

CAIRNS BOTANIC GARDENS

2005 MASTERPLAN REVIEW



QUALITY INFORMATION

The Cairns Botanic Gardens Masterplan has been developed for Cairns Regional Council By Rounsefell Design Pty Ltd (RD)

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All scales shown are for A3 original size document unless noted otherwise.

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ACKNOWLEDGEMENT OF COUNTRY

We acknowledge and respect the Gimuy Waluburra Yidinji as the original custodians of the land and waters of the Cairns Botanic Gardens area, their unique ability to care for country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has and will ensure the continuation of cultures and traditional practices.

CONTENTS

EXECUTIVE SUMMARY	2
INTRODUCTION	3
Location & Context	3
SITUATION REVIEW	4
Key Precincts	4
2005 Masterplan Review - What has been achieved so far	6
Botanic Garden Trends	8
Engagement Outcomes	10
Background Review - Landform	12
Background Review - CRC Mapping Overlays	13
Background Review - Coastal Management - Sea Water Inundation	14
Site Assessment - Flecker Gardens And Centenary Lakes - Opportunities And Constraints	15
Site Assessment - Visitor Information Centre And Tanks Arts Precinct - Opportunities And Constraints	16
Site Assessment - Environmental Issues, Services	16
Site Assessment - Access & Circulation	17
Background And Engagement Review - Priority Areas	18
Background Review - Safety & Security Issues	19
'BOTANIC AREAS' OF CAIRNS - FUTURE DIRECTIONS	20
VISION, GUIDING PRINCIPLES AND CONCEPTS	21
Cairns Botanic Gardens Precinct - Vision & Guiding Principles	21
Concept Designs - Service & Vehicle Access - Short to Medium Term Strategy	22
Concept Designs - Visitor Circulation & Services - Short to Medium Term Strategy	23
Concept Designs - Visitor Experiences & Interpretation - Short to Medium Term Strategy	24
Depot and Nursery Strategy	25
CONCEPT MASTERPLAN - FLECKER GARDENS AREA	26
Site Concept Plan	26
Nursery And Depot Concept	28

KEY PRIORITIES	29
REFERENCES	30
APPENDICES	31
Appendix A - Background Review - Climate Change Situation Overview	
Appendix B - Background Review - Climate Change And Cairns	
Appendix C - Engagement Report	
Appendix D - Summary of Traditional Owner focused Actions and Recommendations	
Appendix E - Asset Condition Assessment	
Appendix F - Japanese Friendship Garden - Concept Design	

GLOSSARY

CBG	Cairns Botanic Gardens
CHAS	Our Cairns Coast - Adapting for the Future Coastal Hazard Inundation Strategy
CRC	Cairns Regional Council
FBG	Flecker Botanic Gardens
GMY	Gimuy Walubarra Yidinji

EXECUTIVE SUMMARY

The Cairns Botanic Gardens is one of Australia’s’ premier Botanic Gardens and includes the Flecker Botanic Gardens, the Tanks Arts Centre and the Centenary Lakes Precinct. The Gardens are well known and much loved by locals and visitors alike and is ideally located close the Cairns CBD and the airport.

The 2005 Botanic Gardens/ Tanks /Centenary Lakes Masterplan Report adopted by Council provided guidance for the area to be developed as an integrated community facility to preserve, cultivate and enhance the environment, horticulture, artistic and cultural lifestyles and experiences in the region. This vision is still relevant today.

Many parts of the 2005 Botanic Gardens Masterplan Report, in particular specific approaches to the Plant Collection, Components and Themes and Interpretation of the Collection, are still highly relevant and should continue to be used as a guide for Council.

This Masterplan Review applies to all areas within the existing Masterplan, including the Flecker Botanic Gardens, Botanic Gardens Visitor Centre area, Tanks Art Centre area, Tanks Car Park, Collins Avenue adjacent to the park, and areas within the park south of Collins Avenue and north of Greenslopes Street, Edge Hill. The review does not apply to the walking tracks and trails within the Mt Whitfield Conservation Area including the Red, Green, Blue and Yellow arrow trails.

The scope of this report is, not to provide a new masterplan for the area, but to provide a comprehensive review of the 2005 Masterplan, so Council can better understand:

- / What recommendations have been implemented
- / Yet to be implemented aspects

to enable contemporary recommendations for the Gardens development and management moving forward.

Some components are no longer desirable or necessary, some remain outstanding, and several new items need to be considered to meet the modern demands of the site. Further, some infrastructure is ageing and/or a safety issue and requires upgrading, renewal or removal.

As part of the scope of this report, a comprehensive Community and Stakeholder Engagement process was undertaken during 2022, to understand community and stakeholder aspirations and issues. A summary of the outcomes is outlined in this report and the full Engagement Report can be found in the Appendices. Key findings include a desire to improve accessibility and connectivity throughout, way finding, amenity and vibrancy, art and culture inclusions, and safety and maintenance on site.

The 2005 Masterplan recommended combining administration facilities for the Botanic Gardens and Tanks cultural arts into a single building to integrate these functions at the highest level. In 2010 the current Visitor Information Centre was built with this intent, however this strategy failed, with the offices component of the building solely used by the Tanks Arts with a need for additional space.

As the 'front face' of the Cairns Botanic Gardens visitor information experience, the form and function of the building is problematic, due to its highly reflective, hard and unwelcoming building facade - which is also a bird hazard.

The Visitor Information Centre itself is not well-located, and ‘front of house’ but hidden away off the street, deep within the building, and is difficult for visitors to find. The building also houses a small cafe area; whilst it is recommended this be retained, is too small to provide a primary food and beverage function for the Gardens, and being street-facing it also lacks the ambience of a garden setting (especially compared to demand and offerings in other contemporary Botanic Gardens).

At the same time, the majority of the infrastructure and buildings within the Flecker Botanic Gardens which house the current Gardens Depot, curator, manager, staff facilities and Nursery, Friends offices, Gardens Cafe and toilets are either reaching, or at the end of their life, are not to standard, not fit for purpose or poorly designed and are inadequate to enable the Gardens staff to efficiently carry out maintenance and management.

Although the living collection is outstanding, particularly as an education resource, the Botanic Gardens is failing to perform well on several key functions of a Botanic Gardens, namely:

- / Public education
- / Botanical research
- / Conservation horticulture
- / Cultural/artistic space within the gardens (not including the Tanks Arts precinct)

This report provides recommendations for several areas and issues; the highest priority items include:

- / An urgent upgrade is required to the Flecker Nursery and Depot Precinct - including Flecker Botanic Gardens (FBG) Nursery, Depot, Gardens Café and Conservatory area – there is a lack of functional back of house connection to the Conservatory that makes maintenance difficult and time consuming. There is an urgent need to undertake a detailed masterplanning and redesign process for this area to address these issues.

- / In the ultimate design, the Nursery staff and Flecker Maintenance Team will remain located at the existing Depot site, but in an upgraded and renovated, fit-for-purpose administration building (i.e. the existing red brick building). The Curator, Interpretation Officer and Friends of the Botanic Gardens will move to the existing Visitor Information Centre building. The Interpretation Officer will be key to the strategy to repurpose the existing shop space to help provide an integrated, welcoming, informative and educational visitor experience on arrival.
- / General improvements are required to site access, Collins Ave pedestrian safety (road speed and crossings), amenity, parking, turnaround ability at the west end of Collins Ave, and improved wayfinding to Flecker Botanic Gardens through provision of a new entry and gate, central wide spine path, and closing of other access points as shown on the Concept Plan.
- / A Climate Change Adaptation Strategy is required for the Gardens to provide Council with a short-and long-term planning approach and strategies to manage the inevitable inundation of the Centenary Lakes area over the next 50 years. There is a predicted loss of approximately half the entire precinct (primarily south of Collins Ave).
- / Provide ongoing support for the Interpretation Officer - this role is critical to enable multiple other aspects of the key strategies and priorities to be executed. This includes managing development of a comprehensive and integrated wayfinding and signage strategy throughout the Gardens, including associated consultation required.

There is an important opportunity to also provide a fresh, new food and beverage offering within a relaxed, lush, green Botanic Gardens setting. It is proposed this takes the form of a temporary (bump in) or permanent coffee and snacks cart with associated table seating under the shade of a nearby large fig tree. The concept masterplan for the Flecker Gardens Area on pages 26-28 provide more detail on these proposals.

Key Priorities and Actions are provided in the back of this report. The recommendations are listed in order of high, medium and low priority, and it is intended improvements be undertaken in a staged process over time, as budgets become available.

The 2005 report did not adequately address First Nations history on the site or include Traditional Owner knowledge in its masterplan design approach and outcomes. The Gimuy Walubarra Yidinji (GWY) are the Traditional Owners of the area. Moving forward, it is Council’s intention to provide a consultative mechanism which regularly and consistently engages with the Elders for future planning and management for the precinct.

Traditional Owner-focused Actions and Recommendations as a result of engagement with GWY are summarised in Appendix D as a basis for further discussion about priorities.

A preliminary Masterplan Order of Cost has been provided separately to inform Council of likely staged costs for future Gardens adaptation strategies, infrastructure planning and maintenance budgets in the short (0-5 years), medium (6-10 years) and long term (10 years or more).

The recommendations in this report will assist Council to continue improvements and revitalisation of the precinct, for ongoing user enjoyment and education by providing better site access, connections, amenity, way finding, cultural, scientific value, educational and informative experiences for locals and visitors alike.

We are all visitors to this time, this place.

We are only passing through.

Our purpose here is to observe, to learn, to grow, to love and then we return home.

Australian Aboriginal Proverb
(provided by N. R. Reys)

INTRODUCTION

LOCATION & CONTEXT

Scale: 1 : 25000 @ A3



“The Botanic Gardens Precinct is unique and not many cities can offer such well curated gardens so close to the CBD. It is a ‘jewel’ in the crown”

Charles Clarke, Curator

The Cairns Botanic Gardens includes multiple areas of distinct character within a single precinct. The combined area of the Flecker Botanic Gardens, Tanks Precinct and other gardens and Centenary Lakes Precinct is 39.8ha. A detailed review of each area is provided in following sections of this report. The facilities provided north of Collins Ave are on sloped sites on higher ground above future sea water inundation predicted levels. The areas south of Collins Ave are primarily on low lying, gently undulating ground at risk of compromise to their current function and character due to predicted sea level rise.

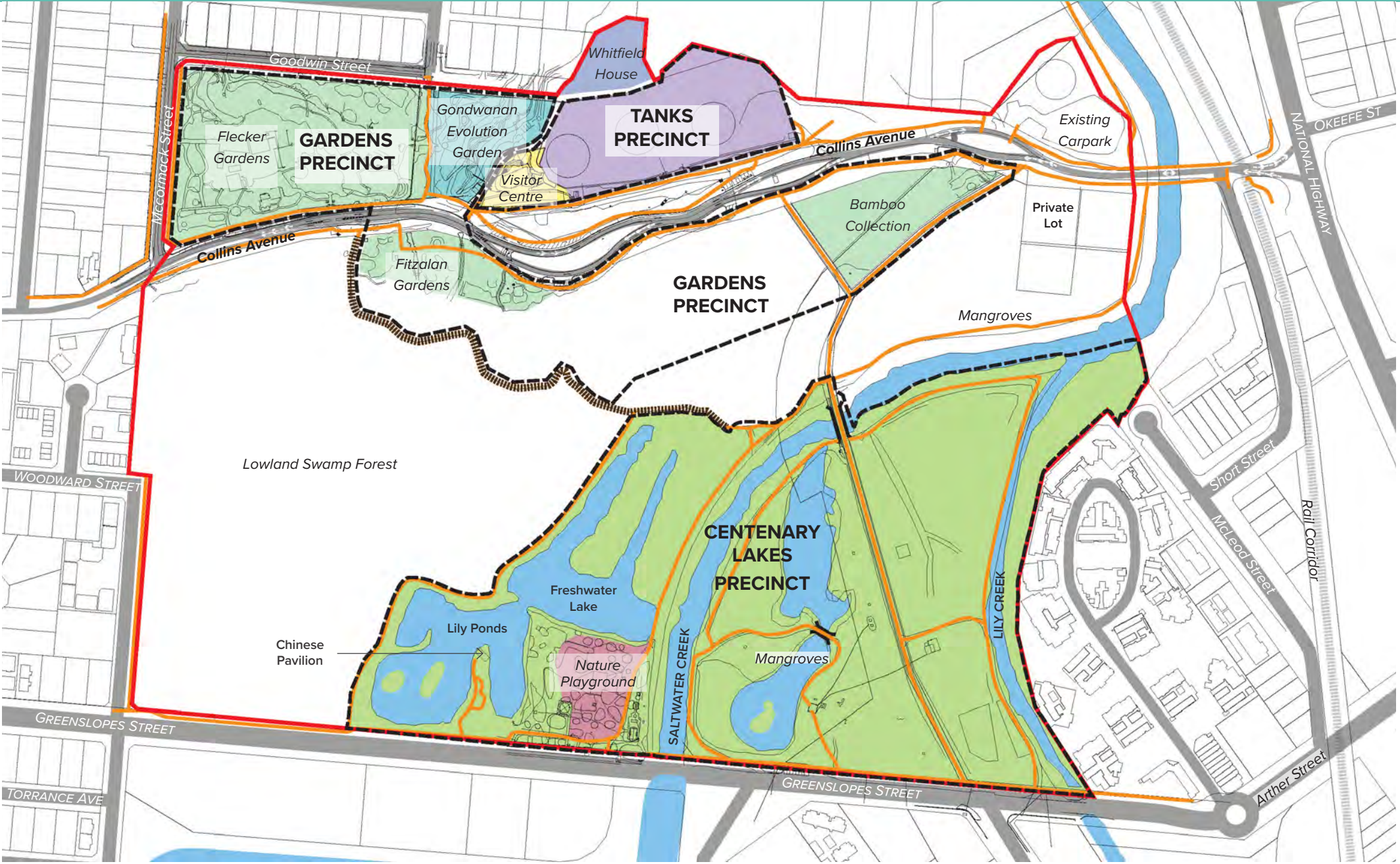
There are very few references within the precinct to any pre-European history of the area, with only one small bush foods display within the Flecker Gardens and minimal interpretive signage. Previous plans for an Indigenous Sculptural Trail have never been realised. There are many opportunities to better recognise the traditional custodians of the area, throughout the site.

Gardens Precinct

The 2.35ha Flecker Botanic Gardens site in the north-west of the precinct is most well known for its botanical contribution and visitors and locals primarily associate the Cairns Botanic Gardens with this State Heritage listed site. Its primary current focus is on exotic tropical plant displays, however more recent additions such as the conservatory have provided opportunities to expand to include more local tropical species. There is pressure on this site to expand its focus to include more community facilities such as providing for curated arts and culture events. This moderate to gently sloping site is elevated above the coastal plain, and is bisected by a rainforested waterway. It includes the main nursery and depot, the Conservatory built in 2015, Botanic Gardens Cafe, public toilets, display gardens and lawns.

The Gardens also includes the lesser known display areas south of Collins Ave including the Fitzalan Gardens, Bamboo collection, palm displays and a feature boardwalk through the lowland swamp forest, one of the few remaining remnants in Cairns of a pre-European coastal lowlands tree swamp typology. This boardwalk is the primary link between the Flecker Botanic Gardens and the Centenary Lakes Precinct,

The Visitor Information Centre was built in c.2010 and consists of two separate buildings with a central open covered walkway in between, which is part of the Collins Ave public footpath system. The southern building consists of offices and meeting rooms with the other building housing a small cafe, public toilets, meeting room, information centre and outdoor undercover amphitheater. The Visitor Information Centre was originally built with a focus on Botanic Gardens use, however half of the building is currently used solely by the Tanks Arts staff.



