the study area and delivering outcomes aligned to the shared values.

1.5 Project approach

Figure 1 illustrates the study timeline and process adopted and provides an explanation of the role and purpose of each stage of the process.

Figure 1: Study timeline, objectives and process



1.6 Policy and technical references

Considerations of the study have been informed by extensive community engagement, policy setting, a comprehensive review of formal technical references, background investigation and community commissioned reports. Table 1 outlines the policy setting and technical references used to inform the study.

Table 1: Policy setting and technical references

<i>Policy setting and technical references</i>			<i>Key technical background</i>	<i>Community commissioned studies</i>
Federal Government	State Government	Local Council		
Environment Protection and Biodiversity Conservation (EPBC) Act 1999	Nature Conservation Act 1992 - Dept of Environment and Science	Environment and Liveability Strategy 2017	[George] Watson Park Management Plan 1994	Assessment of dune rehabilitation proposal 2019
Referral requirements – Matters of National Environmental Significance (MNES)	Lands Act 1994 – Dept of Resources	Environmental Reserves Network Management Plan 2017-2027	Caloundra Bar to Tooway Lake Coastal Management Plan 2000	Impact of Cottonwood on Turtle Nesting at Shelly Beach 2021
	Coastal Protection and Management Act 1995 - Dept of Environment and Science	LIM - Open Space Landscape Infrastructure Manual	Lake and Estuary Risk and Operational Management Protocols	Shelly Beach Dune Rehabilitation Plan 2019
	Fisheries Act 1994 - Department of Agriculture and Fisheries	Shoreline Erosion Management Plan	Benchmark artificial light at night study 2017	<u>Councillor initiated studies</u> 2016
		Coastal Management Policy (Public Lands)		Assessment of dune habitat and landscape amenity proposal
		Coastal Hazard Adaptation Strategy 2021		2016 Sky Glow
		Marine Turtle Conservation Plan 2023		2017 Assessment of vegetation management proposal

Part 2 - Finding common ground – Community values

2.1 Overview

Community engagement was undertaken from January to April 2021 and May to June 2021. A key focus of this engagement process was to listen to the community to better understand the shared community values and ambition for the area.

Engagement was undertaken through a mixture of:

- An online survey, receiving over 1000 responses
- Listening posts hosted over two weekends, and located at Victoria Terrace car park, William Street and Moffat Beach
- Site walks (eight) over three days with stakeholder groups, including a diverse range of residents' interests and conservation groups.

2.2 Informing project direction

Key insights from early engagement exercises were used to help inform and advance the project, to ensure the work progressed in response to a clear understanding of place values and community needs. Table 2 summarises the initial key insights, drawn from the early engagement stage.

Table 2: Community engagement insights

<i>Early insights from community engagement</i>		<i>Influence on project process and actions</i>
Community values	<ul style="list-style-type: none">- Strong interest / passion for the area shared by local residents.- Many diverse and interested stakeholders in the project.- Some interested community members not yet represented as stakeholders in the process.- Strong desire to preserve what is special about the area – to ensure future generations can enjoy the same experiences.	<ul style="list-style-type: none">- The significance of issues being explored in the project warranted a measured approach - with time taken to pause, step back and ensure all members of the community were comfortable being part of the process.- Time was needed to rebuild trust between community and council, and within the community.- The opportunity to determine a set of shared community priorities/ values was important to unite stakeholders and explore priority actions.

Landscape and wildlife values	<ul style="list-style-type: none"> - Strong recognition of the complexity and high value of the environment – flora and fauna. - Recognition the area is under significant pressure 	<ul style="list-style-type: none"> - Understand, and work with, the complexity of both the natural and human systems. - Take an integrated and whole of landscape approach to deliver holistic approaches that balance the needs of people, flora and fauna.
Management	<ul style="list-style-type: none"> - Many groups across council and the community participate in managing and contributing to the upkeep of the area. - There are many perspectives on what is best for the area in terms of its upkeep. - The actions and activities of the groups involved in the area are not currently well coordinated. - They have shared objectives, but approaches are not aligned. 	<ul style="list-style-type: none"> - Take an evidence-based approach to determine recommendations. - Seek appropriate technical and scientific inputs. - Define a clear set of objectives supported by a plan of action that can be shared by diverse stakeholder groups to align action and investment.

2.3 An expanded program of engagement

As a result of the high levels of interest from the community the original project process and program was expanded to accommodate additional engagement exercises. This ensured everyone who wished to participate was confident and felt supported to do so.

Through May and June 2021 additional meetings were hosted with individual stakeholder groups to share the initial findings from the engagement process and test the emerging community values and priorities for the project.

2.4 Key insights from the engagement process

The engagement process:

1. Confirmed a set of unifying community **‘Priority place values’**
2. Identified a set of **‘Desired outcomes’** for the area
3. Highlighted several key issues requiring consideration and **‘Focus for action’**.

Priority place values and desired outcomes

A unifying statement of ambition was defined to communicate clearly and simply an understanding of both, the collective community, and council ambition for the area. This statement established an important focus to help align decision making and guide actions across council and community stakeholder groups. Under each value, clear statements of ambition or 'desired outcomes' were summarised (Table 3), reflecting the insights received through the engagement process.

Table 3: Priority place values and desired outcomes

Priority place values	Protect and enhance:		
	The turtles	The dune and beach habitat	Public amenity and the coastal path
Desired outcomes	<ol style="list-style-type: none"> 1. Increased area for natural turtle nesting 2. Reduction in the requirement to relocate turtle nests 3. Increase the options / area available for turtle nest relocation receiving sites 4. Reduction in light spill. 	<ol style="list-style-type: none"> 1. Enhanced ecological diversity. 	<ol style="list-style-type: none"> 1. Enhanced recreation and visitor experiences 2. Increased public vantage points for appreciation of local amenity 3. Fit for purpose services and infrastructure 4. Increased area of public recreation open space 5. Reduction in conflict on coastal path.
	<p>Across all priorities:</p> <ol style="list-style-type: none"> 1. Enhanced recognition and celebration of history, cultural heritage and environment. 2. Enhanced awareness and education about the area's distinctive natural and cultural values. 		

Focus for action

Several key issues emerged through the course of the engagement process. Issues requiring additional levels of consideration, clarification, and direction as below (Table 4). These issues became the focus of further detailed investigation and informed additional consultation activities undertaken between June and September 2021 and early 2022. This allowed key

technical experts to understand influences, opportunities, and potential parameters for actions.

Table 4: Key issues and focus for action

Item	Summary list of key issues		Focus for action
1.	The dune and beach (William Street to Russell Street)	Evidence suggests a highly modified landscape, with significant contemporary ecological and amenity value, and diverse/ conflicting stakeholder opinion regarding appropriate vegetation mix and management.	1. Establish landscape management strategies to support the evolution of a resilient and appropriate dune landscape and ecology.
2	Turtles and light spill	Community concern regarding light spill onto the beach and the impact on nesting turtle behaviour.	1. Mitigate the negative impact of light spill and improve community understanding of turtle needs.
3	William Street car park	Community concern regarding light spill on the beach from parked cars and the impact on nesting turtle behaviour.	2. Address the role and integration of parking provision at William Street to support the community and the local fauna.
4	Illegal action impacting vegetation	Community concern regarding: <ul style="list-style-type: none"> - Illegal vegetation management - clearing, pruning, poisoning, planting - Undesirable activity/ use of the beach negatively impacting the health of vegetation. 	3. Address illegal vegetation management (how?) and establish and enforce a consistent and clear council position.
5	Beach access	Community conflict over beach access and impact on dune ecology and vegetation health.	4. Ensure appropriate beach access is provided that facilitates community use and protects sensitive ecologies.

6	The Coastal Path	Increased traffic and diversity of use of the pathway has led to conflict.	5. Address behaviours and path conditions to support safe use by all.
7	Education and awareness	Concern new residents and visitors lack understanding of natural systems and sensitive habitats in the area.	6. Opportunity to improve awareness and change behaviour to support improved ecological value and cultural knowledge.
8	Coordination	Uncoordinated management activity (Council and community) by diverse groups resulting in unintended outcomes, despite best intentions.	<p>7. Create a resource/s to communicate a consistent and clear set of objectives and desired outcomes to guide all inputs, enhancements, and management activity in the area.</p> <p>8. Improve awareness and coordination of management activities across stakeholders to improve ecological and amenity outcomes aligned to a set of shared objectives.</p>

Part 3 - A Plan for actions

3.1 Overview

Phase 1 of the project process established a clear understanding of shared community values and place priorities and helped clarify key opportunities and issues affecting the amenity, enjoyment, and ecological values of the area.

3.2 Phase 2 and 3 - Technical inputs and testing directions – The Exhibition

Phases two and three of the project process brought together the directions set by the Priority Place Values, Desired Outcomes and Focus for Action. This was informed by relevant technical advice and inputs, to establish a series of spatially applied directions and actions to guide council and community activity in the study area.

