



An Australian Government Initiative



Regional  
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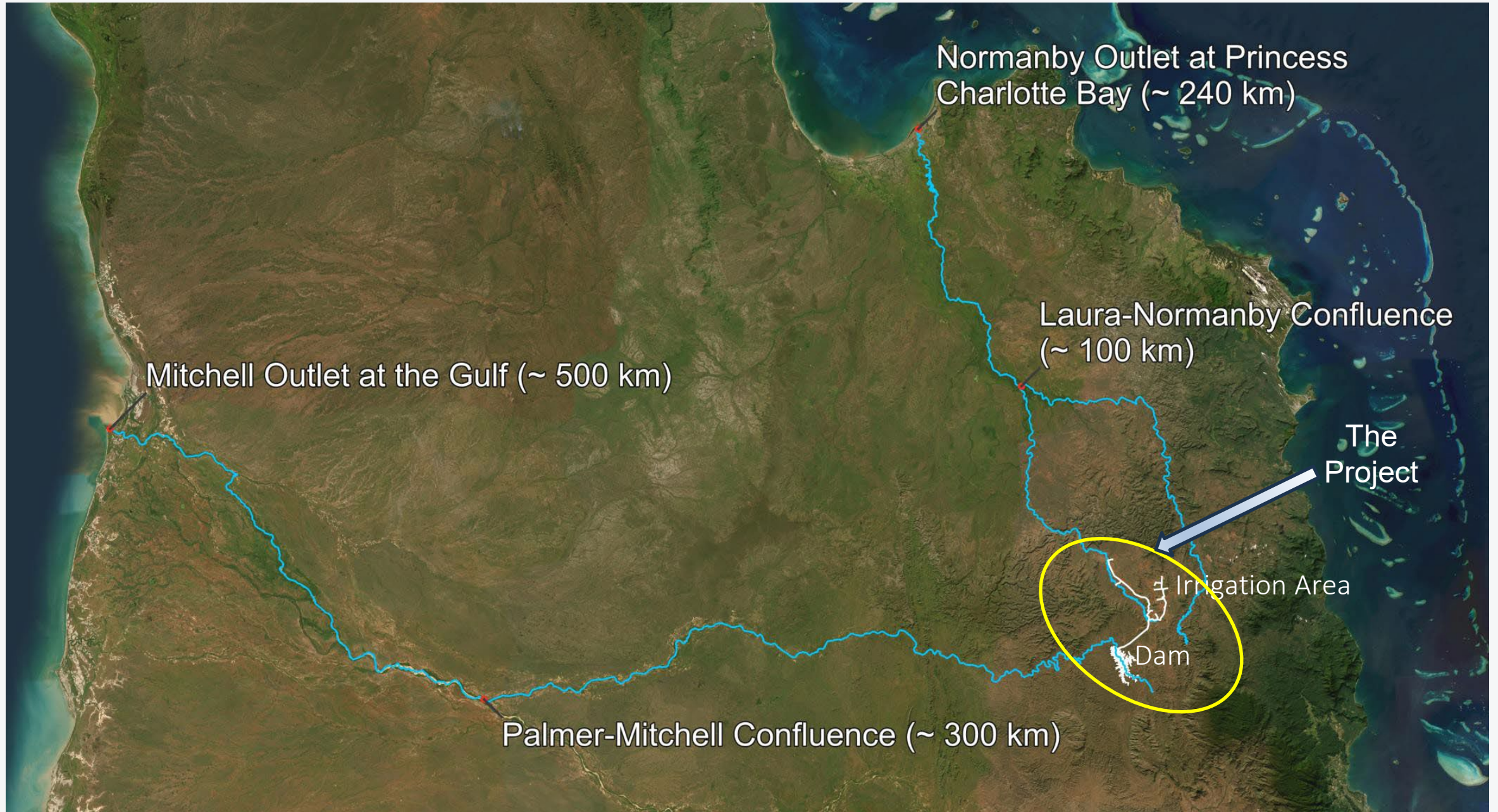
Cook Shire  
COUNCIL



# Lakeland Irrigation Area Scheme

*Mitchell River* WATERSHED MANAGEMENT GROUP,  
*October 2023*

# Project Location





# Background

- In 2015, local farmers agitated for a more secure water supply than the limited on-farm dams to realise farm productivity and expansion to the full area available.
- A Commonwealth Grant was received in February 2017 to investigate the irrigable land area and sources of water for irrigation.
- The study found a total of 17,115 Ha of A and B irrigable soils of which 9,724ha was already cleared.
- About 8,000ha was contiguous on the Red Tableland with the current irrigation area and provided the base objective for Irrigation.
- In May 2019 a further Grant of \$10million was received to progress a Detailed Business Case (DBC) for the preferred option for a water source on the Palmer River.