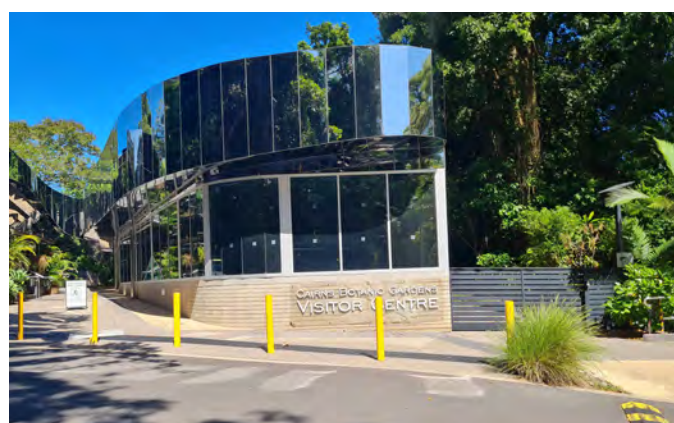
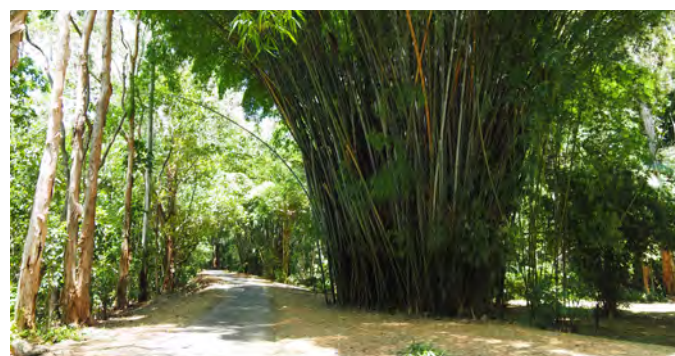
Tanks Precinct

The historic Tanks Precinct consists of Tanks 3, 4 and 5. Tanks 1 and 2 were located to the eastern end of the Gardens Precinct on Collins Ave, with one of the tanks being demolished to provide additional parking. The Tanks Precinct now provides a vibrant home for exhibitions and performances, however there are some limitations to use and management issues with providing sufficient storage, bump in/out access, etc. some of which are associated with restrictions due to its heritage status. This precinct also includes public toilets.

Centenary Lakes Precinct

The Centenary Lakes Precinct to the south of the site has been developed since the 2005 Masterplan to include a very popular nature play space, as well as a Chinese pavilion set on the edge of Freshwater Lake. In 2018 a Japanese Friendship Garden was also proposed in this precinct but has not proceeded beyond concept planning. The area includes Freshwater Lake and Saltwater Lakes which are already subject to tidal inundation. Although this precinct currently has high ecological values and is an important local bird habitat, its future is uncertain due to sea water inundation incrementally affecting the entire site within the next 20 years. Further investment in infrastructure and facilities within this zone needs to be carefully considered with long term viability in mind.

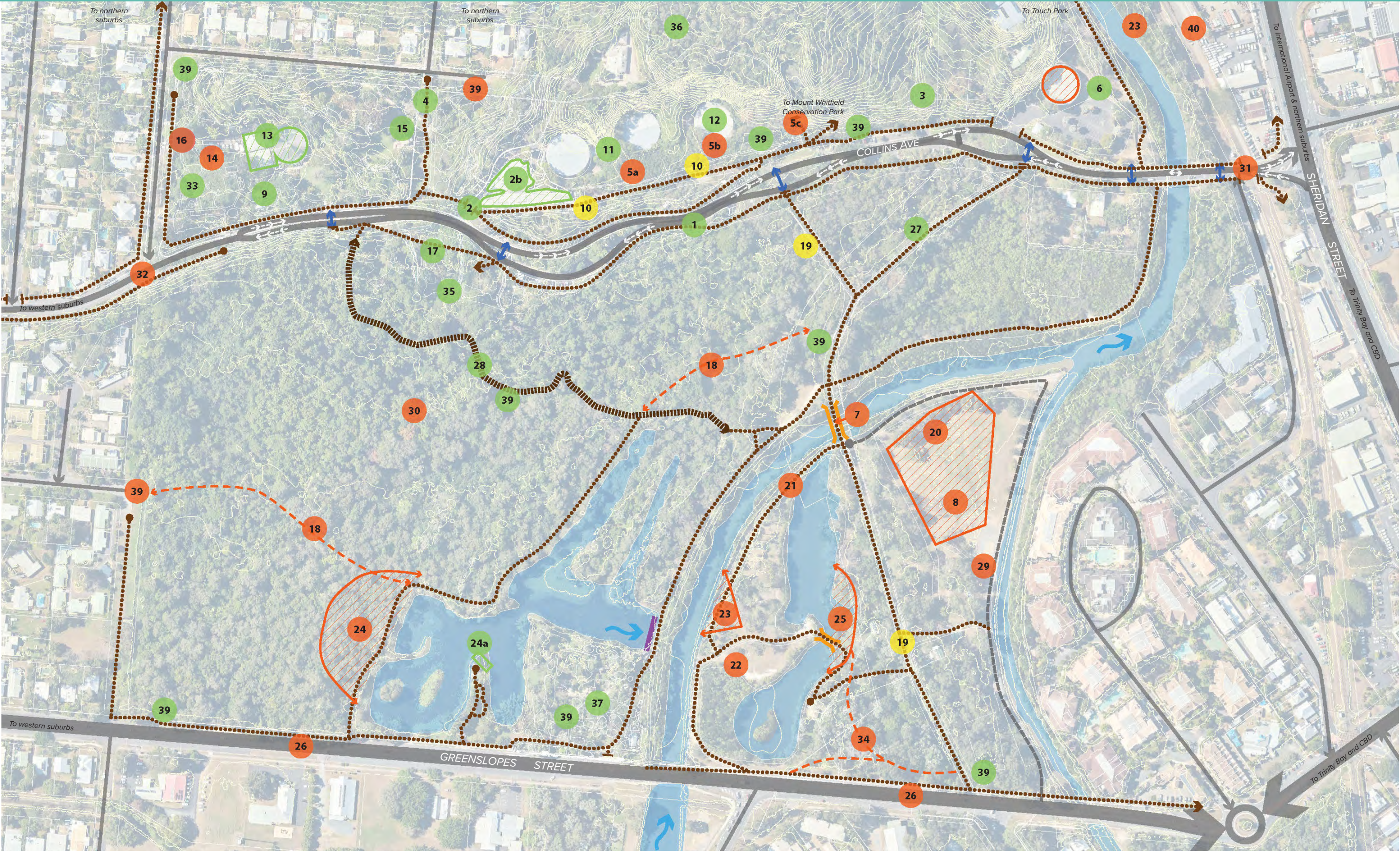
LEGEND	
	Pedestrian Paths
	Precinct Boundary
	Boardwalk
	Extent of Site Investigation Area



Gardens Precinct

Tanks Precinct

Centenary Lakes Precinct



LEGEND

Incomplete

Complete

Semi-complete

Roads: size denotes hierarchy

Collins Avenue (white arrows indicate traffic direction)

Dirt road (staff vehicle access)

Primary pedestrian paths

Boardwalk

Pedestrian road crossings

Bridge

Traffic directional flow

Area planned for development; not completed

Area planned for development; completed

Waterflow

Weir

LEGEND OF COMPLETE AND INCOMPLETE ELEMENTS

1	Collins Avenue Realignment	24a	Lakes Pavilion ⁶
2	Visitor Centre Node Western Entry	25	Saltwater Lake Extension
2a	Tanks Art Centre Visitor Centre (not shown) ¹	26	Greenslopes Street Boulevard
2b	Botanic Gardens Visitor Centre	27	Bamboo Collection
3	Red Arrow Walk and Vine Arbors	28	Overpass and Elevated Boardwalk
4	Macdonnell Street Closure	29	Buffer Revegetation
5a	Catering Hub	30	Forest Lookout
5b	Printing Hub	31	Collins Ave Gateway East
5c	Wet Activity Hub	32	Collins Ave Gateway West
6	Eastern Car Park, Tank Removed ²	33	Aboriginal Plant Use Collection ⁷
7	Saltwater Ck Bridge (ex'g pedestrian, future mtce vehicles)	34	Economic Botany Walk
8	Maintenance Compound	35	Stream Display
9	Restaurant (Gardens Cafe)	36	Mt Whitfield Revegetation
10	Tanks Promenade, Sculpture Walk ³	37	Amenity Horticulture and Play Area
11	Tanks Precinct	38	Vector Control, Water Supply (not shown)
12	Amphitheatre	39	Information Nodes and Shelters ⁸
13	Conservatory	39	
14	Prime Display Area A	40	Tourist Railway Station (outside Council scope and budgets to complete this item)
15	Prime Display Area B, Garden Stage		
16	Maintenance Compound		
17	Palm and Cycad Collection		
18	East West Pedestrian Link ⁴		
19	Botanic Walk ⁵		
20	Plant Production Nursery		
21	Mangrove Interpretative Link		
22	Lakes Interpretative Centre		
23	Boat Landing		
24	Freshwater Lake Extension		

DISCUSSION

- ¹ The Tanks Art Centre Visitor Centre and Botanic Gardens Visitor Centre were shown as separate elements in the 2005 Masterplan, however these are currently co-housed in the Visitor Centre building (location 2b)
- ² Eastern Carpark is complete, with only one tank removed for parking.
- ³ The Tanks Promenade portion of works is complete however the Sculpture Walk element is yet to be installed; planning and design proceeded as far as construction documentation phase, however did not proceed due to a lack of funding.
- ⁴ The eastern end of the East-West Pedestrian Link is complete, however there is no connection to Woodward Street
- ⁵ Botanic Walk has not been widened as specified within the original masterplan, however construction documentation indicates that lighting has been installed (note: CRC to confirm installation) .
- ⁶ A Lakes Pavilion has been built as part of the Chinese Friendship Garden and is located at the south of the freshwater lake. The 2005 Masterplan showed this element to the north.
- ⁷ The Aboriginal Plant Collection exists as a small path-side element located in the southwest of the Flecker Gardens. The 2005 Masterplan showed this element as a land corridor running between the Freshwater and Saltwater Lakes.
- ⁸ Complete where appropriate: information nodes and shelters have been installed where relevant infrastructure has been completed and are marked in green. Placements planned for interpretation that do not yet have the relevant infrastructure completed are marked incomplete on the map.

BOTANIC GARDEN TRENDS

Benchmarking is performed to assess the qualities of contextually similar sites, which are considered to be of exemplar quality. The following botanic gardens were selected based upon the following considerations:

- Connection/proximity to the CBD
- Location (e.g. tropical)
- Interpretation strategies and implementation
- Plant collection organisation
- Commitment to education
- Funding strategies
- Community engagement



Children's play at the Singapore Botanic Gardens is inspired by and integrated within the rainforest setting.

Singapore Botanic Gardens
Singapore

VISION
To play an important role as a leading tropical botanical institute, and an endearing place to all Singaporeans.

Singapore was selected due to its tropical inner CBD context, which is similar to the Cairns Botanic Garden. Beyond this, Singapore has been selected for the exceptional way in which it engages visitors from all age groups; the garden features endless play opportunities and children have the opportunity for more directed learning via guided activities. There are hobby and craft opportunities for adults targeted towards both social activities and corporate functions, as well as both free and paid tours. Singapore does not just provide an opportunity to engage with plants, it has built its garden around a culture of ‘green leisure’, showcasing local species through a diverse range of engagement activities and experiences that aim to blend nature and art. The Singapore Gardens do not focus necessarily on the aesthetic qualities of the plants, but rather their functions and characteristics, within the broader context of showcasing environmentally friendly design. Through this focus on functionality and engagement, this botanic garden brings people closer to nature and reinforces to visitors the link between nature, health, and wellbeing.

Singapore Botanic Garden is open extensive hours (5am until midnight, with select areas closed 7pm to 7am for conservation purposes). It is well connected both to the CBD and to broader hiking trails for a nature based experience. This positions the Botanic Gardens proper as a hub for a broad range of nature and play-based activities, while also allowing for connectivity to a busy central hub and a natural oasis.

Western Australian Botanic Garden - Kings Park
Perth, Western Australia

VISION
Originally of a European style garden with lawns, trees and flower beds, an acknowledgment of climate change and low nutrient soil changed the focus to a new vision with two focal points to:

- Achieve an ever changing living research centre that focuses on conservation of WA's flora and display the State's most diverse and spectacular plant groups;
- Empower and teach the community to care for and establish WA's unique plants and biodiversity.

Kings Park Botanic Garden is set within a larger parkland and is only open during daylight hours. It has a dedicated focus on education and research, focusing on ‘best practice’ initiatives such as water recycling and nutrient stripping; seed science; conservation genetics and biotechnology; and educating the practitioners and land managers to take the education message into the community.

Like Singapore, Kings Park focuses on environmental sustainability, and keeps its plant collection relatively focuses on showcasing and highlighting predominantly Western Australian species.



Kings Park Botanic Gardens showcases the unique flora of Western Australia within a program designed to educate and encourage people to get involved in the conservation and growth of these species.

Kirstenbosch Botanical Gardens
Cape Town, South Africa

VISION

To champion the exploration, conservation, sustainable use, appreciation and enjoyment of South Africa's exceptionally rich biodiversity for all South Africans.

This garden has been selected as a benchmark for its resource and prioritisation strategies; with 528 hectares, the area of focused curation and maintenance is limited to 36 hectares with remaining hectares kept as a natural protected area (note this site experiences extreme security issues). Kirstenbosch is a curated hub from which visitors can access well-connected hiking trails for non-curated nature experiences. Kirstenbosch leverages off its spectacular mountainside location as a backdrop for the gardens.

Established in 1913, Kirstenbosch has a rich history of over 200 years and even has remnants of a hedge of wild almond (*Brabejum stellatifolium*) planted by Jan van Riebeeck in 1660. The Gardens' flora is showcased by designating its plant collection into uses and ecosystems, with a small amount of key nomenclature groups highlighted in specific areas. The Botanic Gardens operates as a prime tourist attraction in the suburbs of Cape Town, providing an event space and features a treetop walk. Kirstenbosch's economic funding is

derived from charging an entry fee, offering exclusive accommodation and an event space for hire. It also has a paid gardens program for school aged children. The program is based on biodiversity, ecology, climate change, water and sustainability. Lastly, it also has a gift shop, 3 restaurants/cafe's and plant nursery all of which provide a diverse income stream to help fund the site.

Unlike the other benchmarked gardens, Kirstenbosch is located 13km from the Cape Town CBD and as such accessibility is primarily by cars and buses.



Planting beds at the Royal Botanic Gardens in Kew display plant families as part of their education and research focus.

Royal Botanical Gardens
Kew, England

VISION

Taxonomically, geographically and genetically diverse collections, aligned with Kew's scientific priorities and displayed and interpreted in innovative ways to communicate the wonder of plants to diverse audiences. As well as changing the ways we operate, we will also use our world-leading expertise and respected voice to evidence sustainable practices and advocate for sustainable action, supporting progress towards the UN Sustainable Development Goals.

Kew has been selected for benchmarking due to its highly developed collections. Its art collection features prints and drawings from the last 200 years, and the Gardens house unpublished field notebooks and photographs, plant records and maps of the gardens development. Its research collection focuses on seed banking and conservation, particularly in the rock garden which also holds a cold conservatory featuring alpine plants that assist researchers as it provides ease of access compared to requiring a site visit to alpine regions. The Gardens innovative design contributes to its significantly diverse distribution of plant collections, featuring species from European Alps and Pyrenees, Central Asian steppe and Himalayan mountain streams and meadows, Northern America's Alpines, Patagonia, the Mediterranean, South Africa and Australian Southern Alps and New Zealand.