On Saturday 30 October 2021 key stakeholder groups and the broader community were invited to attend an exhibition style presentation of these key directions. The focus of the exhibition was nine panels (See appendix A).

The panels and a word document, containing the actions listed on the panels, were made available online following the exhibition. This allowed for further community feedback between 31 October 21 – 29 November 2021.

Council received 135 online submissions and the exhibition was attended by almost 100 people.

3.3 Community feedback - In summary

Feedback from the community was well considered, with significant advice and information provided in response to the proposed directions documented in the panels.

From the online and in-person submissions received there was generally significant community support for the proposed directions and actions.

Appendix B provides a high-level summary of the spatial strategies and actions presented in the exhibition panels, timeframes for delivery and an indication of community sentiments and status for each action.

3.4 Unresolved issues

The highest level of continued community sensitivity was focused on issues relating to Shelly Beach dunes, vegetation, and marine turtles. Specifically:

1. The appropriate land use of the North Shelly Beach area – **Land designations**
2. The treatment of the William Street car park – **Turtles**
3. The appropriate species mix on the dune - **Turtles and native ecologies**
4. The approach to be adopted to any vegetation removal on the dune - **Turtles and native ecologies**
5. The location and species choice for revegetation activity on the dune - **Turtles and native ecologies**

Part 4 - Unresolved issues and additional advice

4.1 Introduction

From the online and in-person submissions received, in response to the exhibition, there was significant community support for the proposed directions and actions presented.

In relation to the unresolved issues identified in Part 3.4 for Shelly Beach, additional technical inputs were sought from the relevant and recognised authorities at Federal, State and Local Government levels. Council professionals provided input on current knowledge and contemporary best practice management for these issues to ensure:

- Issues and ideas could be ground-truthed and tested
- Contemporary and best practice inputs from technical experts informed the advancement of place-based directions.

4.2 Technical directions

The directions provided from the technical inputs confirmed the following:

<i>Issue</i>	<i>Project implications</i>
Land designation	<ul style="list-style-type: none">• Council is using the land for purposes consistent with land designation and relevant Council and State approvals.• Council is required to maintain and enhance the area.• There is room for improvement on the clarity, coordination and approach to landscape enhancement and management.
Dune conditions and vegetation considerations – Dunes	<ul style="list-style-type: none">• Sensitive landscape subject to dynamic influences (coastal erosion)• Has important coastal protection role and habitat role, supporting marine turtle nesting• Valued community amenity• Supports valued vegetation communities
Dune conditions and vegetation considerations – Vegetation	<ul style="list-style-type: none">• Appropriate vegetation Regional Ecosystem (RE) advised as RE12.2.14• Cottonwood tree is an appropriate species within RE12.2.14 however not in its current growth characteristics• Management is supported to improve the overall biodiversity of the dune, in line with what would be expected of this type of Regional Ecosystem
Turtles (at Shelly Beach)	<ul style="list-style-type: none">• Referral under the EPBC Act advised where disturbance to endangered species habitat expected (Matters of National Environmental Significance (MNES))
Overall	<ul style="list-style-type: none">• The adoption of an integrated collaborative process that draws together the appropriate technical expertise – turtles, dunes and vegetation – is essential to informing any proposed physical changes at Shelly Beach.

4.3 The advice in more detail

The following provides a concise summary of key pieces of technical advice and inputs sought in response to questions relating to:

- A. Land designation
- B. Dune conditions and vegetation considerations
- C. Considerations for Marine Turtles (at Shelly Beach)

In each discussion the project process was outlined and the exhibition panels shared to confirm context for the meeting and the questions posed.

A. Land designation

Overview

There has been long standing tension and difference of opinion with regards to what the land between William Street and Russell Street is to be used for and its appropriate maintenance in support of that use.

The recognised authorities on this issue are:

- Council from a Development Assessment perspective
- Department of Environment and Science (Coast Protection)
- Department of Resources (land and surveying)

To address the above questions confirmation was sought directly from senior officers at The Department of Environment and Science (Coast Protection) and Department of Resources (Land and surveying) with meetings held in early 2022.

Advice

The meetings were requested by Council's project team to establish a current and comprehensive understanding of three key questions emerging from the engagement process. Table 5 provides a summary of the questions asked, their significance within the context of the project and the advice provided.

Table 5: Study questions and summary of advice – land designation

Question	Project significance	Summary of advice
1. What is the relevant land designation covering the reserve at Shelly Beach?	To ensure current and future land uses are in keeping with and have a full understanding of the intended role and function of the relevant land designations.	As per the face of plan SP100298, Lot 9 was to be designated as Public Use Land (PUL) land for Park purposes. At the time of designation, it was common practice for the department to issue Park Reserves as "Park and Garden"

		<p>in accordance with Schedule 1 of the Land Act 1994.</p> <p>There is no definition of “Park and garden” under the Land Act, therefore, the common meaning as per the Macquarie Dictionary apply:</p> <p>Park - 1. an area of land within a town, set aside for public use, often landscaped with trees and gardens and with recreational & other facilities., 2. a tract of land set apart, as by a city or a nation to be preserved in its natural state for the benefit of the public. Garden – 1. a plot of ground devoted to the cultivation of useful or ornamental plants. etc.,</p>
2. What are State expectations with regards to Council’s ongoing management responsibilities of the land?	Confirm with the designating authority the long-term expectations on Council for the areas management.	The department would expect that the trustee would manage and enhance the reserve in accordance with the purpose of the reserve. As coastal dunes are included in the geography of Lot 9, extra coastal management practices would be expected to be included in such management.
3. What is the relevant documentation that should be referenced relating to the lands ongoing use and management?	Confirm a full understanding of any permissions needed to undertake adaptation to the area in response to future community needs, ensuring information is up to date.	<p>The relevant documentation that should be referenced relating to the lands ongoing use and management is Schedule 1 of the Land Act 1994.</p> <p>Note - Definitions There is no definition of “Park and garden” under the Land Act, therefore, the common meaning as per the Macquarie Dictionary apply:</p>

		<p><i>Park</i> - 1. an area of land within a town, set aside for public use, often landscaped with trees and gardens and with recreational & other facilities., 2. a tract of land set apart, as by a city or a nation to be preserved in its natural state for the benefit of the public.</p> <p><i>Garden</i> – 1. a plot of ground devoted to the cultivation of useful or ornamental plants. etc.</p>
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B. Dune conditions and vegetation considerations

Overview

There has been long standing tension and difference of opinion regarding the:

- Appropriate vegetation type on the dune
- Appropriate approach to revegetation work and vegetation management:
 - Area 1. William Street to Russell Street
 - Area 2. William Street south to the drain

The recognised authorities on these issues are:

- Vegetation – Queensland Herbarium, Department of Environmental and Science
- Dunes – Department of Environment and Science

To address the above questions confirmation was sought directly from senior officers at The Queensland Herbarium and The Department of Environment and Science with meetings held in early 2022.

Advice – Vegetation

The meeting with the Herbarium was requested by Council's project team to establish a current and comprehensive understanding of three key questions. Table 6 provides a summary of the questions asked, their significance within the context of the project and the advice provided.

Table 6: Study questions and summary of advice – vegetation

Question	Project significance	Summary of advice
1. What is the appropriate species mix on the dune?	To ensure any proposed changes to vegetation on the dune are informed:	1. <i>Cottonwood Tree is a native species to Australia and the Sunshine Coast</i>

	<ul style="list-style-type: none"> - Using the appropriate species mix for the region - Support the habitat requirements of nesting turtles - Ensure the continued coastal protection role of the dune. <p>Key questions</p> <ol style="list-style-type: none"> 1. Are Cottonwood trees native to Australia and the Sunshine Coast? 2. Are Cottonwood trees naturally occurring in RE12.2.14? 3. Have Cottonwood trees been planted at north Shelly Beach? 	<ol style="list-style-type: none"> 2. <i>The appropriate Regional Ecosystem (RE) reference for suitable species for the dune is RE12.2.14. Cottonwood Tree is included in RE12.2.14</i> 3. <i>Based on the evidence available it is likely that Cottonwood Trees have been planted at Shelly Beach to support dune stabilisation (Council and State supplies).</i>
2. What specific advice is available concerning the status of Cottonwood Trees within the Shelly Beach dune system.	<p>Confirm:</p> <ul style="list-style-type: none"> - Whether Cottonwoods are an appropriate species at this location on the Sunshine Coast. - The 'normal' characteristics (location and shape) of Cottonwood within a dune system? 	<ul style="list-style-type: none"> • <i>The current characteristics of Cottonwood Trees on the dune at Shelly Beach are considered to be 'highly unusual'.</i> • <i>Management to improve the overall biodiversity of the dune, in line with what would be expected of the appropriate Regional Ecosystem supported.</i>
3. What are the recommended practices to ensure any changes to habitat do not adversely impact established turtle nesting locations?	<p>With proposed changes to dune habitat, inputs required to confirm any revegetation best practice recommendations in sensitive receiving habitats – with particular concern for:</p> <ul style="list-style-type: none"> - Nesting turtles - The unique characteristics of the sand at Shelly Beach. 	<ul style="list-style-type: none"> • <i>Advice not to use chemicals to undertake significant vegetation management due to the sensitivity of the receiving habitat and the porosity of the sand.</i>

Table 7: Regional Ecosystem description

RE 12.2.14 Explained		
Bio region	12	SEQ
Land zone	2	Coastal sands dunes and swales
Vegetation Community (Dominant canopy species)	14	Strand and fore dune complex comprising Spinifex sericeus grassland Casuarina equisetifolia subsp. incana low woodland/ open forest and with Acacia leiocalyx, A. disparrima subsp. disparrima, Banksia integrifolia subsp. integrifolia, Pandanus tectorius, Corymbia tessellaris, Cupaniopsis anacardioides, Acronychia imperforata and Hibiscus tiliaceus. Occurs mostly on frontal dunes and beaches but can occur on exposed parts of dunes further inland. Not a Wetland.