Located approximately 30 minutes from central London by car, Kew is as far from London CBD as Kirstenbosch is from Cape Town. The site has visitor parking issues with limited available parking which is also issue currently raised for Cairns Botanic Garden. Kew addresses this by having a diverse range of public transport options including boat, train, tube, bus, and cycling with bicycle racks provided at every entry. Each option is detailed clearly on the website for easy visitor accessibility.

Like Kirstenbosch, Kew has an entry fee, as well as a paid membership. This membership provides unlimited entry, discounts, exclusive event access including special talks and tours. Revenue is also sourced from an online shop located on the Gardens website.

What does this mean for Cairns Botanic Gardens?

- / Select a focal direction in line with a clear vision
- / Incorporate First Nations culture and knowledge into future developments and strategies in the Gardens
- / Incorporate climate change adaptation strategies into short, medium and long term management planning for the Gardens
- / Identify opportunities for Cairns Botanic Gardens to showcase to visitors rare and threatened species and botanic gardens' role in conservation
- / Improve connectivity and CBD active transport access
- / Investigate additional economic revenue raising opportunities
- / Promote and enhance existing lifestyle and arts features
- / Partner with education facilities to maximise opportunities to learn about tropical flora, First Nations cultural connections to and knowledge of Country, climate change adaption strategies and species conservation in a changing world

It is important to note that none of these gardens was an "exemplar" in every category; instead, each held a focus directed towards a small number of the categories reviewed. This suggests that while it may be important for a botanic garden to strive to showcase each of these areas, a committed focus to select key areas is sufficient to create a point of difference compared to other gardens.



With its mountainous setting, Kirstenbosch Botanical Gardens is in a prime location to offer tourism activities, including accommodation and venue space to maximise revenue.



The Royal Botanic Gardens in Kew experiences a temperate climate, however their temperature controlled conservatory allow Kew to showcase and extensively research a broad range of species from other climatic regions.

ENGAGEMENT OUTCOMES

Visited by 76.9% of respondents



62.6%



52.5%



37.6%



37.1%



Engagement Overview

Comprehensive community and stakeholder engagement was undertaken to identify the following:

- / The demographics of site visitors (characteristics, visitation patterns)
- / Elements of the site popular to visitors (favorite aspects)
- / Site issues and priorities

The Stakeholders engaged included:

- / Site visitors who chose to respond to a survey (hosted on Council's Have your Say workshop over 4 weeks) and advertised with QR codes throughout the precinct
- / Traditional Owners: the Gimuy Waluburra Yidinji (GWY)
- / Tourism and Hospitality services and providers (Botanic Gardens Cafe; Tank Sixty-Four Cafe)
- / Special interest groups (Friends of the Botanic Gardens; Bird life Australia; Tropical Arts)
- / Cairns Chamber of Commerce
- / Council Staff (Water and Waste; Environmental Services, Planning and Property Services; Tanks Staff and Inclusion Officer; Botanic Gardens Depot Staff

The full stakeholder engagement report is in the Appendices.

Key Outcomes

-  Improve Accessibility and Connectivity
-  Improve Wayfinding
-  Improve Amenity and Vibrancy
-  Improve Art and Culture
-  Improve Safety and Maintenance Outcomes

Traditional Owner Engagement Outcomes

The recognised traditional owners of the precinct are Gimuy Waluburra Yidinji and the consultant team engaged with them for initial discussions with representatives of the GWY Body Corporate (Gudju Gudju and J. Lynch). This meeting provided an overview of issues and agreement on a process for engagement that included:

- / The above representatives meeting with Elders to provide background and encourage feedback, ideas and suggestions.
- / Collation of the outcomes for inclusion in the engagement report and for consideration in the development of the new (revised) Master Plan.
- / Further engagement to be managed by the above representatives when the new draft plan is released and a similar workshop process offered to seek comment on the draft Master Plan.

The following are generalised comments from Traditional Owners as a result of the initial discussions:

- / Overall it is essential that Gimuy be recognised as the Traditional Owners of the Botanic Gardens Precinct and that planning and management for precinct has a consultative mechanism which regularly and consistently engages with the Elders
- / Support for the overall purpose and use of the precinct as a public space and a number of opportunities to add value with increased integration of cultural aspects to the land and the stories that belong to the precinct.
- / There are sites of cultural significance within the precinct and these need to be reviewed/ surveyed and treatment of these (in the master plan) agreed with Gimuy Elders
- / Explore opportunities for greater recognition of indigenous culture and past use of country in the precinct for food, resource collection and other purposes. Also to provide a different“telling” of the history of the CBG precinct in past settlement of Cairns (such as the fresh water wells). It should be noted that the use of the area as a traditional resource is within “living memory” and this needs to overlay any telling of non-indigenous settlement.
- / Opportunities for strong interpretation of indigenous culture within the Gardens and within the Centenary Lakes area. This could include signage and site-based interpretation, the development of interpretive

trails, as well as the establishment of guided tour experience or developing lesson plans for school groups etc.

- / Opportunities to develop/ expand cultural tourism products and visit the gardens / lakes precinct as part of these. This may have implications for design with additional spaces included to highlight specific locations or allow group talks etc.
- / A permanent presence for Gimuy with a Cultural Keeping Place or satellite keeping place could be a good outcome- Tank 2 as a potential location was mentioned. An alternative location might be the meeting room and/ or the current Visitor Centre shop. This is a prominent space suitable for linking arts, culture and botany for the site.
- / Explore the opportunity for Gimuy rangers to have a greater presence in the precinct and to provide maintenance services to the Arrows trails.

The full stakeholder engagement report is in the Appendices.

Our GWY people have over fourscore thousand (80,000) years of existence in Gimuy (Cairns) prior to 1876 and are prepared to share our Culture, Knowledge, Custom and Wisdom same as the modern day Professors', Doctors and other learned people within today's society...I see it as a great opportunity for the associated management of this asset and in particular the Pristine Diversity of Mountains, Rainforest, Waterways, Sand and Sea. The only element missing in all this beauty are GWY Traditional inhabitants that the visitors must be given exclusive rights to mingle, learn, enjoy and embrace the depth of Culture on offer.

Elder N. R. Reys (part of submission 23/02/22)

ENGAGEMENT OUTCOMES (CONT'D)

Primary Site Issues

Access, connections and traffic

- / Accessibility to the site is difficult with minimal parking options and minimal areas to turn around on Collins Avenue when searching for a carpark
- / There are too many entry options into the Flecker Gardens and signage is limited, confusing visitors
- / Access to the Visitor Information Centre is not intuitive and opening times do not align with visitor patterns, leaving the cafes to perform that function
- / Pedestrian connectivity between the northern and southern portions of the site is discouraged by a lack of safe pedestrian crossings
- / The pedestrian bridge running between the northern and southern portions of the site is too narrow for the volume of traffic and contemporary standards
- / Connectivity across the Centenary Lakes sites is minimal and there is a sense of disconnection across the site overall
- / General traffic (volume and speed) using Collins Avenue exacerbates this existing disconnection between different areas and takes away from the gardens experience of being a peaceful setting
- / A lack of shaded footpaths on Collins Ave between the nearby cafes and restaurants discourages pedestrian access due to heat

Sustainability

- / Predicted sea level rise will result in salt water inundation over a large part of the southern portion of the site around Centenary Lakes

Culture

- / There is great potential (and desire) to integrate cultural interpretation and engage Gimuy Elders, however currently the site lacks connection with culture

Quality

- / The Gardens cafe site feels tired with amenities requiring upgrading, and lacks colour and art
- / Design of the Visitor Info Centre results in poor shelter during rain and a large number of bird strike deaths (due to the mirrored/ reflective walls)

Management

- / The Tanks Art Centre lacks accessible storage, catering and cleaning facilities, and a lack of suitable lighting limits art displays
- / There is a lack of diverse food offerings within the precinct.
- / Parts of the site are heritage-listed. Approvals will need to be sought for works within and around the Tanks Art Centre and Flecker Gardens
- / Carrying out maintenance works is time consuming due to limited available space in the depot/s. 30% of the primary depot site in Flecker gardens is taken up by the Friends
- / There is a physical disconnect between the Conservatory and the Nursery, making moving plants difficult
- / There is no ability to process green waste on site
- / The tropical Fruit Garden has been neglected and is not currently suitable for education experiences

Safety and security

- / Plant theft in the intensive horticulture areas is a common problem
- / Safety is a concern, particularly in Centenary Lakes
- / Unleashed dogs are a common problem throughout the site, and pose a threat to conservation efforts, particularly the importance of the Centenary Lakes ecosystem as a breeding ground for migratory habitat for birds and other fauna

Community Survey - Favourite Places

Flecker Botanic Gardens

- / Enjoyed spending time in the garden and the quality of the plants
- / A peaceful place to relax
- / Good representation of visitors enjoying the butterflies in the Conservatory

Botanic Gardens Visitor Information Centre

- / The most common response was the popularity of the café and the coffee
- / Access to amenities
- / Good responses to the information displays and staff

Tanks Art Centre

- / The most common responses were the Art Displays and Events

Centenary Lakes

- / Spaces to walk were noted as positives
- / Access to nature, in particular bird life, was also a driver for visitation

Nature Play

- / Creative space for children to play

Community Top Improvement Priorities

- / Signage across the site
- / More activities including educational opportunities and tours
- / General maintenance of the site and preserving the natural environment
- / Increase the connectivity between the areas, including for bikes
- / Parking and access
- / Shaded paths and linkages between the site and Collins Ave
- / Visual amenity of the site
- / Increase perception of safety across the site, in particular Centenary Lakes
- / Management of the existing large trees
- / Usability of Centenary Lakes by improving mosquito and sand fly management
- / Expand the overall area
- / Food and beverage offering, both inside Flecker Gardens and at the Tanks Art Precinct

Respondents Demographic



82.5%
of respondents were
25-64 years old



60%
access the site by car,
followed by walking (20%)



40%
visiting 1-3 times/ month
and 18% at least once/
week



60%
spent less than an
hour at site

BACKGROUND REVIEW - LANDFORM



Lidar survey - 0.25m contour intervals



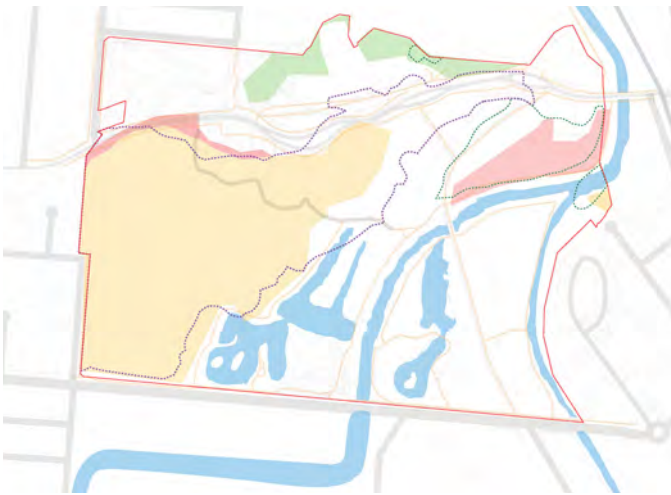
Colours adjusted for elevation where brown is 32m AHD grading to darker blue at 0m



Digital terrain model showing relative lack of elevation on lower part of site

BACKGROUND REVIEW - CRC MAPPING OVERLAYS

Vegetation & Environment

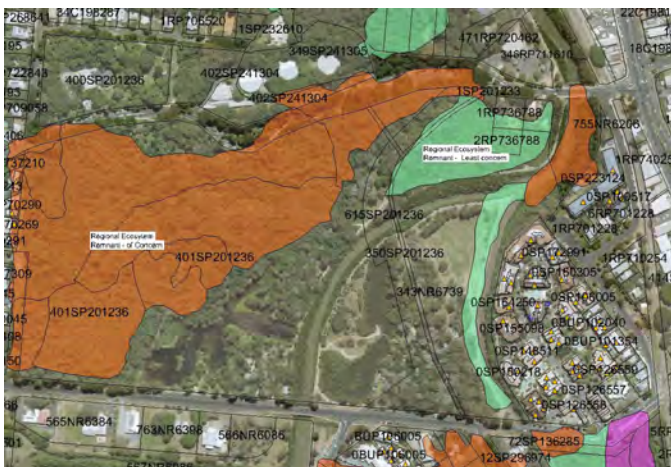


ENVIRONMENT

- CP 2016 Vegetation - High Values
- CP 2016 Vegetation - Moderate Values
- CP 2016 Vegetation - Low Values



Protect Plants Flora Survey

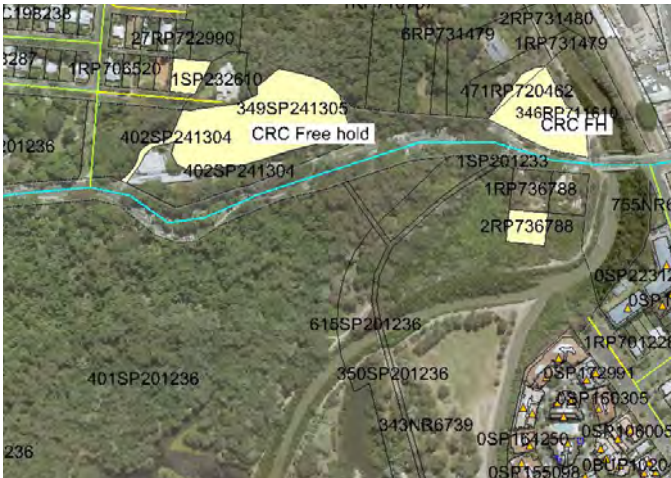


Regional Ecosystems



Matters of State Environmental Significance

Land Tenure, Leases and European Heritage



Freehold Land



Leases



State Heritage listings (European heritage)

Facilities Maintenance and Community Activities



- Playgrounds
- Outdoor Fitness Equipment
- Road Star Ratings
- Parks Star Rating
- 1 Star
- 2 Star
- 3 Star
- 4 Star
- 5 Star
- Stormwater CCTV

Parks Standard of Service - majority of whole site currently has 5 Star Rating - highest level of maintenance



Carnival on Collins Stall layout



Tanks Market Stall layout

BACKGROUND REVIEW - COASTAL MANAGEMENT - SEA WATER INUNDATION



The Yellow areas above show areas vulnerable to erosion or inundation (high tide and storm tide) if sea levels rise by 0.8m by 2100 as predicted, and no adaptation action is taken.

Extract from the *Our Cairns Coast: Adapting for the Future (OCC Strategy)* - an important plan for Cairns Regional Council to better understand current and future coastal hazard risks, how these hazards might impact coastal environments, lifestyle and communities and create a pathway for a sustainable future.

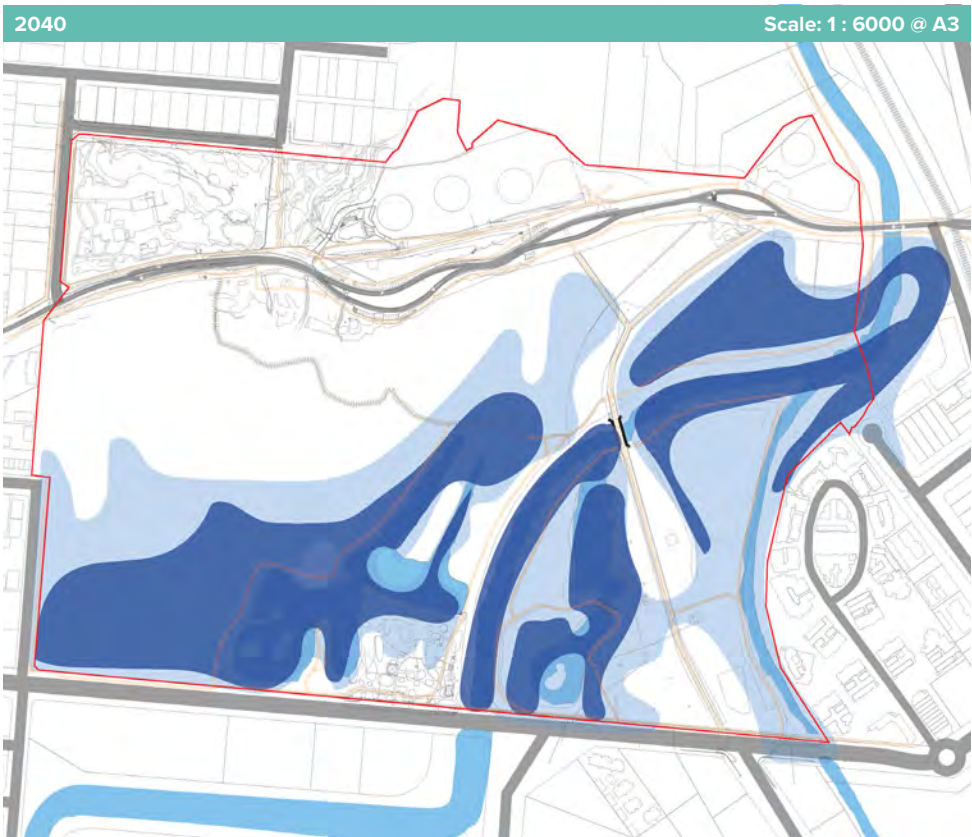
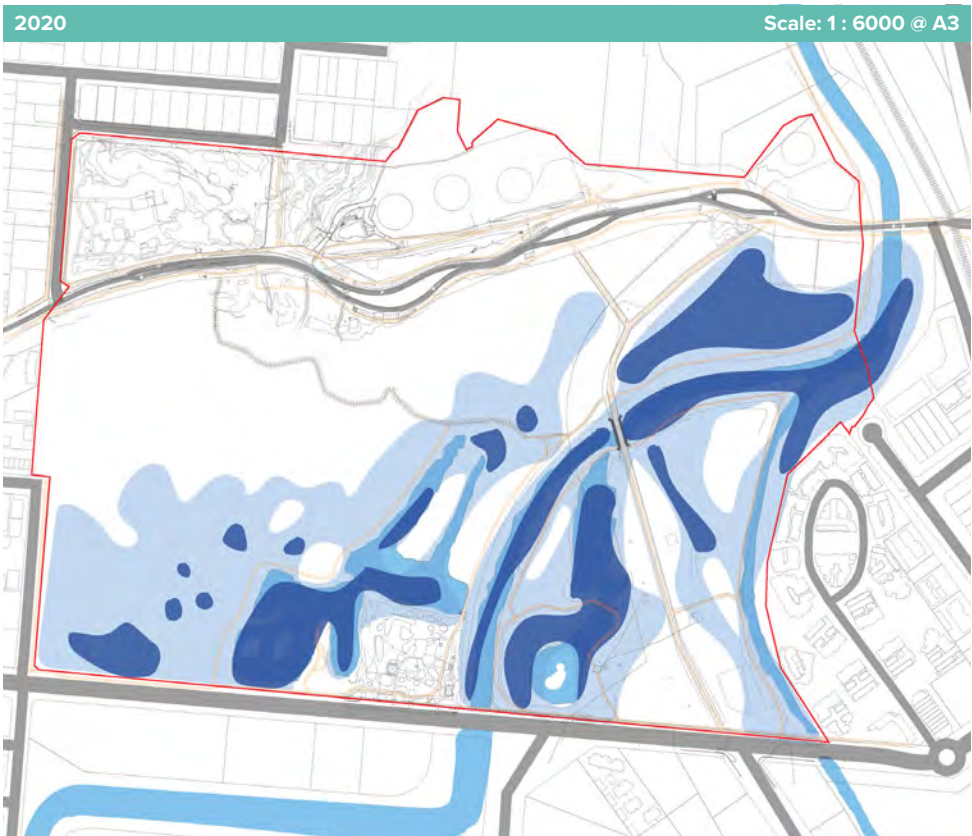
Worldwide climate change is increasingly affecting marine, freshwater and terrestrial ecosystems and ecosystem services, water and food security, settlements and infrastructure, health and wellbeing, and economies and culture, especially through compound stresses and events. The IPCC Sixth Assessment Report Technical Summary (February 2022) identifies that climate risks are appearing faster and will get more severe sooner and impacts will cascade through natural and human systems.

In the Cairns context, local Council has worked with the Queensland Government through the QCoast2100 program to plan for and respond to current and future coastal changes.

The development of *Our Cairns Coast: Adapting for the Future* and the *Coastal Hazards Adaptation Strategy* has helped inform and guide decision-making, planning and responses in managing natural threats to the Cairns region from climate change. The Cairns City Draft Local Adaptation Plan and mapping identifies the Cairns Botanic Gardens and Centenary Lakes as an area vulnerable to inundation if sea levels rise by nearly a metre by 2100, as predicted.

Cairns Regional Council is currently undertaking a review of the Saltwater Creek Catchment, which is due for completion in the 2025/26 financial year.

Refer Appendix A for a comprehensive review of the current global climate change situation and the Cairns context, with implications and key directions for the Cairns Botanic Gardens.



LEGEND

- Existing lakes and waterways
- Area impacted by predicted sea level rise (0-300mm)
- Area impacted by predicted sea level rise (greater than 300mm depth)

The Cairns Coast Strategy was developed to identify current and future (to 2100) hazards along the coast related to storm tide inundation, sea level rise, climate change, and coastal erosion. It aims to inform land use planning, and decision making in the design and management of public infrastructure and assets.

Given the location of Cairns Botanic Garden, the Cairns Coast Strategy is highly relevant to developments on site. The majority of the site is within the Coastal Management District (CMD), indicating that the site will be exposed to coastal hazards and that developments may carry a greater environmental risk. These maps demonstrate the area expected to be impacted by sea water inundation by 2040. Note that it is expected that the area of impact will grow, with much broader areas predicted to be inundated by 2060, and more again by 2080.

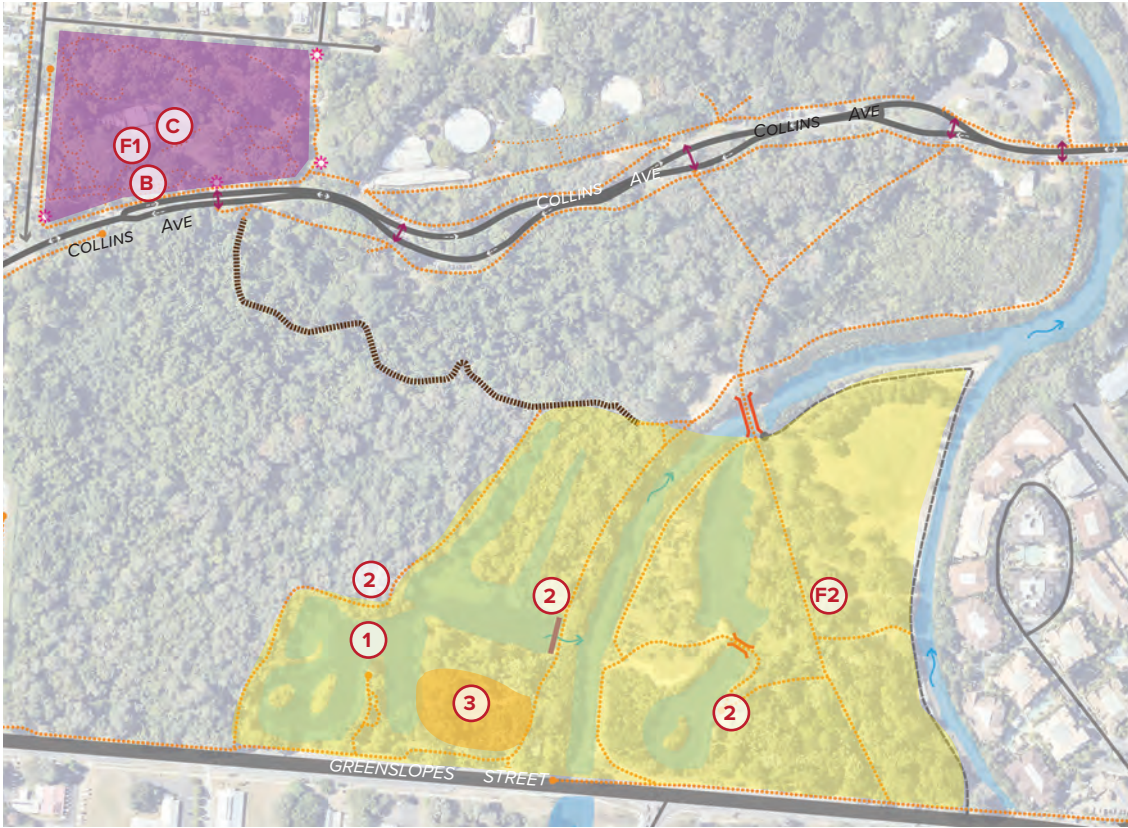
The sea level rise mapping indicates areas that will potentially form part of the inter tidal zone and assumes no adaptation action is undertaken. Consistent with the State’s requirements, the updated mapping includes an allowance of 0.8m sea level rise by the year 2100, due to the impact of climate change. Mapping has been prepared for each planning horizon and is based on present day Highest Astronomical Tide (HAT) plus a sea level rise allowance for each planning horizon out to the year 2100.

Mapping is indicative only and does not represent a shoreline position or where land may be lost to coastal processes.

Sources:

- British Maritime Technologies WBM (2019)
- Sea Level Rise - Cairns City, Cairns Regional Council (2022)
- Our Cairns Coast: Adapting for the Future, Coastal Hazard Adaptation Strategy, Cairns Regional Council, BMT, Ethos Urban, QCoast2100

SITE ASSESSMENT - FLECKER GARDENS AND CENTENARY LAKES - OPPORTUNITIES AND CONSTRAINTS



Flecker Gardens Precinct

- / Flecker Gardens is listed on the Queensland Heritage Register (#602541). The heritage listing is particularly focused on key flora specimens considered likely to be remnants of early plantings, as well as some areas of paving, valued for its high level of craftsmanship. Buildings on site are considered to have minimal visual presence; the Fernery, Orchid House and fence are not considered to be of cultural heritage significance. The other built structures in the Flecker Gardens are not considered to be of high cultural heritage significance
- / Opportunities exist to upgrade infrastructure and facilities on this site, which will require heritage approval; the need to upgrade the whole depot and nursery area is now urgent due to lack of functionality of the current spaces for both maintenance equipment and staff.
- / There is a potential opportunity to incorporate a new "Gardens at Night" space

C Conservatory

A major constraint with the operation of the conservatory is that all accessible surfaces are at ground level, but it is quite a tall structure. This means that around ¾ of the volume is unavailable to for displaying plants. This lack of consideration for maintenance requirements leads to two problems:

- / An inability to make use of most of the space inside the structure
- / An inability to display rare, high value plants out of reach of thieves

Previous plans for a gardens/nursery depot rebuild considered a two-level nursery shed with an elevated walkway that extended into the Conservatory, with a new elevated display area in the NW quarter of the conservatory. Although achievable design-wise, undertaking such a retrofit has a potentially high cost due to structural engineering requirements to achieve the desired outcomes, however the Conservatory will never function to its fullest capability without these fundamental functional requirements being addressed. For this reason a new Accessible Nursery has been proposed which includes a 1st storey Nursery area for light-loving plants as well as secure rare plant display area within the Nursery, visually accessible only for visitors from the pathway.

There are also issues with the ability to display butterflies in the Conservatory, with minimal disturbance to the animals while in pupae form which affects success of hatching. The design of the public entry is also not conducive to retaining butterflies inside the Conservatory; consequently butterflies are no longer displayed in the Conservatory.

Remedial capital works budget has been allocated to the Conservatory structure for the 2026/27 financial year, to extend its life by another 15-20 years.

B Botanic Gardens Cafe

- / The restaurant and toilet blocks are located within Flecker Gardens and within the heritage register boundary (#602541). These buildings are not considered to be of high cultural heritage significance
- / Existing toilet block needs upgrading for current Australian Standard compliance for disability access
- / Poor signage (need to advertise cafe and toilet facilities)
- / Its central Gardens location means people expect its function to include Gardens information as it is better placed and easier to find than the existing Visitor Information Centre. This impacts on the ability of the venue to act as a revenue raising business
- / The cafe area feels tired and lacks colour
- / Security has become an issue: design of bike infrastructure allows access over fences
- / Explore feasibility of demolishing cafe and toilet block buildings and reinstate these areas into the Gardens

Friends

- F1** / Relocate Friends from the existing red brick Administration Building to the existing Visitor Information Centre to allow development of the new Depot and Nursery precinct.
- / The Friends do not want to relocate from the red brick Administration Building, however their presence on-site is minimal. Due to future saltwater inundation of the Centenary Lakes area, the available space for the Depot in Flecker Gardens (including the red brick Administration Building area) is of high value.
- / A complete renovation of the existing red brick Administration Building (not heritage listed) is required to be able to provide of a fit-for-purpose Depot/ Nursery Administration-focussed building
- F2** / Three large plant sales are held in the red brick Administration Building each year
- / The Friends sell their plants weekly from the existing shed in the Centenary Lakes area

Centenary Lakes Precinct

- / Improve maintenance options for mud and weed control
- / Improve management of mosquitoes
- 1** / Lotus Plants: Popular attraction however long term not viable due to sea level rise and salt water inundation in this area
- 2** / The Centenary Lakes are home to a number of species and provide important permanent and migratory habitat. The combination of salt and fresh water habitats in close proximity provides high flora and fauna biodiversity, including significant species. The Lakes have been published in a number of books for bird life and are an ecotourism hot spot both nationally and internationally
 - Opportunity to increase awareness and educational values across the site via conservation efforts and interpretation
 - Opportunity to provide bird focused interpretation and encourage quiet enjoyment and observation of the space
 - Opportunity to increase breeding of flora and fauna (particularly birds) by improved compliance re: dogs prohibited in the area (refer Compliance & Security Concerns for potential avenues to achieve this).
- Improving biodiversity assists in reducing weed succession and assists in balancing ecosystem (i.e. mosquitoes)

Note. Long term opportunities for Centenary Lakes area are constrained by future sea level rises and projects in this area should remain conservative, focusing on habitat rather than infrastructure where possible

3 Nature Play

- / Mosquitoes and sand flies an issue
- / Safety concerns around main road and lake proximity to play area
- / Opportunities to increase picnic facilities, thereby increasing visitor presence (enhancing passive supervision opportunities)
- / Ongoing improvements have been bugeted for this area to ensure compliance