Advice – Dunes

The meeting with The Department of Environment and Science was requested by Council's project team to establish a current and comprehensive understanding of two key questions. Table 8 and supporting imagery (Figures 2 - 12) provides a summary of the questions asked, their significance within the context of the project and the advice provided.

Table 8: Study questions and summary of advice – dunes

Question	Project significance	Summary of advice
1. What are the natural and man-made influences that shape the dune/ beach environment at Shelly Beach?	To understand the natural and man-made influences that shape the dune/ beach environment to ensure any future improvements/ interventions are appropriate and sustainable.	<p><i>North Shelly Beach is a modified landscape, the area appearing to have been impacted by human activity and by persistent sea erosion events and wind erosion.</i></p> <p><i>Historic and documented changes have included:</i></p> <ol style="list-style-type: none"> I. <i>Vegetation clearance for urban development</i> II. <i>Siting of a caravan park</i> III. <i>Shell Grit mining activity</i> IV. <i>Dune re-establishment and tree planting activity</i> <p><i>In its current condition and use it:</i></p> <ol style="list-style-type: none"> I. <i>Is an important nesting habitat for endangered turtles</i> II. <i>Supports vegetation</i> III. <i>Performs a coastal protection role</i> IV. <i>Is a valued community amenity</i>

		<p><i>See below for images supplied by Department of Environment and Science, Queensland Government (except 1940 image of Caloundra to Moffat).</i></p>
<p>2. What conditions are required to ensure the dune continues to perform its coastal protection role?</p>	<p>Any initiatives to improve/change the dune conditions need to be considered carefully.</p> <p>Considering the urban development that has occurred in the area, the significance and frequency of weather events and the impacts of climate change on sea levels, the contemporary dune performs an important coastal protection role and is a valued habitat for nesting turtles.</p>	<p>The dune is the first line of defence against coastal erosion for the public and private assets behind them.</p> <p>Noted that the Cottonwood trees at North Shelly Beach occupy a location at imminent threat of erosion with an expectation that vegetation would be lost.</p> <p>Vegetation has an important role in dune building through the trapping of sand, but vegetation has virtually no effect on preventing sea erosion on most coasts.</p> <p>Once erosion starts, a scarp wall will form, the beach level drops and whatever is on the surface of the dunes gets undermined, drops into the water and washes away.</p> <p>It is accepted that dune vegetation is lost over time and eventually replaced back to a primary successional stage.</p>

Figure 2: 1940, Aerial – Caloundra to Moffat

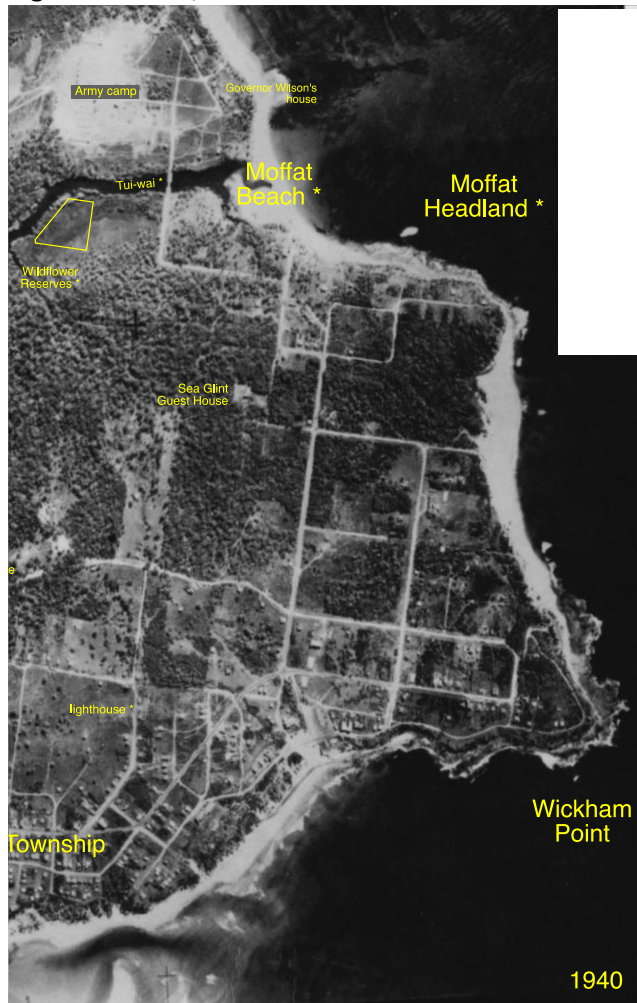


Figure 3: 2021 Cadastre – Shelly Beach



Figure 4: 1961 25 September, Aerial – North Shelly Beach

Sparse tree cover on the dunes and a well-developed ground cover behind the foredune but a sparsely vegetated foredune.



Figure 5: 30 October 1962

Sand/ Shell grit quarrying operation in progress on the foredune and vegetation cover increased, probably due to favourable seasonal conditions, and at the same time a new dune has built up seaward.



Figure 6: 1974 January, Aerial – North Shelly Beach

A dune has been artificially reconstructed



Figure 7: Imagery from the then Beach Protection Authority indicated dune severe sea erosion between 1972 to 1974 and damage to the January 1974 reconstructed dune above.



Figure 8: 1976 22 January, Aerial – North Shelly Beach

Beach Protection Authority imagery suggests the foredune was reconstructed again prior to January 1976 and revegetated.



/10A CYCLONE DAVID 22/1/76

Figure 9: 18 September 1979

Foredune at Shelly Beach looks devoid of tree cover except for a few horsetail she-oak at the southern end which predated the works.



Figure 10: 1981 7 November

Aerial imagery confirms the dune is dominated by ground cover plant species with a single line of trees, most likely planted, at the rear of the dune becoming obvious.



Figure 11: 1994 25 May

Trees have appeared seaward of the original line of trees at the rear. The uniform size, spacing and arrangement in lines suggests artificial planting. These may be the Cotton Trees. Clearing of trees in the northern part appears to have occurred. Additional trees appear to have been planted on the western edge



Figure 12: 2004 11 June

The new line of trees appear to be rapidly expanding, but mainly westward (probably due to exposure). It is therefore assumed that these are the current cotton trees. Ground truthing needed.



Figure 13: Circa 2011

Land elevations.

Suggest the 1976 artificially created dune is still intact.



C. Considerations for Marine Turtles (at Shelly Beach)

Overview

There has been long standing tension and differences regarding the conditions required to support nesting turtle populations at Shelly Beach. Specifically:

- Space for nests
- Light impacts
- Vegetation limitations

The recognised authorities on this issue are Federal and State Government:

- Migratory Species Section, Biodiversity Conservation Division, (formerly) Department of Agriculture, Water and the Environment
- Chief Scientific Officer, Department of Environment and Science

To address the above questions, confirmation was sought directly from senior officers in Migratory Species Section, Biodiversity Conservation Division, (formerly) Department of Agriculture, Water and the Environment and the Chief Scientific Officer, Department of Environment and Science, with meetings held in early 2022.

Advice

The meeting with The Department was requested by Council's project team to establish a current and comprehensive understanding of four key questions. Table 9 and supporting imagery provides a summary of the questions asked, their significance within the context of the project and the advice provided.