SITE ASSESSMENT - VISITOR INFORMATION CENTRE AND TANKS ARTS PRECINCT - OPPORTUNITIES AND CONSTRAINTS



Tanks Arts Precinct

Visitor Information Centre Precinct

- / Architectural design of newly developed building includes mirrored/ reflective external cladding which is unwelcoming and hard as it reflects heat, light and sun rays directly onto pedestrians
- / Mirrored design of exterior walls have lead to ongoing large numbers of bird deaths and injuries due to birds flying into the reflective walls
- / The inward sloped roof underside over the external amphitheatre space drains water directly onto visitors below which limits its usability especially in the wet season
- / Opportunity to address both problems through the addition of a vine covered freestanding pergola structure at the building face on west side and other architectural improvements to address design functionality issues
- / Location is not intuitive for visitors arriving and looking for the Visitor Centre (tucked away on narrow walkway between buildings off road and not clearly visible)
- 3 / Opportunity to enhance connectivity between Visitor Centre/ Tanks Arts buildings and Flecker Gardens/ event space at east end of Flecker Gardens

Tanks Arts Offices

- / The building was originally designed to provide space for Botanic Gardens uses including housing the Friends, Curator and Manager's offices and Visitor Information Centre
- / The entire southern building is now being entirely used for administration offices for the Tanks Arts Precinct
- / Investigate opportunities to provide staff parking behind the building (Collins Ave side) to free up visitor parking elsewhere, currently being used by staff
- / Investigate opportunities for other uses for the northern building aligned with stakeholder requirements

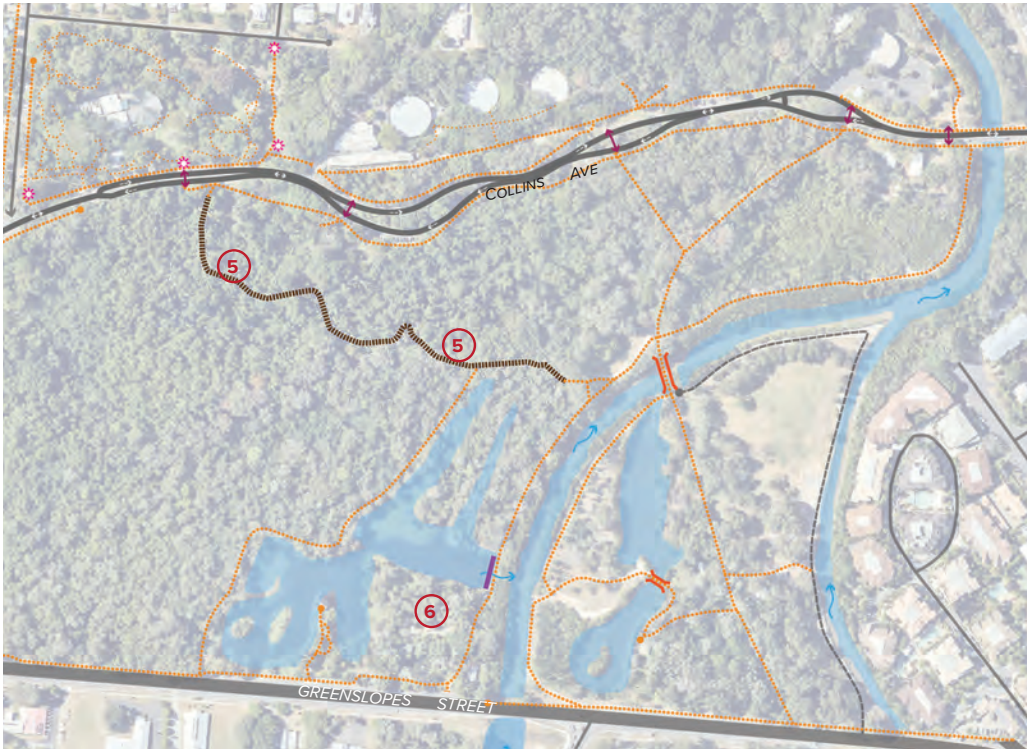
4 Tank Sixty-Four Cafe

- / Privately operated
- / Limited parking (and available parking is regularly occupied by staff, and by maintenance once a month, see parking suggestion above)
- / Steel roof causes rain to enter the dining area (refer pergola suggestion above)
- / Also acting as an information centre due to Visitor Centre opening hours not being aligned with visitor use patterns
- / Investigate potential opportunity to develop Tank Sixty-Four Cafe into high end restaurant to encourage night use, depending on further review of site food and beverage offerings.

Tank 3 - Arts Centre

- / Limited opportunities to display concurrent art exhibitions due to poor lighting. Opportunity to improve visitor cultural experiences and night time activity by improving this
- / Covered by heritage listing - Opportunity to provide interpretation on Heritage themes (5.3 Moving goods, people and information, using rail; 7.6 Maintaining order, defending the country; Pacific war effort
- / Limited suitable and readily accessible storage options on site, creating congestion during bump-in and bump-out times. Consider construction/re purposing of existing facilities for accessible storage options
- / Lack of drinking water and clean up facilities. Consider construction of catering and cleaning facilities
- / Limited seating outside the space
- / Old fuel lines cause some oil leakage during heavy rain and king tide events. Opportunity to improve environmental impact by cleaning out fuel lines

SITE ASSESSMENT - ENVIRONMENTAL ISSUES, SERVICES



Environmental Issues

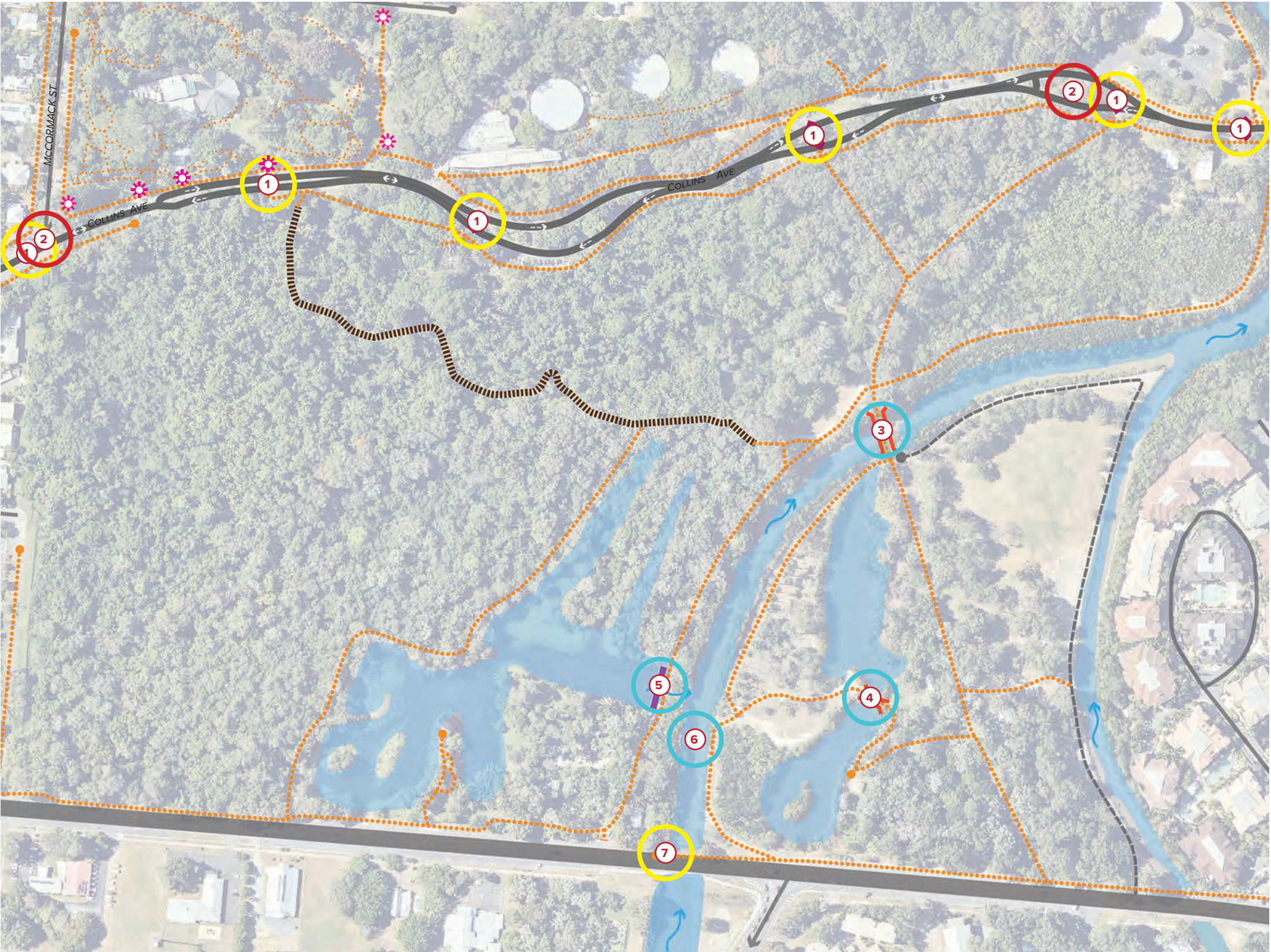
Construction related environmental incidents:

- 5 / boardwalk construction to the north of the lakes resulted in the death of a large number of established trees.
- 6 / Nature play construction resulted in the death of a number of large roosting trees. Future construction activities must be tree-sensitive and provide adequate root zone protection

Services

- / Upgrade water and sewage (with consideration to use of recycled water)
- / Opportunity to provide Climate Change and environmental sustainability awareness interpretation

SITE ASSESSMENT - ACCESS & CIRCULATION



- Access and Circulation**
- Collins Avenue (white arrows indicate traffic direction)
- Speed and traffic patterns pose concerns for bird life. Opportunity to reduce vehicle speed along Collins Avenue, discouraging non-gardens traffic to improve both bird safety and pedestrian connectivity between the northern and southern portions of the site
- ① Pedestrian infrastructure - Opportunity to implement raised pedestrian crossings to further reduce vehicle speed and discourage non-garden traffic, improving bird safety and pedestrian connectivity
- ② Road infrastructure - Opportunity to improve access to the site (e.g. install roundabout/ turn around loop) to facilitate turning when looking for parking (currently requires people to turn right from Collins Ave into McCormack St and do a U-turn, then turn left along Collins Ave)
- Bridge infrastructure**
- ③ Current north to south footbridge is not wide enough for traffic volume - opportunity to widen and provide Emergency Services access
- ④ Existing footbridge requires regular inspections, maintenance and upgrades as necessary
- ⑤ Bridge and weir infrastructure needs upgrading
- ⑥ Investigate opportunity to provide cross-creek bridge linkage(s) within the Gardens to improve internal connectivity, provide circuits within the gardens (e.g. the Indigenous trail) and improve user experiences
- ⑦ Narrow footpath on busy road provides the only link between areas within the Gardens and provides poor amenity - consider providing internal footbridge across Saltwater Creek (refer 6 above) to better connect areas of Centenary Lakes
- Footpaths
- ✱ Flecker Gardens entry points

BACKGROUND AND ENGAGEMENT REVIEW - PRIORITY AREAS

Priority Areas

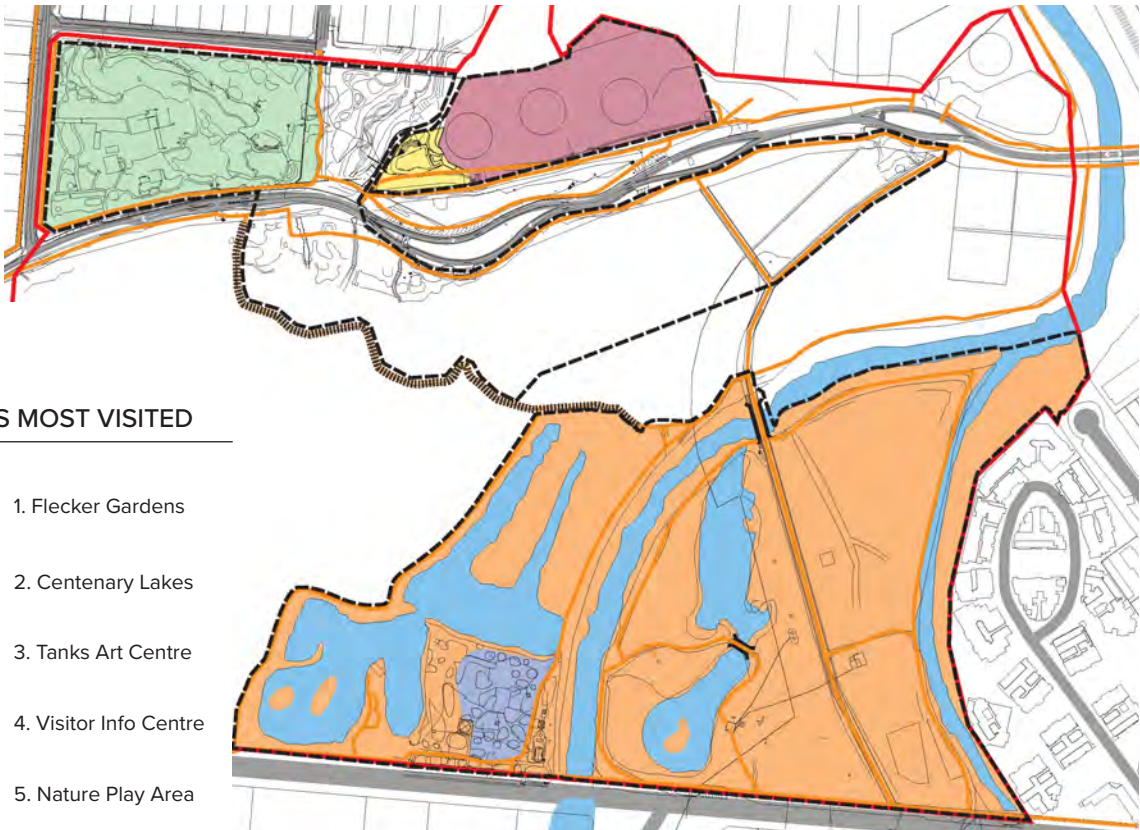
Engagement with community and stakeholders revealed areas of the gardens most used by visitors include: Flecker Gardens, Centenary Lakes, Tanks Art Centre, Visitor Info Centre, and the Nature Play Area. These areas are attractive as they feature elements that are limited in other areas of the gardens including:

- / High value amenity horticulture
- / Culture, art and event spaces
- / Markets (at selected times)
- / Information
- / Food and Facilities
- / Play

The remainder of the gardens is currently limited by dense vegetation and minimal attractions.

AREAS MOST VISITED

- 1. Flecker Gardens
- 2. Centenary Lakes
- 3. Tanks Art Centre
- 4. Visitor Info Centre
- 5. Nature Play Area

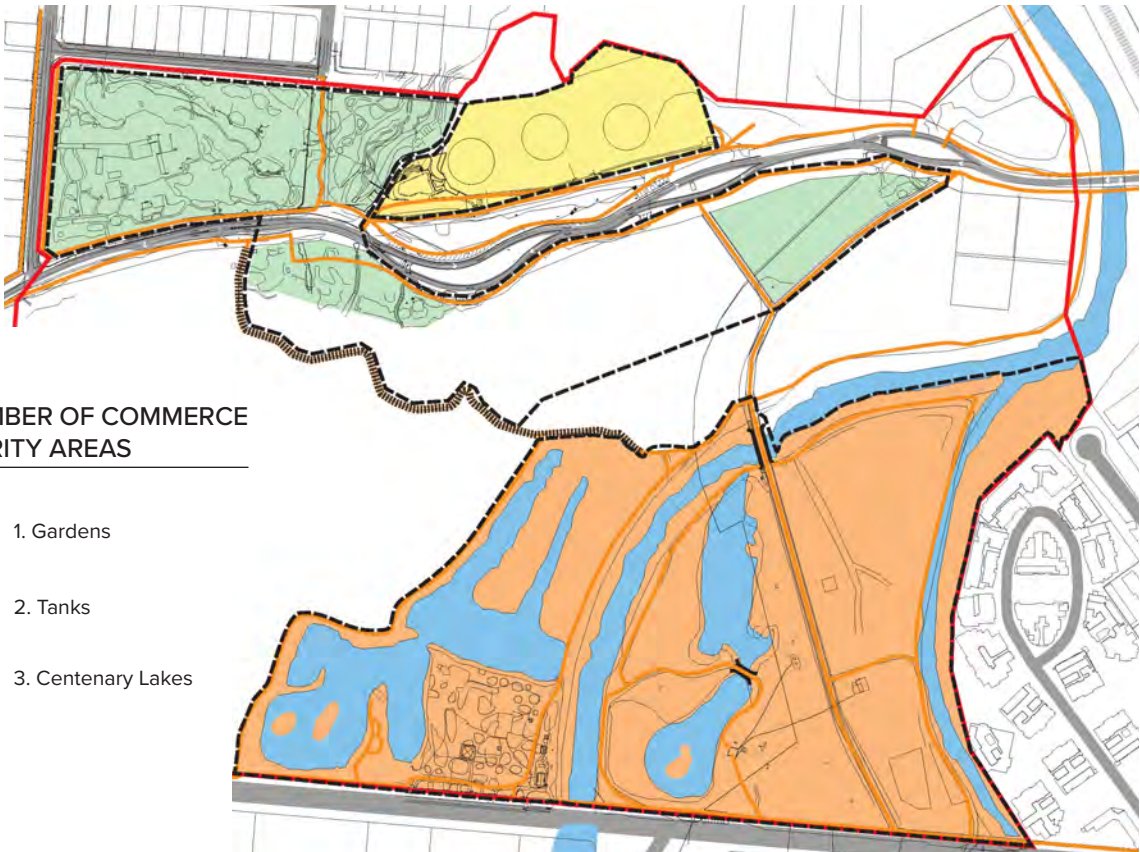


There is a desire on the part of the Chamber of Commerce to see the gardens revitalised and better integrated and connected with the nearby CBD.

Priority areas identified by the Chamber included the Gardens, followed by the Tanks, and Centenary Lakes, aligning with visitor use patterns identified by survey respondents (see map above).

CHAMBER OF COMMERCE PRIORITY AREAS

- 1. Gardens
- 2. Tanks
- 3. Centenary Lakes

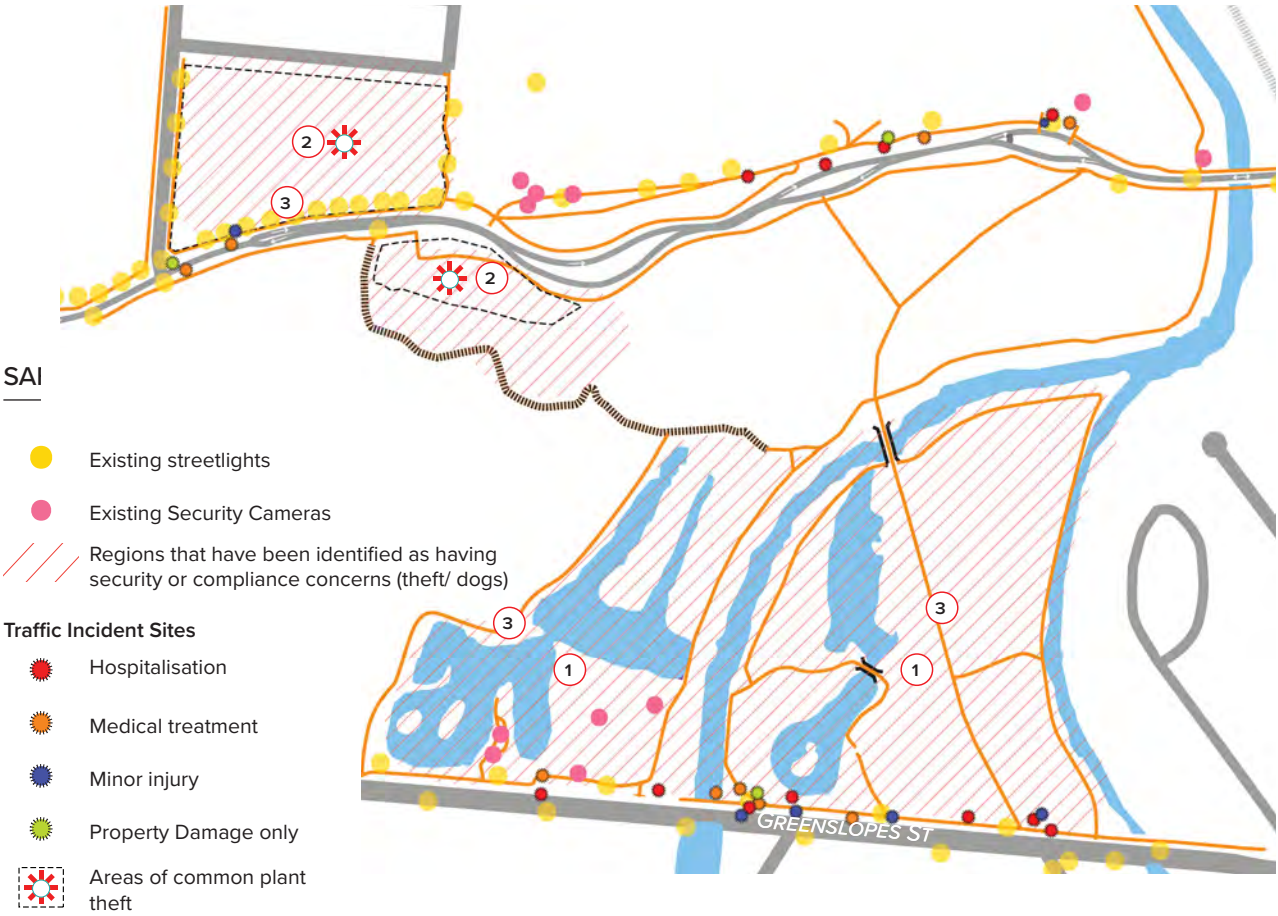


LEGEND - GENERAL

- CBG Boundary
- Roads - size denotes hierarchy
- Pedestrian Paths
- Boardwalk

BACKGROUND REVIEW - SAFETY & SECURITY ISSUES

Safety & Security Considerations



Compliance & Security Concerns

- 1 / While the engagement report indicated a desire to improve perception of security across the whole site, Centenary Lakes was noted as being of particular concern
- 2 / Significant plant theft occurs in the intensive horticulture displays (notably Flecker and Fitzalan gardens)
 - Opportunity to provide security fencing to conserve high value horticulture displays
- 3 / Compliance concerns around dog control: None of the site is a dog-off-leash zone. Issues with visitors not complying over whole site, however in particular Centenary Lakes.

Engagement identified safety and security as high priority concerns of both site users and Botanic Gardens Staff. Safety issues included:

- / Criminal activity (theft of high value plants)
- / Road and water safety at the Nature Play area which is located in close proximity to open water and a high frequency Traffic Incident area along Greenslopes Street (see above)
- / Perception of safety in particular at Centenary Lakes. Centenary Lakes includes minimal night time lighting and has high vegetation density.

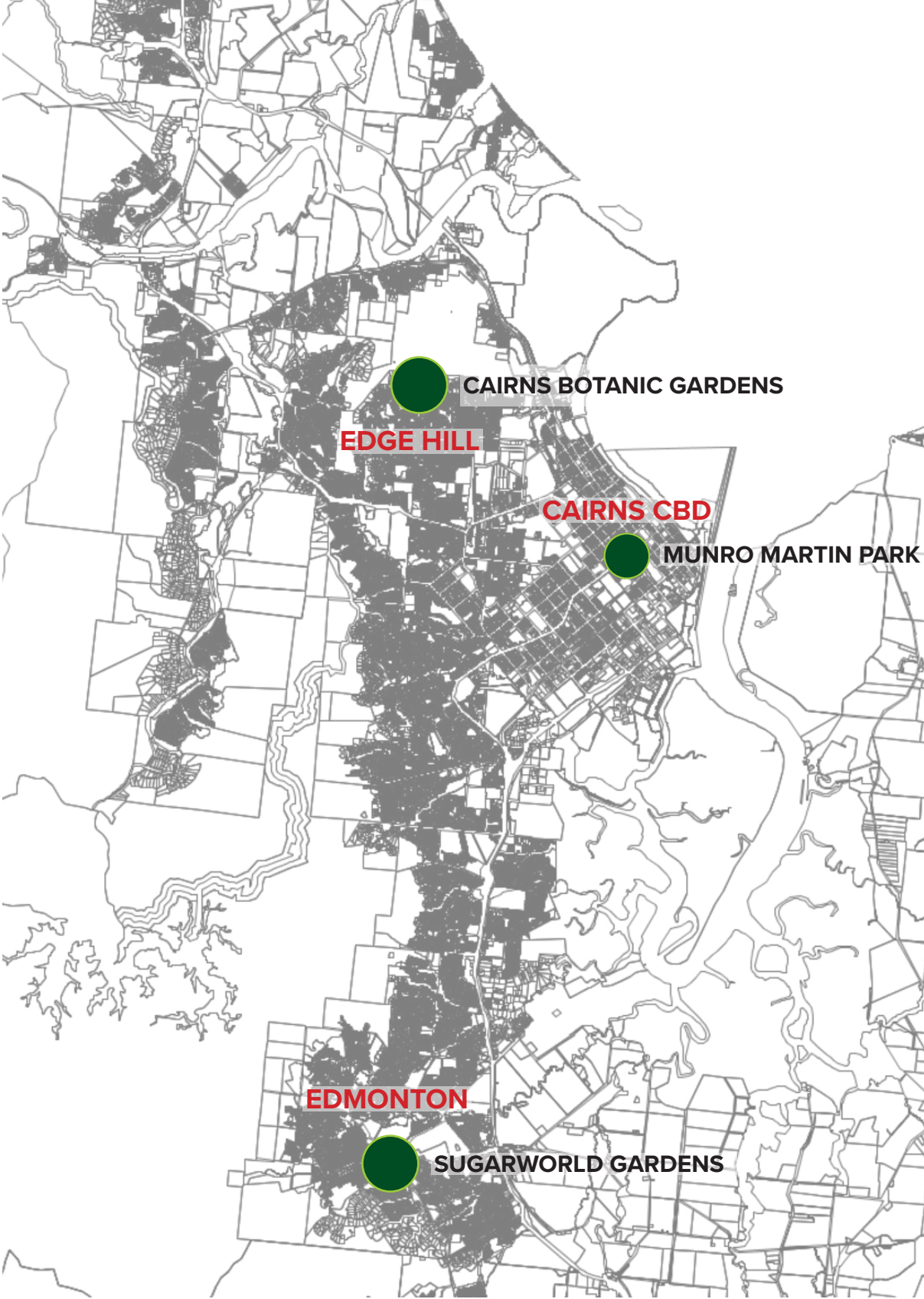
There is broad consensus across literature that both limited lighting and dense vegetation contribute to lower park use, particularly in female park users due to a perception of high risk, a perception enhanced if the area is not utilised by perceived allies (observers to help or witness potential crime). Improving sense of safety in the park will work towards Chamber of Commerce goals to encourage greater site use.

To preserve conservation values, it is not desirable to decrease vegetation density. Instead, approaches to enhance perception of safety across the park include increasing CCTV surveillance, selectively increasing lighting on key paths/ at key locations (including implementing the lighting strategy identified in the 2005 Masterplan along the north to south pedestrian path), and increasing positive night time use of the space in key locations (offering night time events or dining experiences) to decrease opportunities for criminal activity and anti-social behaviour.

Sources:

- / Lis and Iwankowski (2021)
- / Rahm, Sternudd and Johansson (2020)

'BOTANIC AREAS' OF CAIRNS - FUTURE DIRECTIONS



THE CAIRNS BOTANIC GARDENS, WHICH CURRENTLY INCLUDES THE CENTENARY LAKES PRECINCT, FACES SIGNIFICANT CHALLENGES IN FUTURE DUE TO ONGOING CLIMATE CHANGE EFFECTS WITH COASTAL INUNDATION PREDICTED TO AFFECT LARGE PARTS OF THE SITE BY 2100.

Further details relating to Climate Change driven inundation are outlined elsewhere in this document. This inundation raises questions about the extent to which further resources should be invested in the Centenary Lakes part of the precinct, and for what period of time into the future.

The city of Cairns has three “Botanic Areas”. The Curator Botanic Areas is Curator for all three precincts, but garden staff only work at one of each of the three areas.

These areas are the main Cairns Botanic Gardens, Sugarworld Gardens which sits within the broader Sugarworld Parklands, and Munro Martin Park.

There is considerable scope to enhance Sugarworld Gardens, as this site appears to be largely safe from coastal management predicted effects of climate change.

Munro Martin Park is primarily an events space, so there is little scope to enhance it as a botanic area.

As a long term strategy, it is proposed that Council works towards having a series of botanic areas throughout the LGA, starting with Sugarworld, and eventually bring one or more other public spaces into the botanic areas classification.

The whole Local Government Area should also be explored for potential appropriate decentralised locations for different Cairns sister city's Friendship Gardens.

This approach has multiple benefits which:

- / Complement the “City In A Garden” theme for the LGA
- / Provide opportunities for different botanic themes, character and focus in different Botanic Areas
- / Align with Council's initiatives that build community resilience to disasters and emergencies, by spreading risk across different Gardens
- / Provide a long term fiscal and land management strategy for the main Cairns Botanic Gardens which includes a “sunset policy” on the management of the Centenary Lakes part of the precinct
- / Allows wise investment into other areas that are safe to develop for the long term (considering also long time frames required for feature plants gardens to reach maturity)
- / Allows Council to de-centralise the Friendship gardens (i.e. Gardens themed by Cairns' sister city relationships), as they cannot all be accommodated in the current Cairns Botanic Gardens precinct if they are eventually developed

This proposed strategy means that in the long term, although the main Cairns Botanic Gardens reduces in size, the overall Botanic Gardens offering for Cairns will be retained or increase.

The focus of this Cairns Botanic Gardens Masterplan Review is the main Botanic Gardens located in Edge Hill.

Providing further details on the above approach is not part of the scope of this review.