Table 9: Study questions and summary of advice – marine turtles (at Shelly Beach)

<i>Question</i>	<i>Project significance</i>	<i>Summary of advice</i>
1. What is the significance of Shelly Beach to the marine turtle population?	To understand any priority issues for consideration in strategies seeking to balance the competing needs of flora, fauna, and human activity.	<p>Globally all marine turtles are recognised as species of conservation concern. All six species of marine turtles on the Sunshine Coast are protected under a range of international, national, state, and local mechanisms.</p> <p>In response to increasing temperatures in higher latitudes, turtles are predicted to undertake a southward shift in nesting distribution over future decades and the Sunshine Coast is likely to provide increasingly important alternative nesting sites.</p>

		<p>Whilst all Sunshine Coast beaches have the potential for turtle nests, there are physical conditions which favour some nesting beaches. Specifically short crescent shape beaches defined by rocky headlands.</p> <p>On the Sunshine Coast Buddina and Shelly beaches typically record more nests than any other beaches.</p> <p>Shelly beach is identified by State Government as the index beach for the entire Sunshine Coast rookery (first studied in the 1970's).</p>
2. What is contemporary best practice with regards to the physical conditions required to support marine turtles?	Explore the opportunity to deliver a 'best practice' approach to support nesting turtles within the region. Ensure the habitat needs of nesting turtles can be factored into any vegetation management or adaptation both in terms of species choice and removal practices.	<p>An elevated frontal dune is important nesting habitat for turtles. Optimum conditions characterised by low grassy vegetation with shallow root system.</p> <p>An elevated dark horizon is needed behind the nesting habitat (typically provided by dune vegetation or rocky headlands) to assist in sea finding.</p> <p>Light affects the turtles if it can be seen from the nesting beach, nearshore and adjacent waters.</p>
3. What are the policy and legal frameworks in place that guide / regulate actions associated with marine turtle habitat?	To understand council's obligations and any legal/ procedural requirements when undertaking actions in or adjacent to turtle habitat.	<p>The loggerhead at Shelly Beach is listed under the following:</p> <ul style="list-style-type: none"> I. Nature Conservation Act 1992: <i>Endangered</i> II. Environment Protection & Biodiversity Conservation Act 1999: <i>Endangered</i> III. IUCN Red List: <i>Critically endangered</i>. <ul style="list-style-type: none"> - Globally all marine turtles are recognised as species

		<p>of conservation concern. All six species of marine turtles on the Sunshine Coast are protected under international, national, state, and local mechanisms.</p> <p>The most significant Australian policy is the Environmental Protection and Biodiversity Conservation Act 1999.</p> <p>Advice given that proposed activities likely to require referral under this Act (Matters of National Environmental Significance (MNES)).</p>
<p>4. What are the recommended practices to ensure any changes to habitat do not adversely impact established turtle nesting locations?</p>	<p>To understand appropriate risk mitigation requirements to limit the impact of physical change on nesting turtle habitat and behaviour.</p>	<p>Equal or improved levels of dune height and opacity to manage relevant light sources.</p> <p>Appropriate nesting habitat available (available space and conditions) – vegetation and sand.</p> <p>Any proposed activities to rehabilitate the nesting habitat should be conducted outside of critical nesting period and project not piloted on core habitat areas.</p>

Part 5 – Project outcomes – The way forward

5.1 Project outcomes

Community feedback, and subsequent project recommendations to advance directions established in the exhibition panels, were presented to Council and secured ‘in principle’ support.

The outcomes of this study and next steps were presented to key community stakeholder groups and broader community during sessions held on 19, 21 and 22 April 2023. The outcomes and actions were presented as a series of spatially applied actions to help inform coordinated future council, and community stakeholder activities, in the study area.

The documented actions are aligned to support the delivery and advancement of the defined community and ecological values, as determined through the project engagement process.

The spatial strategies and actions presented in the exhibition panels received significant community support throughout the engagement process.

5.2 Next steps

The actions and initiatives documented in the exhibition panels, the community feedback and subsequent presentation of the outcomes to the community, provide the foundations for future Council actions.

They set direction for:

- The general program of landscape and conservation works including ongoing maintenance and management practices
- The advancement and further planning of several key initiatives including:
 - i. The North Shelly Beach Pilot Vegetation Management proposal (see Part 6)
 - ii. Proposed William Street carpark improvements (in line with the community preferred option 3 from the exhibition)
 - iii. The coordination and planning of landscape improvement and public safety works at Moffat Beach and Moffat Headland
- The coordination of flora and fauna management activities across key established community stakeholder groups.

5.3 Ongoing engagement and approach

Council will seek to continue to work with, and consult, the community to advance the project recommendations.

In addition, the sensitivity and vulnerabilities of the landscape and ecologies in the study area require the adoption of an integrated and collaborative approach that draws together the

appropriate technical expertise – turtles, dunes and vegetation – to inform any proposed physical change at Shelly Beach.

5.4 Timing

The project recommendations are comprehensive and proposed across short (five years) and mid to long term (10+ years) timeframes aligned to established programs and funding access.

The initial priority action arising from the project was to progress the planning and delivery of the North Shelly Beach Pilot Vegetation Management Project. Part 6 provides an overview of this project and its status.

5.5 Communications

Council will continue to provide relevant updates on the implementation of actions from the study to the community and stakeholder groups via the SBMCS mailing list, council webpage and through relevant media releases and social media posts as required.

Where further consultation on specific actions is identified in this study (e.g. Moffat Headland public safety treatment, William St carpark relocation, coastal path upgrades, etc.), Council will undertake this consultation in line with its community engagement framework.

Part 6 – North Shelly Beach Vegetation Management Pilot Project

6.1 Overview

Following the community presentations and publication of the outcomes of the Shelly to Moffat Beach Coastal Study in April 2023, Council continued to progress the detailed planning and design for delivery of the North Shelly Beach Vegetation Management Pilot Project. The project proposes to undertake vegetation removal (cottonwood trees) and implement management within a small area of the foredune and adjacent parkland at North Shelly Beach, see Figure 14.

Key drivers for the design of the Pilot Project included:

- An elevated frontal dune is important nesting habitat for turtles. Optimum conditions are characterized by low grassy vegetation with a shallow root system.
- An elevated dark horizon behind the nesting habitat (typically provided by dunal vegetation or rocky headlands) is required to assist in turtle sea finding. The Pilot Project aims to achieve equal or improved levels of dune height and vegetation density behind the frontal dune.
- Direct light and sky glow affects turtles if it can be seen from the nesting beach, nearshore and adjacent waters. The pilot aims to achieve improved opacity to manage light sources.

6.2 The Pilot Project

The objective of the Pilot Project is to improve habitat quality for nesting loggerhead turtles and green turtles and increase diversity of the dunal ecosystem in line with regional ecosystem 12.2.14. The Pilot Project area is approximately 1,492 m², including a disturbance footprint (vegetation removal) of approximately 521 m².

The Pilot Project works include:

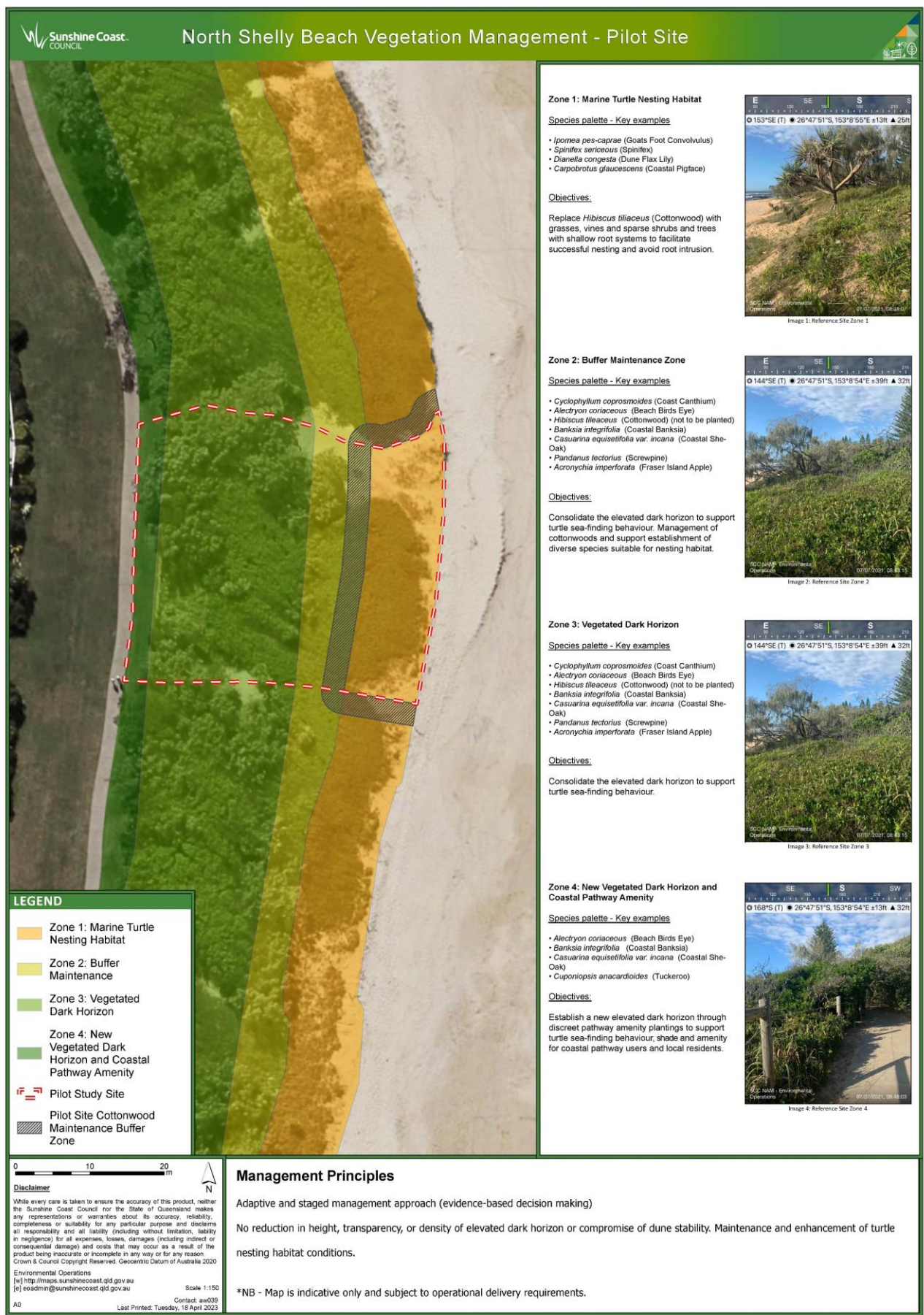
- Closure of the informal beach access between Beach Access 277 and 278 to support dunal restoration and turtle nesting outcomes.
- Removal of cottonwood trees in the frontal dune (Zone 1, Figure 14) and dunal profiling to create an elevated frontal dune.
- Dune vegetation rehabilitation activities to establish a functional foredune vegetation community informed by RE12.2.14, including spinifex on the frontal dune to support successful turtle nesting outcomes.
- Dune revegetation works in the hind dune areas to create a pseudo hind-dune vegetation community, informed by RE 12.2.14, and support dark horizon establishment where current gaps exist.
- Discreet landscape tree plantings along the coastal pathway behind the pilot site to support additional dark horizon establishment where current gaps exist and support coastal path amenity and shade.
- Fencing at the front of project area to support dunal rehabilitation and exclude access for turtles and the general public during the establishment period.

- Management of cottonwoods in the buffer zone (Zone 2, Figure 14) to restrict encroachment into the frontal dune area (Zone 1) and support establishment of greater species diversity in the Zone 2, while maintaining the dark horizon.

Dunal areas subject to disturbance through the removal of woody vegetation are expected to be unsuitable as nesting habitat for a period of approximately 18 months until the sand has resettled. Monitoring of sand density will be undertaken prior to, and throughout, the Pilot Project establishment period. The project area will be fenced for the duration of the establishment period and any turtle nests laid within the project area within the 18-month dune settlement period will be relocated to minimise the risk of poor nest outcomes.

The Pilot Project will include monitoring and assessment of how the environment responds to this action, with the aim to inform future stages of dunal modification for turtle nesting, expected to be delivered in a staged approach, over 5-10 years, across additional sections of north Shelly Beach (approximately 200m length). Future vegetation modification works to enhance turtle nesting habitat quality will be predicated on the success and learnings from the Pilot Project.

Figure 14: North Shelly Beach Vegetation Management – Pilot Site



6.3 Legislative approvals

To ensure the project met relevant Federal and State legislative requirements a referral was required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to ensure the project did not significantly impact on Matters of National Environmental Significance (marine turtles).

A Development Application was also required under the *Fisheries Act 1994*, due to removal, destruction or damage of marine plants (marine couch and cottonwood).

EPBC Act referral

The EPBC Act referral outcome was published on 21st September 2023 and was deemed *not controlled action if taken in a particular manner*. The *Particular Manners* describe the conditions for how and when the work can be undertaken, and are listed below (see Appendix C for more detail):

Clearing limits

- 1) To avoid impacts to **marine turtles**, the person taking the Action must not **clear** outside the **project area**.

Timing of the action

- 2) To avoid impacts to **marine turtles**, the person taking the Action must not undertake **works** (clearing/removal of vegetation) within the **nesting season** (1st October to 30th April).

Sourcing sand for dune renourishment/ reprofiling

- 3) To avoid impacts to **marine turtles**, in taking the Action, the person taking the Action must not source sand from the landward side of the **highest astronomical tide mark**.

Fisheries Act Development Application

The *Fisheries Act 1994* Development Application was approved on 27th September 2023, which allows Council to undertake the works to remove cottonwood and translocate marine couch in line with the pilot project methodology.

Following the *Fisheries Act 1994* Development Application approval, all necessary permits are now in place to deliver the pilot project.

However, the *Particular Manners* in the EPBC decision notice require that disturbance works to remove vegetation from the foredune area, and reprofile and restore the impacted area, cannot commence until after turtle nesting season (i.e. after 30th April 2024).

6.4 Next steps

Council will deliver the Pilot Project works commencing 1st May 2024, including informal beach access closure, cottonwood removal from the foredune, dunal reprofiling and restoration works for the Pilot Project area, following the 2023/24 turtle nesting season.

Following completion of the works, the site will be fenced to support restoration and exclude turtles from nesting for an 18-month establishment and settlement period. Monitoring and vegetation maintenance will be undertaken throughout the establishment period.

Monitoring and evaluation of the success of the Pilot Project following the establishment period will inform future dunal modification works at North Shelly Beach to support turtle nesting outcomes and enhance dunal ecology.

Council will continue to liaise with relevant Federal and State Government departments to ensure all statutory requirements are met for future works.

The community will continue to be provided updates as outcomes from the Pilot Project are known.

Part 7 – Action Plan

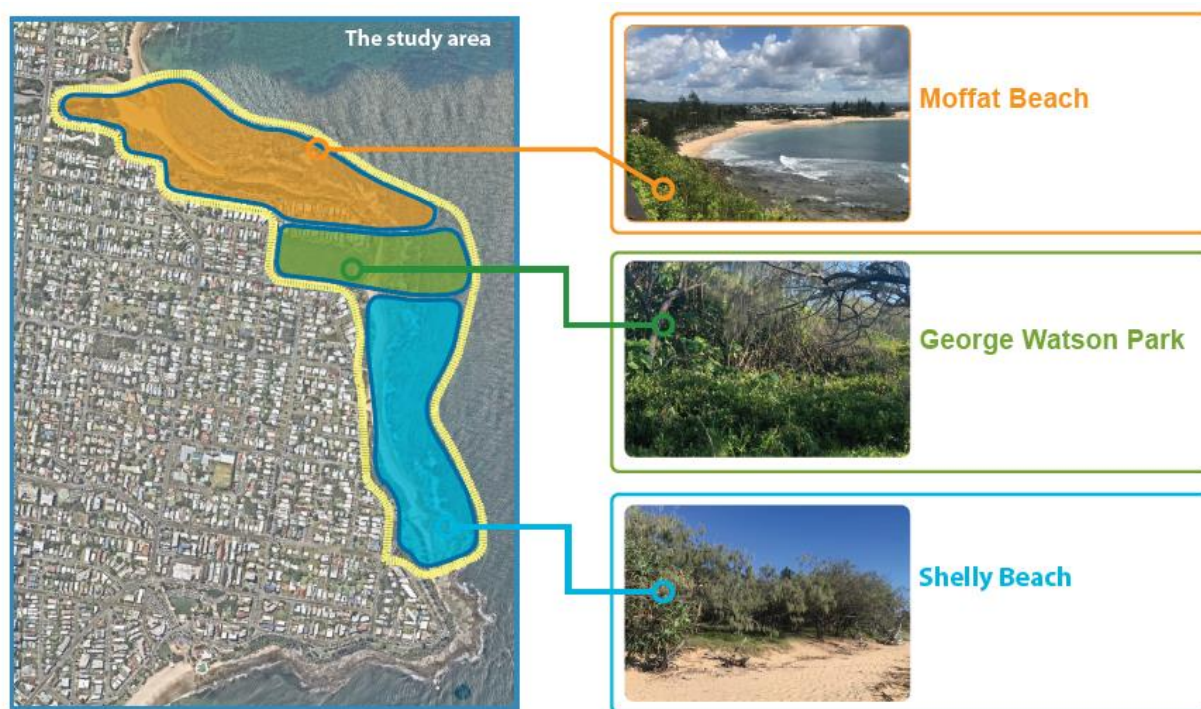
7.1 Overview

The Action Plan (Part 7.2) identifies the actions for the study area separated into Zones (see Figure 15). A series of spatial panels that align with the actions can be found in Appendix A. These panels and associated ‘key considerations’ were first presented to the community through the community exhibition and feedback period from October – November 2021, and subsequently the ‘Key Actions’ were updated to reflect the final outcomes of the Study. These outcomes were then presented to the community during the Community Information Sessions from 19 – 22 April 2023 and published online.