VISION, GUIDING PRINCIPLES AND CONCEPTS

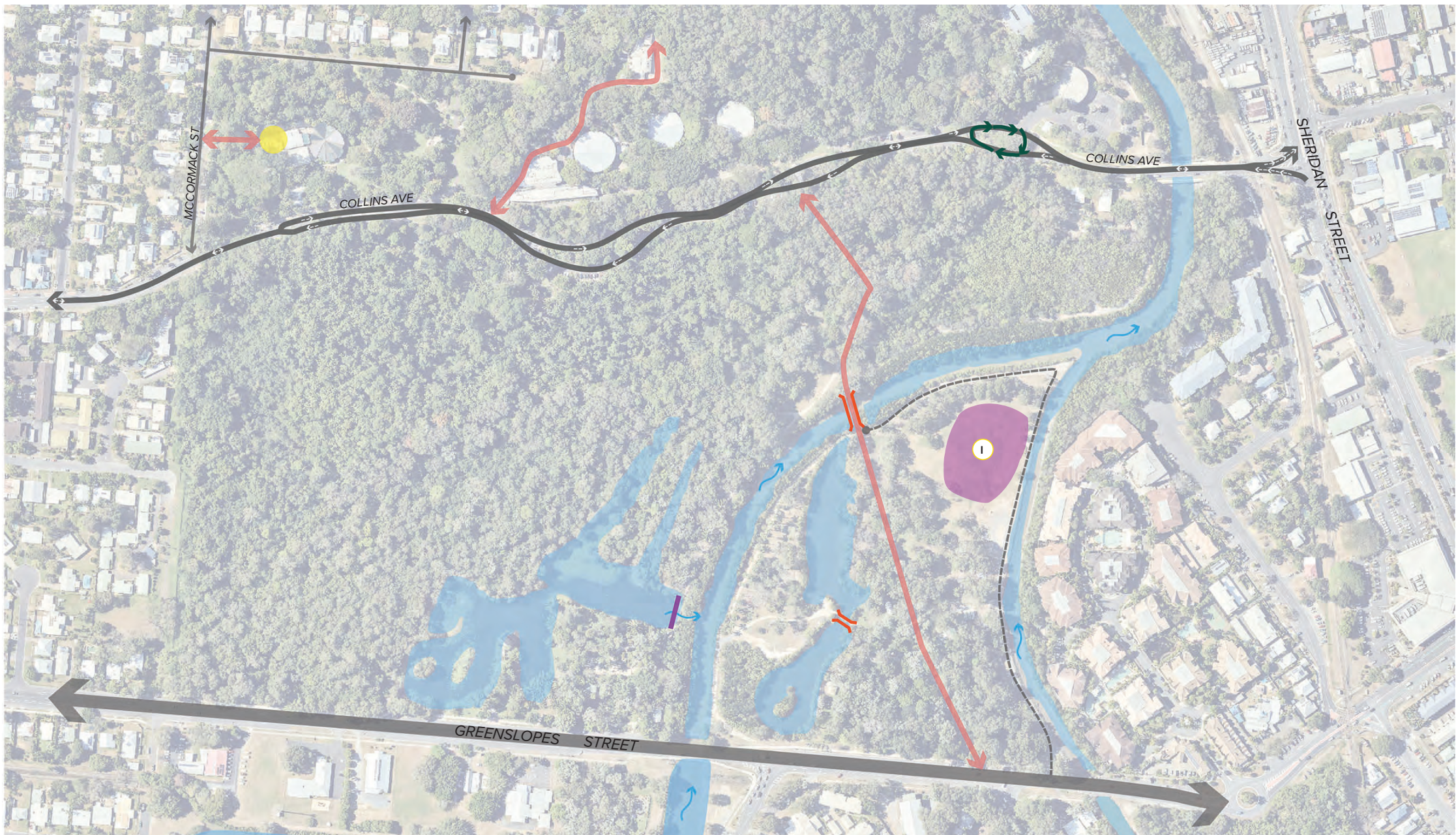
CAIRNS BOTANIC GARDENS PRECINCT - VISION & GUIDING PRINCIPLES

- / Establish Cairns Botanic Gardens as one of Australia's "elite" botanic gardens, and a premier regional-level cultural and environmental tourist destination that meets the current cultural, environmental, social and recreation needs of the wider community and visitors
- / Make use of a unique and diverse collection of native and exotic tropical plants to educate visitors about tropical environments, plants, and people
- / Continue to develop the CBG as an integrated community facility to preserve, cultivate and enhance the environment, horticulture, artistic and cultural lifestyles and experiences in the region which establishes a strong 'sense of place' for Cairns through wide recognition and acknowledgment
- / Enhance the visitor experience by creating new and exciting opportunities for nature-based passive recreation as well cultural, artistic, entertainment and social experiences and opportunities in the tanks and gardens precincts, as part of the city-wide open space and recreation network
- / Provide visitors of all ages, abilities, cultures and communities with interactive, educational and engaging experiences through installation of cohesive set of way finding, and interpretation infrastructure including focused plant displays
- / Provide inclusive access wherever possible and practical throughout the Gardens
- / Adapt to and mitigate the impacts of climate change by reshaping certain areas over time to transform them into alternative thriving habitats for plants and wildlife
- / Continue the protection of the vast range of natural habitats and the wildlife the gardens and lakes support
- / Improve safety, security and CPTED throughout the precinct so that visitors can have a carefree and enjoyable experience
- / Provide new and suitable infrastructure and facilities that ensure management, maintenance and operations can be undertaken in an efficient and sustainable manner, that minimises waste and makes best use of limited resources
- / Engage with Traditional Owners of the gardens precinct to embed and enhance the current cultural experience of the site through integration of First Nations people's culture including art, stories, plantings, information and on site experiences

Vision:

The Botanic Gardens and Centenary Lakes will offer a range of iconic and engaging cultural, natural, artistic, scientific and recreational experiences within its significant tropical botanic collection, with the Tanks Precinct contributing to Cairns as the 'arts and culture capital' of Northern Australia.

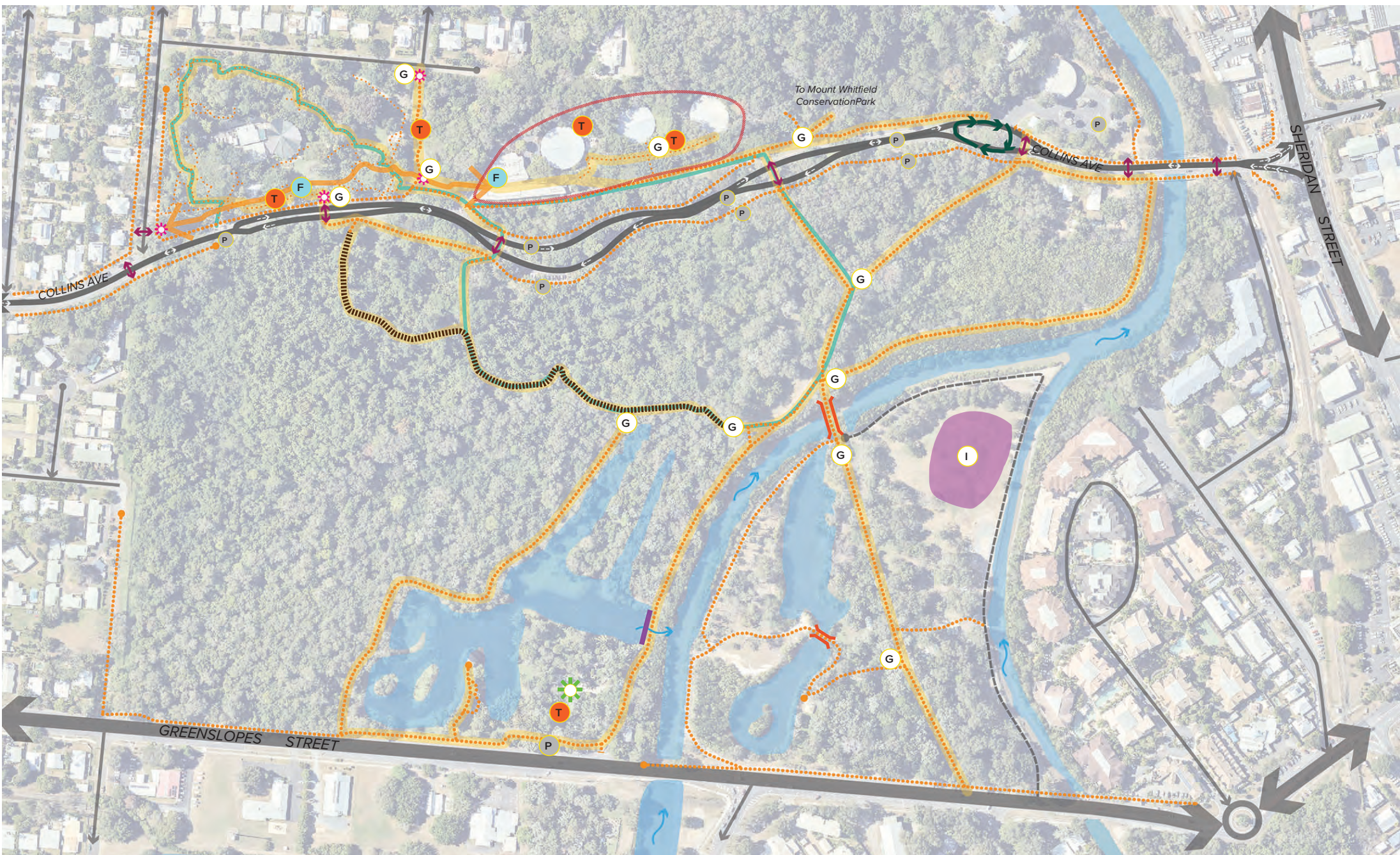




LEGEND

- Surrounding roads: size denotes hierarchy
- Collins Avenue (white arrows indicate traffic direction)
- Dirt road (staff vehicle access)
- Build new wider bridge over Saltwater Creek to take light commercial BG maintenance vehicles and comply with requirements for pedestrians and bikes
- Waterflow
- Weir
- Service Access roads
- Gardens Gateway - Precinct Entry Experience (east end turn-around exists, but needs Gateway element)
- Flecker Depot
- Area of interest - potential Traditional Owner Nursery for development by others subject to CRC approval

CONCEPT DESIGNS - VISITOR CIRCULATION & SERVICES - SHORT TO MEDIUM TERM STRATEGY



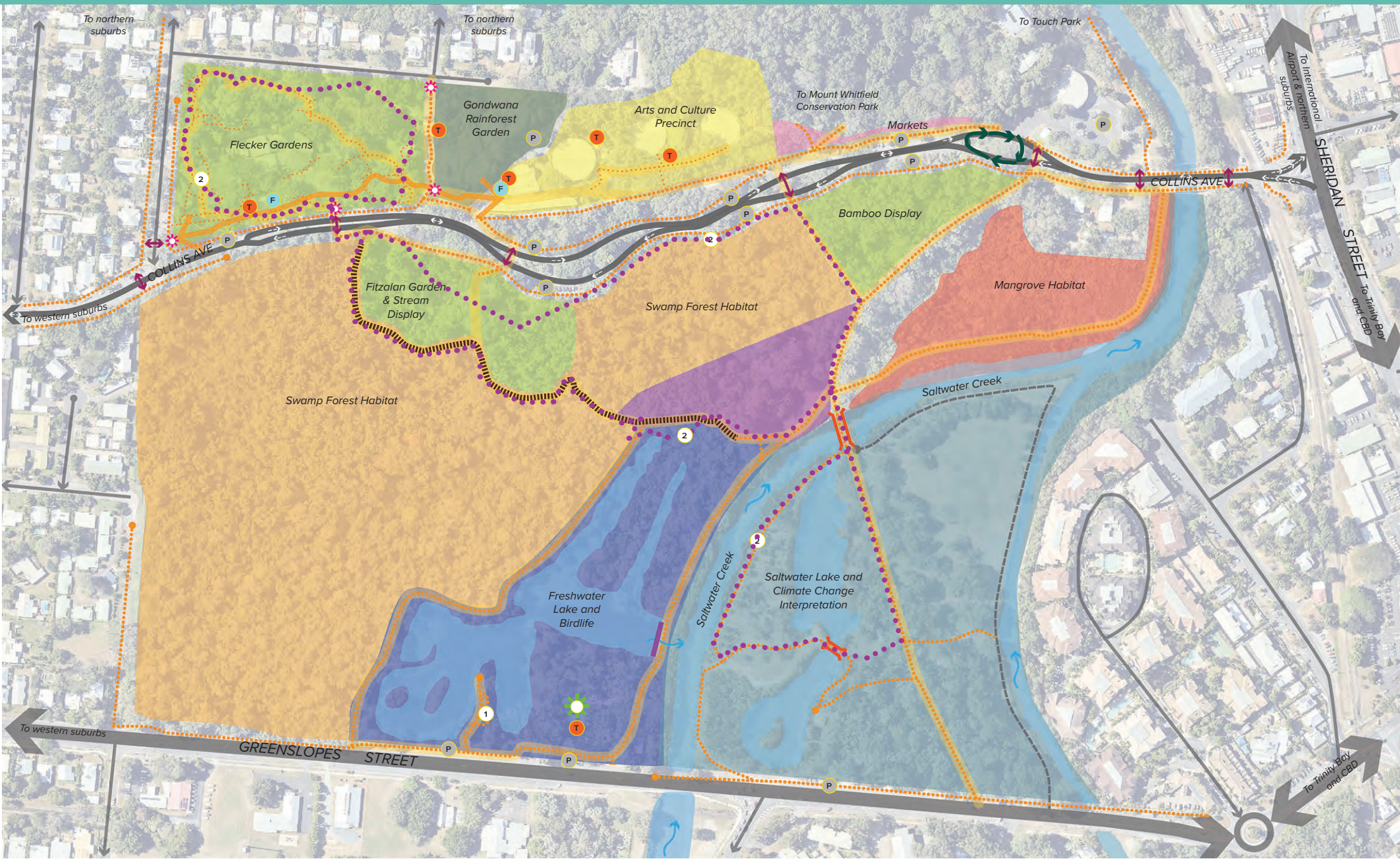
LEGEND - CONNECTIVITY

- Existing**
- Roads
 - Collins Avenue (white arrows indicate traffic direction)
 - Dirt track (staff vehicle access)
 - Pedestrian paths
 - Boardwalk through Swamp Forest
 - Gated entry: open to public and lockable after hours
- Proposed**
- New raised pedestrian crossings in locations of existing to help slow traffic and improve visitor amenity
 - Primary Gardens paths
 - Proposed Gardens Spine Walk
 - Proposed Habitat Loop
 - Gardens Gateway - Precinct Entry Experience (east end turn-around exists, but needs Gateway element)

LEGEND - INFRASTRUCTURE & SITE CONSIDERATIONS

- Existing**
- Bridge
 - Waterflow
 - Weir
 - Toilets
 - Food and dining options
 - Parking
 - Existing Nature Play Playground
 - Arts and Culture Precinct
- Proposed**
- Gateways, shelter & interpretation
 - Area of interest - potential for development by others subject to CRC approval

CONCEPT DESIGNS - VISITOR EXPERIENCES & INTERPRETATION - SHORT TO MEDIUM TERM STRATEGY



LEGEND - EXISTING CONNECTIVITY & INFRASTRUCTURE

- Roads
- Collins Avenue (white arrows indicate traffic direction)
- Dirt track (staff vehicle access)
- Pedestrian paths
- Boardwalk
- Pedestrian road crossings
- Bridge - new wider vehicle maintenance bridge over Saltwater Creek; existing saltwater lake bridge
- Weir
- Public Toilets (existing)
- Food and dining options
- Parking
- Playground

LEGEND - VISITOR EXPERIENCES & INTERPRETATION

- ### Culture & Amenity
- Botanic Gardens Focused Precinct - Intensive Amenity Horticulture Displays
 - Arts and Culture Precinct
 - Markets
 - Chinese Friendship Garden
 - Ethnobotany/ First Nations Cultural Knowledge Trail - explore opportunities for cultural improvements and experiences, in consultation with Traditional Owners
- ### Broad Natural Habitat Displays
- Gondwana Rainforest Garden
 - Swamp Forest Habitat
 - Cape York habitats
 - Freshwater Lake & Birdlife
 - Saltwater Lake: climate change and sea level rise interpretation
 - Mangrove Habitat

SHORT TERM STRATEGY



LONG TERM STRATEGY - MANAGED RETREAT



KEY PRINCIPLES

- » Upgrade existing facilities within Flecker Gardens (refer proposed concept plan for detail)
- » Provide an Infrastructure Managed Retreat Strategy for climate change affected areas on site.

Permanent salt water inundation of about two thirds of the low lying/ Centenary Lakes precinct in future (due to climate change and associated sea level rise) will require a managed retreat strategy for infrastructure and facilities from this area.