The Action Plan identifies the short-term (2021 – 2025) and mid to long term actions (2025-2030+) for Council to work toward implementation.

Appendix B provides a more detailed summary of the action plan, including the current status of each action and the summary of community sentiments arising from the engagement process.

Figure 15: Study Area overview with Zones



7.2 Shelly to Moffat Beach Coastal Study Action Plan

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Moffat Beach		
Zone 1A - Tooway Lake Bridge (South side only) to Tooway Lake Mouth		
Recognition of the values of Tooway Lake as an ICOLL (Intermittently closed and open lake and lagoon)	1. The Sunshine Coast Council Lake and Estuary Risk and Operational Management Protocols provide a guide for management. The Protocols recognise the importance and functioning of ICOLL's.	
		2. The Sunshine Coast Council Lake and Estuary Risk and Operational Management Protocols provide a guide for management. The Protocols recognise the importance and functioning of ICOLL's
Tooway Lake ICOLL not being managed properly, in particular the ability for Tooway Lake to form a Lagoon without being physically opened.	3. The Sunshine Coast Council Lake and Estuary Risk and Operational Management Protocols provide outline the Standard Operating Procedures for Tooway Lake	
		4. CHAS action 4.4.7 Undertake technical investigation to update ICOLL management strategy to inform
Historical and current access to the lakes edge challenging efforts to revegetate and stabilise the banks on southern side of Tooway Lake.	5. Continue to deliver Council and Bushcare activities to manage exotic weeds on the southern side of Tooway Lake.	
Weed management requires a greater level of coordination between environment, and Parks and Gardens.	6. Continue to deliver Council and Bushcare activities to manage exotic weeds on the southern side of Tooway Lake.	
	7. Increase the level of active coordinated management between Environmental Operations, Parks and Gardens and volunteer groups to reduce the spread of weeds.	
Concern about Tooway Lake and general area being loved to death – preference is to keep the area as natural as possible with no intensive use.	8. Value of Tooway Lake acknowledged, and the pressures associated with current and forecast future population growth are recognised.	
As the level of use of mouth of Tooway Lake / Moffat Beach increases, seasonal (holiday) SLSQ Patrols may need to be expanded in duration.	9. Liaise with SLSQ Sunshine Coast Branch to investigate current and potential future Patrol requirements to cater for increased levels of use.	
Beach (litter) clean-up tractor picking up rubbish, but also impacting on beach flora and fauna.	10. Clean up tractor from Parks & Gardens service area twice a week. Works undertaken with permit from DES and no evidence of impacts have been identified.	
General presentation of area under the Elizabeth Street Bridge over Tooway Lake including the eroded retaining wall and accumulation of litter under bridge.	11. Cleaning under bridge undertaken as required and generally associated with anti-social behaviour. Environmental Operations to increase waterway clean up frequency and monitor results.	

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Moffat Beach		
Zone 1B - Eleanor Shipley Park		
Management of interface between the grassed area in Eleanor Shipley Park and sand area.	11. Maintain as unfenced area allowing unobstructed access between grass and beach area.	
Ageing flood lighting in Eleanor Shipley Park contributing to unnecessary light spill onto Moffat Beach.	12. Replace ageing park / flood lighting in Eleanor Shipley Park with dark sky and turtle sensitive park lighting with motion activation after 8pm, that is considerate of park use activities.	
Public lighting (BBQ Shelter and toilet facilities) in Eleanor Shipley Park contributing to light spill impacts on turtle nesting habitat on Moffat Beach.	13. Upgrade Public lighting (BBQ Shelter and toilet facilities, car park and general park lighting) in Eleanor Shipley Park with dark sky and turtle sensitive park lighting with motion activation after 8pm, that is considerate of CPTED requirements.	
Maintenance of the Cottonwood tree in the north-east corner of Eleanor Shipley Park to maintain the community's historical connection to this climbing tree.	14. Retain Cottonwood Tree as part of the recreation park in recognition of its historical use and maintain current management practices including extent management.	
Collection of marine life including shellfish from the intertidal marine zone impacting on it ecological values.	15. Liaise with State Government Department of Agriculture and Fisheries to install education signage on the taking of marine animals (shellfish etc) at the Moffat Beach boat ramp.	
Safety considerations with leaning Norfolk Pine tree located in car park.	16. Remove Norfolk Pine identified as a safety risk and ensure replacement Norfolk Pine planting to maintain local character.	
Itchy (Needle) Tree growing adjacent to coastal path provides discomfort when walk on the (leaves / flowers / seeds?) in bare feet.	17. The itchy tree is a Norfolk Island Hibiscus, Lagunaria patersonia. Council to continue to mulch out the entire footprint of the tree to help discourage people from walking underneath the tree. When the tree is fruiting, seasonal exclusion of the area immediately underneath the tree is implemented.	
	18. Consider the relocation and/or removal of the seat from underneath the tree to further reduce the likelihood for park users to come in contact with the fruits.	
Old Strangler Fig growing over the Moffat Beach Playground appears to be ageing – consider the opportunity to plant new fig tree to start growing before old fig dies and the shade and amenity of the area is lost.	19. An assessment of the health of the Strangler Fig has been undertaken and at this point in time it is displaying good health and doesn't require any intervention other than the current Parks and Gardens maintenance program which has been adopted to provide ongoing tree health/care.	
		20. Continue to monitor long-term health of the strangler fig and consider the planting of a replacement strangler fig (in the tree) to grow over existing tree once the existing tree goes into permanent decline.
Park infrastructure including rotundas are ageing and will need to be renewed to cater for increasing community use.		21. Recognition that the level of use for the Moffat Beach area has and continues to increase. There is a lot of opportunity to enhance the Eleanor Shipley Park and Eleanor Shipley Memorial Park areas through a detailed recreation park master plan.
Lack of shade in the Eleanor Shipley Memorial Park area makes the area very hot during the summer months.		22. Parks and Gardens to undertake detailed visitor and public open space recreation use assessment of Eleanor Shipley Park and Moffat Beach areas to plan for and manage current and forecast demand and use.
The sandstone 'sails' art installations are not in keeping with the history and character of Moffat Beach.		

Moffat Beach experiencing significant increase in use impacting on the assets and experience.	
The Coastal Path where it departs from Queen of Colonies Parade has a sharp angle turn that presents some risks to users.	Upgrade/rectify as part of Coastal Path renewal
In heavy rains this park floods over the coastal path near the bin – opportunity to improve the drainage at this location.	Rectify as part of future park upgrades
Queen of Colonies Parade very steep with high volumes of traffic on weekends and holidays – consider making this road one-way.	Traffic study to inform management

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Moffat Beach		
Zone 1C - Moffat Beach to Moffat Headland including Queen of Colonies Parade		
Coastal Path is too narrow to cater for the current and future demand from locals and visitors to the area, with limited areas to safely step off the path to avoid oncoming bikes /e-scooters etc.	1. Need for e-mobility device user education and, at limited key points of conflict, potentially signage to ask e-mobility users to slow down and respect other coastal path users.	Ensure any future e-mobility device hire companies are informed of Coastal Path user expectations and ensure speed limited zones.
Informal access track (located between Moffat Beach and Queen of Colonies) through vegetation on slope contributing to erosion and vegetation damage.	2. Close and rehabilitate informal access track (located between Moffat Beach and Queen of Colonies).	
View from Queen of Colonies Monument being obscured by vegetation growing up – the view from this public vantage point is an important view from the coastal path, and provides a viewing / commentating location for surfing competitions. Ma and Pa Bendall surfing legacy is good but would benefit from greater recognition.	3. Viewshed from Queen of Colonies monument to be maintained. Manage vegetation within identified viewshed to retain view from this public vantage point to the ocean.	
		4. Opportunity to celebrate the Ma and Pa Bendall surfing history and legacy through appropriate interpretive signage along the coastal path in vicinity of monument.
Views from viewing platform being obscured by vegetation growing up, between and in front of platforms.	5. Recognise and identify the public view sheds that should be managed from formal public vantage points / viewing platforms at this location. This location provides public views north along the coast to Kawana etc. Manage vegetation to ensure retention of public views at this location.	
Woody weeds on coastal cliff face impacting on ecology and visual amenity of the area.	6. Increase the level of management of woody weeds to enhance ecological values of the area (within the limits of safe operations and access to the steep and in places unstable coastal cliff).	
Safety Considerations along coastal path adjoining Moffat Headland cliff face between Bennett Street and George Watson Park.	7. Woody weed management, to enhance the environmental values of the area, has opened up the view and potentially informal access to the coastal cliff.	
Retention of historical public use of grassy patches on seaward side of fence separating coastal path in low-risk areas.	Parks and Gardens to assess in partnership with Environmental Operations where enhancement of public safety fencing is required (in keeping with the character of the area and to maintain important public views from the coastal path).	
The spectacular views from Moffat Headland should be the jewel in the crown of the coastal path in the Moffat Beach area – Coastal path and viewing platform infrastructure currently inadequate.	8. Cultural heritage associated with Moffat Headland should be recognised and celebrated with appropriate interpretive signage.	9. Longer term consideration of enhanced viewing area to support / activate the coastal path and provide opportunities for unobstructed views of the ocean, whale watching etc.
Limited education and history of the area presented to locals and visitors – Cultural heritage, European heritage, surfing, environmental, war time history etc.		10. Consider signage initiatives along the length of the coastal path within the study area to celebrate and share the natural, cultural and heritage values.

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
George Watson Park		
Zone 2 - general		
Most visitors to the area staying in holiday accommodation are not aware of George Watson Park.	1. Opportunity exists to prepare and distribute some information to local accommodation houses to draw attention to George Watson Park.	
Zone 2A - GWP West		
Weeds (asparagus, paspalum) impacting on the ecological values of the park.	2. Prepare temporary signs to promote volunteer involvement and weeding session - dates and times.	3. Opportunity for other members of the community to become involved in volunteer activities.
The lack of way-finding signage within George Watson Park is contributing to lack of use by visitors to the area.		4. Install improved wayfinding (directional) signage within George Watson Park to safely guide visitors around a circuit within the park.
Lack of interpretive signage a missed opportunity to educate visitors on the park's history and ecological value (birds, butterflies' vegetation).		5. Install improved interpretive signage within George Watson Park to draw users into the park to experience the natural values of the area – birds, butterflies etc.
Stormwater runoff into George Watson Park from buildings fronting Mcilwraith Street has created some very wet areas within the park that are now dominated by Melaleuca vegetation community.		6. Continue to manage the wetter areas in George Watson Park as a Melaleuca vegetation community. Upgrade sections of trail within park impacted by waterlogging.
Condition (width, grade and edge conditions) of coastal path within George Watson Park is no longer catering for the volume and type of path users.		7. Upgrade of the coastal path is currently prioritised as 'medium' and greater than 10 years before investment. Review the current coastal path prioritisation to consider bringing forward the upgrade of coastal path within George Watson Park
Increasing levels of e-mobility conflict on steep and narrow section of coastal path within George Watson Park is leading to an increased level of conflict between users.	Need for e-mobility device use education and at limited key points of conflict potential signage to ask e-mobility users to slow down and respect other Coastal Path users.	
Lack of interpretive signage on coastal path to help inform and educate users to the history and values of the area.	8. Incorporate interpretive signage at key points on coastal path to celebrate history, cultural heritage, ecology.	
The lack of interpretive signage is failing to draw users off the costal path to experience the natural values of George Watson Park.		
The single bench seat in George Watson Park does not realise the activation potential of the park.	9. Design and install low key activation space in the north-east corner of George Watson Park to help draw coastal path users into the park, to provide a place to stop, rest and learn about the cultural heritage and ecological values of the area.	
The condition and management of vegetation in the eastern 20% of George Watson Park is currently poor.	10. Review management of vegetation in line with bushland operational assessment process and identify improvements for management	
Small number of informal access tracks from the coastal path east to the coast are contributing the erosion and safety issues in the park.	11. Close and rehabilitate informal access track (located on the eastern side of George Watson Park and coastal path).	
Slope and cliff face on eastern side of coastal path is steep and in places unstable.	12. Continue weed management and vegetation rehabilitation to help stabilise cliff face within the limitation of steep slope and limited safe access.	

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Zone 3A - North Shelly Beach		
Landscape & ecology		
Hind Dune is absent due to previous Shell Grit mining and Caravan Park activities.	1. Establish pseudo hind dune vegetation community type and function on the rear of the existing dune. Supplement with amenity plantings of large shrubs / small trees up to 5m in height within the parks and gardens open space area between the coastal path and existing fence line. Parks and Gardens to manage.	
Reinstate appropriate Regional Ecosystem vegetation community type.	2. Put in place a functional habitat reflective of fore dune ecology and complement with requirements for effective dune stabilisation and turtle management / threatened species management. See North Shelly Beach Vegetation Management Pilot Project (Part 6).	
Cottonwood Trees hanging over the fence are problematic for fence maintenance, mowing and use of the area.	3. Cottonwood Trees growing over the fence to be lifted up to 1m back from the fence line. Delivery of works to support establishment of amenity plantings in the parks and gardens area between the dune fence line and the coastal path.	
Encroachment of Cottonwood Trees towards the high tide impact the availability and suitability of space for turtle nesting on the beach.		4. Undertake appropriate dunal vegetation management – See North Shelly Beach Vegetation Management Pilot Project (Part 6). Prepare detailed / sequenced vegetation management plan.
Turtle nesting habitat		
Encroachment of marine couch grass on lower dune restricting turtle nesting.	5. Manual removal and annual maintenance of marine couch grass growing at high tide mark to remove physical restrictions to turtle nesting and replace with spinifex plantings.	
Concerns that unnecessarily large areas of spinifex / dune vegetation are being removed to prepare turtle nest relocation sites.	6. All and any works to establish turtle nest relocation receiving sites is to be in accordance with the State Government (DES) and Council approved guidelines.	
Concerns pandanus roots can impact on turtle eggs, particularly during drought / dry seasons.	7. Pandanus to be planted minimum of 10m landward of identified turtle nesting habitat area.	
Concerns that any beach nourishment will use the wrong sand type and impact on turtle nesting habitat.	8. Shelly Beach is recognised as a closed system, with limited to no natural sand renourishment from offshore marine environment Any proposed assisted sand nourishment is to use appropriate sand.	Investigate potential suitable sand source compatible with Shelly Beach to support any future beach nourishment, including dune reprofiling activities to improve natural defences against coastal hazards.
Limited suitable space available as receiving sites for relocated turtle nests.	9. Maintain existing high-performing turtle nesting and nest relocation site located in vicinity of post 20. This receiving site to be maintained until additional suitable receiving sites are established and settled (approx. 18 months post major sand dune disturbance).	Establish a greater area above high-tide mark to serve as receiving sites for relocated turtle nests determined to be impacted by coastal inundation / erosion, and light spill.

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Zone 3A - North Shelly Beach		
Parks and beach users service		
Tap that was recently located is now in poor location and could be improved.	<p>10. In keeping with the low key character, and level of use and service for North Shelly Beach, the beach tap is to be relocated to a more appropriate and functional location, and complemented by a beach shower, drinking water fountain / bottle refill for beach and coastal path users, and bike rack.</p> <p>Final location and design of services to be determined as part design for proposed realignment of William Street car park and proposed future state of low key viewing platform.</p>	
<p>Lack of facilities (beach shower, drinking water fountain, bike rack) to support public use and enjoyment of the beach.</p> <p>Lack of fit for purpose (low key) public facilities to support appreciation of the area's scenic values.</p>	11. As above.	<p>12. Establish low key viewing platform in vicinity of existing beach access point to provide opportunities for appreciation of beach and ocean, and also to incorporate education and awareness materials.</p> <p>Approach consistent with ELS 2017 (Part C) that states that: 'Viewing platforms may be appropriate to avoid or minimise impacts to vegetation and dunes.' And that the: 'Location, intensity and type of supporting community facilities/infrastructure are appropriate with respect to 12 the local natural values and hazard exposure'.</p>
Beach access		
Russell Street Beach access point is a direct path on an easterly alignment allowing for light spill directly onto beach.	<p>13. Realign beach access by shifting the entrance approx. 10m to the north with the alignment to intersect the existing beach access at the crest (mid-point) of the dune, then maintain existing alignment to the beach to achieve meandering beach access and reduce light impacts to turtle nesting habitat.</p> <p>Reinstate and establish dune vegetation that has been removed as a result of unauthorised vegetation management activities on public land.</p> <p>Benefits include realignment of entrance of beach.</p>	
Informal beach access point contributing to unmanaged dune erosion, vegetation damage, and light spill.	<p>14. Informal beach access point located between Russell Street and William Street is inconsistent with Council's Environment and Liveability Strategy 2017 (Part C) that states that: Pedestrian beach access is by formal accesses only, which are minimised in number and footprint and spaced >200m apart (low demand areas).</p> <p>The distance between the Council managed formal beach access points at William Street and Russell Street respectively is approximately 200m.</p> <p>Informal beach access point to be closed, fence completed, and dune rehabilitated.</p>	
The William Street beach access point contributing to sand blow issues and light spill from William Street and William Street car park.	<p>15. Realign head (entrance) to beach access approx. 10-15m to the south, with alignment running north-east to minimise light spill from vehicles on William Street, Ocean Court, and William Street car park.</p> <p>The proposed north-east alignment and associated dune restoration plantings are consistent with the ELS 2017 (Part C) that states that:</p> <ul style="list-style-type: none"> - [Beach] Accesses are orientated to maximise vegetation and dunal resilience to erosion. - The proposed beach access alignment will minimise the impacts of prevailing south-easterly sea breezes including sand blow onto the coastal path. <p>Revegetation of the dune to be undertaken, where the path has been moved, to support dune stability and nesting turtle habitat.</p> <p>Design path to maintain emergency and maintenance vehicle access to beach.</p>	