The loss of this area will require alternative unaffected locations to be found for Botanic Gardens Maintenance and Management infrastructure elsewhere on site.

LEGEND

- 1 Flecker Gardens: Short and Long Term - Primary depot**
 - » Upgraded location within Flecker Gardens
 - » Upgrade red brick Administration Building - location for Supervisor, staff offices, kitchen and meeting room/s
 - » All of staff lunch area (central gathering point)
 - » Conservatory Horticulture Nursery with small 'Rare Plant' display
 - » Two storey Nursery building with
 - » Air conditioned staff amenities including shower and toilets
 - » Volunteer workspace and plant propagation area
 - » Minor storage area
 - » Security Fences
 - » CCTV

- 2 Existing Saltwater Lakes sub-depot**
 - » Regrade area around existing depot
 - » Increase storage sheds (equipment, materials and tools) and provide larger storage area
 - » Location to store and repurpose green waste (e.g. mulch)
 - » All new facilities to be relocatable
 - » Maintenance vehicles
 - » Managed retreat in future
 - » ed

Team Locations

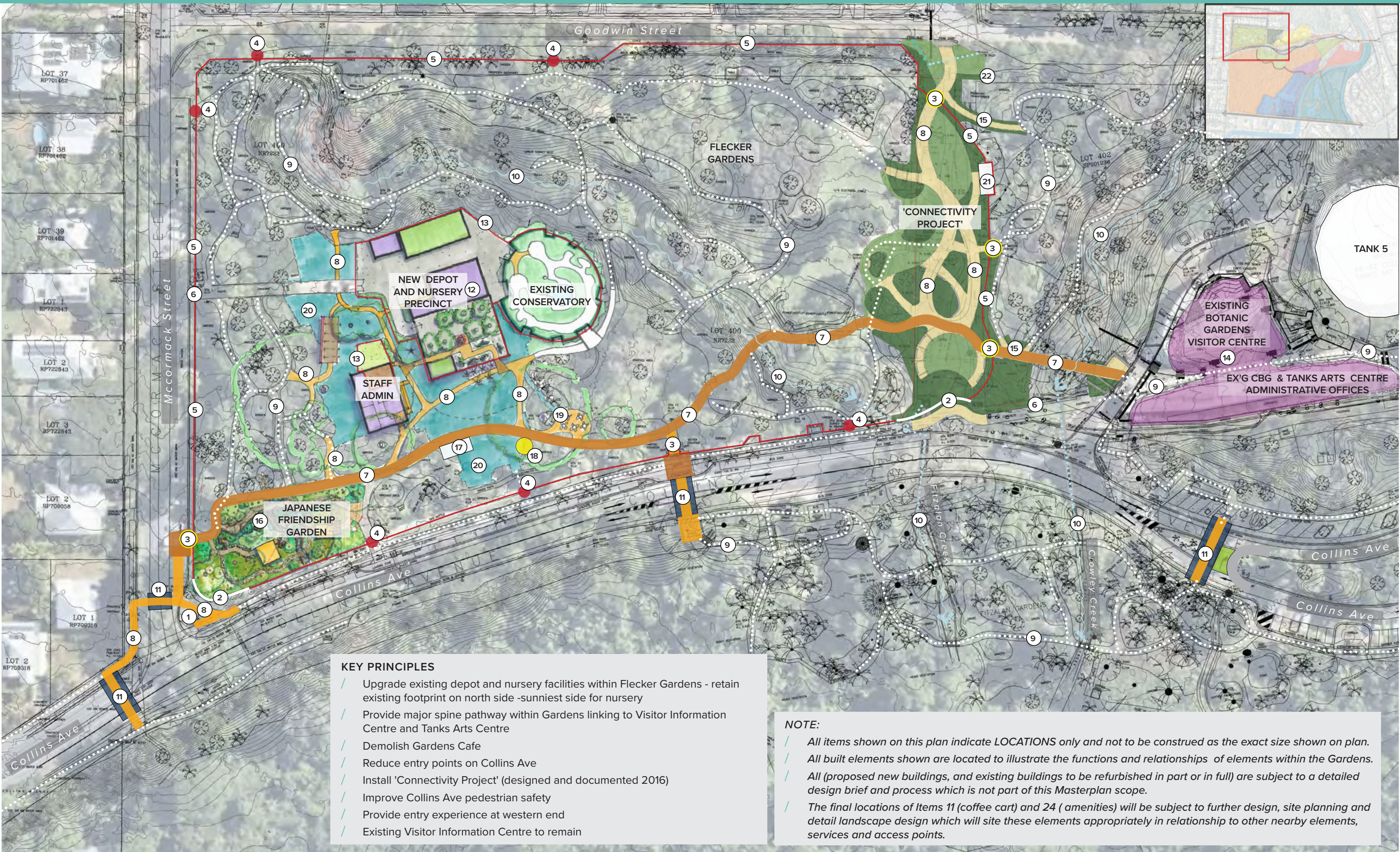
- 1 Flecker Gardens and Nursery Teams**
- 2 Fitzalan Gardens Team and Centenary Lakes Team**
- 3 Traditional Owner Nursery (by T.O.s)**

- Extent of areas predicted to be affected by long term inundation**
- New bridge access - allows for**
 - » Maintenance vehicle access for maintenance efficiencies
 - » Improved pedestrian and cycle access in accordance with current Australian Standard requirements

CONCEPT MASTERPLAN - FLECKER GARDENS AREA

SITE CONCEPT PLAN

Scale: 1 : 1000 @ A3

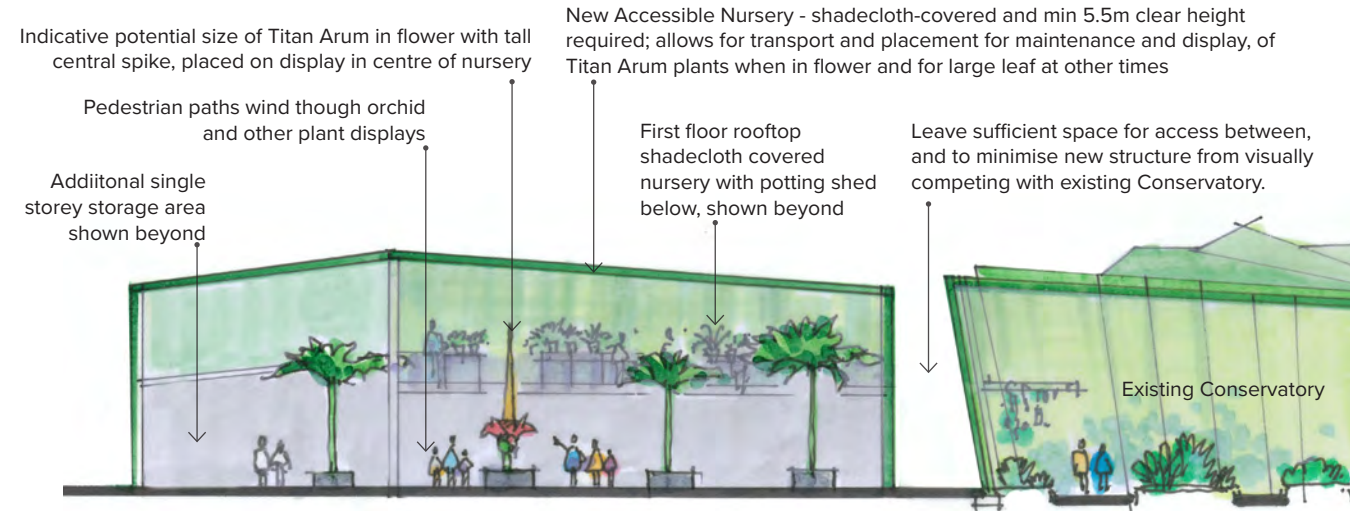


LEGEND

- ① Western Gardens Entry Experience - install feature planting and landscaping on corner where large tree removed, to indicate start of Gardens Precinct
- ② New Gardens feature entry sign walls
- ③ Pedestrian gated entries with feature gates and paving
- ④ Existing entries to be permanently locked/closed
- ⑤ Boundary fence (2.4m black presspoint visually permeable fence) recently upgraded and made pig-proof/ to be installed as part of Connectivity Project
- ⑥ Existing depot/ nursery vehicle access retained
- ⑦ New primary spine pathway through Gardens
- ⑧ New other pathways as part of Nursery and Depot upgrade (conceptual only), Connectivity Project (fully designed and documented 2016) and western pedestrian safety and amenity improvements
- ⑨ Existing paths
- ⑩ Existing waterways
- ⑪ Improve pedestrian safety by installing raised crossings to slow traffic; provide minor kerb realignments as required
- ⑫ Redesigned Depot and Nursery Operations Precinct - refer Functional Layout Concept Plan this page. The Depot will contain maintenance equipment storage for Flecker Gardens field team only; the Nursery (including plant growth areas, operational areas and materials storage), will also accommodate most vehicle parking. Curator and Interpretation Officer, and the Friends of the Gardens will be relocated to the existing Visitor Centre. All other staff to remain at the Depot site and will be accommodated in an upgraded red brick Staff Administration building. The existing cafe, public toilet and non-heritage elements of carpenter's shed to be demolished. A horticulture Accessible Nursery will provide space for Titan Arums in all life stages, will allow visitors to have 'behind the scenes' viewing, and includes a small and secure 'Rare Plant' display behind glass, visually accessible only from the new Accessible Nursery
- ~~⑬~~ Depot and Nursery Security Fences - extent of restricted area includes CCTV
- ⑭ Existing Botanic Gardens Visitor Information Centre building
- ⑮ Connect paths east of new fenceline to provide after-hours Goodwin St/ Collins Ave connection
- ⑯ Location for (future) Japanese Friendship Tea Garden (size indicative; subject to future design and funding; refer Appendix for detailed proposal)
-  ⑰ Indicative location for new Public Toilets/ Amenities
-  ⑱ New (temporary or permanent) coffee cart / stand for drinks and snacks - power and water connection to be provided
- ⑲ Reconfigure existing paved area to provide shady tables under fig tree
- ⑳ Areas within current Depot and cafe footprint returned to Botanic Gardens for garden beds
- ㉑ Existing toilet



FUNCTIONAL LAYOUT CONCEPT PLAN



INDICATIVE SECTION THROUGH NEW ACCESSIBLE NURSERY 1:200@A3

LEGEND - DEPOT AND NURSERY PRECINCT

- (A) Upgrade/ renovate existing staff red brick administration building to include offices, kitchen, meeting room, outdoor under cover lunch/break area with lawn/ breakout staff garden to north; replaces existing staff kitchen/office within red brick administration building
- (B) Accessible Nursery – provides limited public access for a 'behind the scenes' view of nursery operations and is the main nursery shade house; includes public pathway with orchid / other plant display areas with barrier between path and displays and central viewing area for flowering Titan Arum display; min 5.5m clear height for full area of structure needed to be able to store and transport pots into place (individual Titan Arum plants require up to 5m dia space when in leaf)
- (C) Main nursery (1st floor) and potting shed (ground floor) - for nursery operations with 1st floor shade houses on rooftop level (with lift/ dumb waiter access) for small plants that need high light levels (e.g. orchids, pitcher plants, ant plants etc. The upper level is critical to enable reduction of Depot footprint and return garden space to the Flecker Gardens.
- (D) Shade house for rare plants (secure, no public access) with viewing window from inside New Accessible Nursery
- (E) Shade house for general nursery stock (footprint shape can be varied if required to accommodate other facilities)
- (F) Storage shed for Flecker Team equipment
- (G) Parking space for 3 vehicles (including Wrap truck) with turning/reversing space (final layout is subject traffic engineer design for turning movement requirements); additional allowance on plan made for delivery/ storage/ turning/reversing space as required
- (H) Maintenance access road to back of Accessible Nursery
- (I) Throughway for vehicular access to rear of Accessible Nursery and Existing Conservatory (provide roof or retractable roof/shade sail)
- (J) Heritage listed remnants of carpenters shed to be repurposed as interactive space with changing displays run by the gardens/ use e.g. picnic tables/ arbor/lighting
- (K) Outdoor nursery space for large plant stock
- (L) New access gate to rear of existing Conservatory
- (M) New linking path between garden beds to facilitate maintenance from new maintenance entry; close existing maintenance entry on southwest side
- (N) Locations of ex'g staff building and red brick building (white dashed lines)
- (O) Areas within current Depot and cafe footprint returned to Botanic Gardens for garden beds
- (P) Existing depot driveway from McCormack St to be retained
- (Q) Existing significant trees to be retained
- (R) New toilet facilities placed to take advantage of existing sewer infrastructure
- (S) New coffee cart (indicative location) with power and water access provided
- (T) Reconfigure existing paved area to provide shady tables under fig tree

NOTE:

- / Extent of existing depot and cafe footprint shown as teal coloured area 'O' able to be returned to Botanic Gardens, is subject to ability to implement the 2-storey shed/ nursery option 'C'
- / New toilet block and coffee cart locations are indicative only

KEY PRIORITIES

CBG - KEY PRIORITIES AND ACTIONS	Masterplan Report Page No.	Reference No. - Flecker Masterplan p26	Reference No. - Depot & Nursery Concept Plan p28
High Priority Works : 0 - 2 Years			
Depot and Nursery Precinct			
Staff Administration Building	26-28	8, 12, 20	A, O, Q
New Accessible Nursery	26-28	12	B, D
New Depot and Nursery Precinct	25-28	8, 12, 20	-
Heritage Wall, Interactive Space and Garden Hand-back	26-28	8, 20	J, O, Q
Cafe & Toilet Demolition, Renovation / upgrade of red brick Staff Administration building	26-28		N
Security Fence	26-28	13	-
Car Parking	-	-	-
Toilet	26-28	17	R
General Site			
Gateways, Shelters and Interpretation	23, 24	3, 4	-
Boundary Fence - Pig-proof Fence for East Side of Connectivity Project only	26, 27	5	-
Bridge North - Light Commercial Bridge No. 154846 - Saltwater Creek	17	-	-
Medium Priority Works: 3 - 5 years			
Connectivity Project	26,27	8, 15	-
Existing Visitor Centre Refurbishments	15, 16	14	-
Disability Parking on Southern Side of Collins Ave	-	-	-
Site-wide Furniture Audit and Upgrade	-	-	-
Low Priority Works: 6 - 10 years			
Central Pedestrian Bridge (Saltwater Lake)	17	-	-
West Bridge (Light Commercial)	17	-	-
Raised Pedestrian Crossings	17	11	-
Centenary Lakes Team works	25	-	-
Western Gardens Entry Experience	26, 27	1	-
New Gardens Entry Sign Wall	26, 27	2	-
New Primary Spine Pathway Through Gardens	23, 26, 27	7	-
New Coffee Cart	26-28	18	S
Water and Sewer Audit	-	-	-
Investigation and Report on Oil Leaks in Arts Centre	-	-	-
Weir/ Waterway Infrastructure Upgrade Works	17	-	-

REFERENCES

- / British Maritime Technologies WBM (2019). Northern Beaches
- / Cairns Regional Council (2022). Our Cairns Coast: Adapting for the Future - Coastal Hazard Adaptation Strategy
- / Lis, A. and Iwankowski, P., 2021. Why is Dense Vegetation in City Parks Unpopular? The Mediative Role of Sense of Privacy and Safety. Urban Forestry & Urban Greening, 59, p.126988.
- / Rahm, J., Sternudd, C. and Johansson, M., 2020. “In the Evening, I Don’t Walk in the Park”: The Interplay Between Street Lighting and Greenery in Perceived Safety. URBAN DESIGN International, 26(1), pp.42-52.