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Zone 3A - North Shelly Beach		
The Coastal Path		
User experience of the coastal path would be enhanced with greater levels of activation, education and awareness of distinctive local ecology, history and cultural significance.		16. Installation of low-key viewing deck / platform as part of the beach access. Installation of supporting interpretive materials providing education and awareness materials covering – history, cultural heritage, ecology including turtles, and behaviours.
Concerns of overuse and impacts from the forecast increase in the number of local users and visitors to the area as Sunshine Coast population grows to in excess of 500,000 residents by 2041.	17. As above. Recognition of the need to harden some public infrastructure surfaces and facilities to sustainably support consistently higher volumes of daily users in keeping with the values of the North Shelly Beach area.	
In certain locations the alignment, width and condition of the coastal path contributes to points of conflict between path users and adds to nuisance lights associated with night time users of the coastal path.		18. Upgrades to coastal path in this location is considered a low priority in the context of the full length of the coastal path. The ELS 2017 (Part C) states that: Paths parallel to the shore should be low impact and set back from the vegetated dune where possible.
Unauthorised vegetation management		
Unauthorised vegetation management (pruning, poisoning, general damage) on public lands under Council's care and control.	19. Consistent approach to Council's messaging, response and regulation of unauthorised vegetation management (clearance and/or planting) on public land under Council's care and control.	
Council is not consistently responding to unauthorised vegetation management.		
Unapproved physical and chemical management of dunal vegetation on public lands – evidence at number of locations.	20. Education and awareness messaging to ensure the community is well informed that vegetation management (clearing, trimming, pruning, and planting) activities on public lands is illegal. Consistent application of regulation in response to illegal activity as required.	

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Zone 3A		
North Shelly Beach (William Street Car park)		
Relocate and realign parking (Option 3 - preferred option)	3.1 relocate and realign parking bays away from beach entry to mitigate light spill. 3.2 Reclaim balance area of current car park as enhanced public open space. 3.3 Realign beach access to provide shelter from the south-easterly breezes and contribute to reduction of direct light spill from adjacent road network. 3.4 Undertake appropriate dune planting to contribute to light spill reduction and dune health. 3.5 Straighten the section of coastal path in the vicinity of the William Street car park to eliminate the sharp bend, reduce conflict between users, and address safety and light spill concerns.	
Zone 3B		
Shelly Beach (south of William St)		
Public views of the beach / ocean from the coastal path between William Street and the Creek / drain at northern end of Victoria Terrace highly valued as part of the coastal path experience.	1. Maintain filtered views of the beach / ocean from the coastal path between William Street and the Creek / drain at northern end of Victoria Terrace.	
Storm and coastal erosion events impacting on the creek/ drain at the northern end of Victoria Terrace with the risk of significant erosion into the open spinifex dune area directly north of the drain.	2. Maintain cyclical / event-based regime of maintenance works to rectify erosion at the creek/drain located at the northern end of Victoria Terrace, Shelly Beach.	
Open Spinifex coastal dune lacking overstorey vegetation to provide greater levels of dune stabilisation.	3. Establishment of open /sparse plantings of Casuarina, Banksia and Pandanus from the fence line east to the mid-point on the dune. Planting to support dune stabilisation and contribute to light spill management. Spacings to allow for filtered views to the beach and ocean from the coastal path.	
Unapproved management (mowing) of public land on western side of coastal path.	4. Mowing / maintenance of the public open space to be undertaken by and in accordance with Council approved levels of service.	
Vegetation (trees) reaching senescence, being removed, and not replaced from public open space.	5. Public open space vegetation / tree management regime to ensure replacement program of trees /vegetation to ensure retention of public amenity and shade.	

Key consideration	Short-term action (2021-2025)	Mid to Long-term action (2025-2030+)
Zones 3C and 3D		
South Shelly Beach		
Vegetation management along coastal path not providing for safe use.	1. Maintain vegetation envelope around (over) coastal path in accordance with agreed levels of service to maintain safe access and use of the coastal path.	
Vegetation (Cottonwood) obscuring public street lighting at the intersection of Banksia Street and Alfred Street.	2. Increase the regularity of vegetation maintenance in the immediate vicinity of the public streetlight at the intersection of Banksia Street and Alfred Street to maintain public safety.	
Stormwater drain reportedly blocked in Banksia Street flowing into Alfred Street drain contributing to localised flooding issues at the northern end of Banksia Street.	3. Inspect, clear if required and maintain stormwater drain at the northern end of Banksia Street.	
Informal beach access located at the northern end of Victoria Terrace is located in a highly mobile erosion prone area. Public access at this location is directly contributing to dune erosion and dune vegetation damage.	4. Informal beach access is inconsistent with Council Policy and is actively contributing to dune erosion and dune vegetation damage. Maintain fence restricting public access to this informal access point.	
Encroachment of marine couch grass on lower dune restricting turtle nesting.	5. Manual removal and annual maintenance of marine couch grass growing from high tide mark to remove physical restrictions to turtle nesting. Undertake spinifex planting to stabilise areas following removal of marine couch.	
Weeds impacting on the ecological value of the dune.	6. Maintain activities to actively manage exotic weeds.	
Overnight camping.	7. Maintain regulated parking controls to manage overnight camping.	
Informal (illegal) Parking – adjacent embankment in south-west corner of Shelly Beach Park car park	8. Install bollards along road alignment in the south-western corner of the Victoria Terrace car park to restrict informal parking.	
Vegetation management on embankment in south-west corner of Shelly Beach car park.	9. Prune Cottonwoods back by approx. 5m from bollards / road edge, and undertake infill plantings Ongoing management of Cottonwoods in this area to provide space for existing Pandanus and She-oak and further infill plantings to increase vegetation diversity.	10. Retain balance of existing vegetation on slope to support bank stabilisation in this area.
Beach / Rock Platform access point at southern extent of Shelly Beach Park.		11. Formalise and upgrade the Beach / Rock Platform access point to provide safe access.
Coastal Erosion, overland flow from heavy rainfall events and informal pedestrian traffic destabilising the bank between the Shelly Beach Park central (main) beach access point and the southern extent of the study area.		12. Plan for and undertake bank stabilisation works for the area between the Shelly Beach Park central (main) beach access point and the southern extent of the study area – approx. 110m.
Coastal Path Pedestrian Access from King St to Victoria Terrace Park is steep and safety issues exist with pedestrians crossing the road at the King Street and Victoria Terrace intersection.	13. Address the immediate safety concerns by upgrading the pedestrian crossing at the King Street and Victoria Terrace intersection.	14. Investigate an alternative coastal path alignment and infrastructure solution that connects Victoria Terrace and Shelly Beach Park by traversing the slope in the south-western / southern end of Shelly Beach Park.
Public lighting (car park and park lighting) located in the Shelly Beach Park contributing to light spill impacts on turtle nesting habitat on Shelly Beach.	15. Upgrade Public lighting (car park and park lighting) located in the Shelly Beach Park to best practice turtle sensitive lighting including shielding, motion activation and globe selection.	16. Light motion activation to achieve CEPTED (crime prevention through environmental design) requirements and be active from 8pm onwards during the turtle nesting season.
Metal ‘reading chair’ next to Shelly Beach Playground gets very hot in summer and is reportedly unusable due to heat.		17. Consider establishment of shade plantings or structure to provide shading to the ‘reading chair’.

Rock platform education lacking to inform users of the values and impacts in the intertidal zone.	18. Liaise with State Government Department of Agriculture and Fisheries to enhance education signage on the types of marine animals (shellfish etc) in the rock platforms.
Rock Platform Citizen / school science.	19. Liaise with local Caloundra Schools to discuss availability of historical data collected by students on the health, condition, and species diversity of marine life on the rock platforms.
Dune vegetation immediately adjacent Shelly Beach Playground provides shade beach users during the summer months.	20. Enhance the level of active management of this dune area and improve health and condition of vegetation and improved dune stabilisation.

Appendices

Appendix A – Spatial Panels from Community Information Sessions

Appendix B – Action Plan table with status and community sentiments

Appendix C – EPBC referral outcome