# Project Objectives

- Deliver on community and Traditional Owners' aspirations.
- Advance associated economic and social improvements.
- Increase Cook Shire's population.
- Increase GRP and support food security agenda.
- Leverage existing farming operations.
- Capitalise on the available unfarmed irrigable land.
- Procure adequate, reliable, and affordable sources of water.

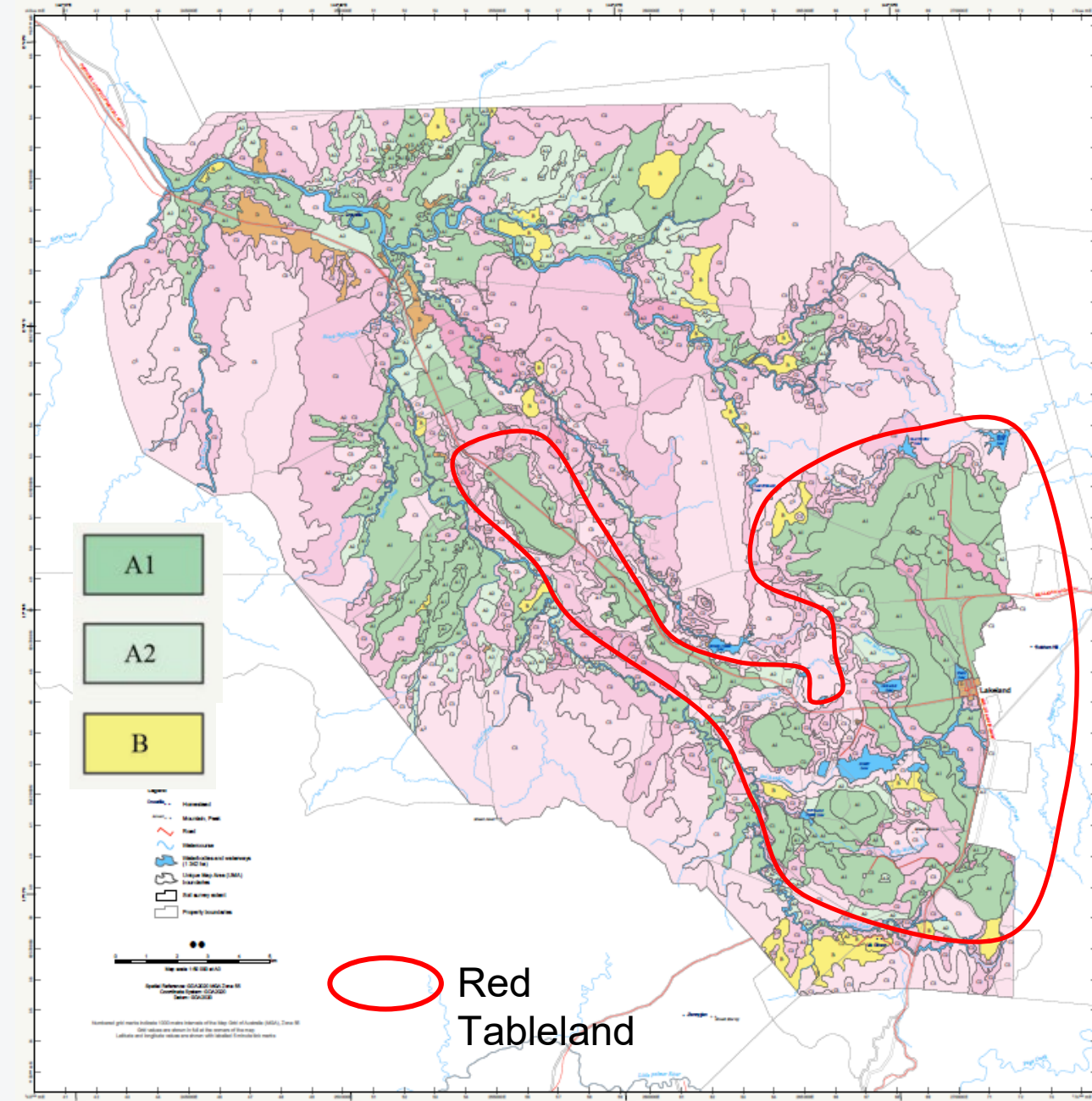
# Irrigable Land & Water Demand

- ❑ DNRME investigated an area of 58,443Ha
  - Concluded a total of 17,115Ha (29%) suitable for irrigation (Class A & B)
  - 8,000Ha of freehold Class A on the Red Tableland already cleared
  - Total land cleared is 9,274ha (54% of A&B)
  - 20% contains least-concern vegetated areas
- ❑ Water requirement based on an industry average of 10ML per Ha was 80,000ML

## Agricultural Land Classification

D Morrison, N Enderlin, M Barker, T Whitling and S Volkart, Department of Resource, Marsden

SOILS OF THE LAKELAND DISTRICT



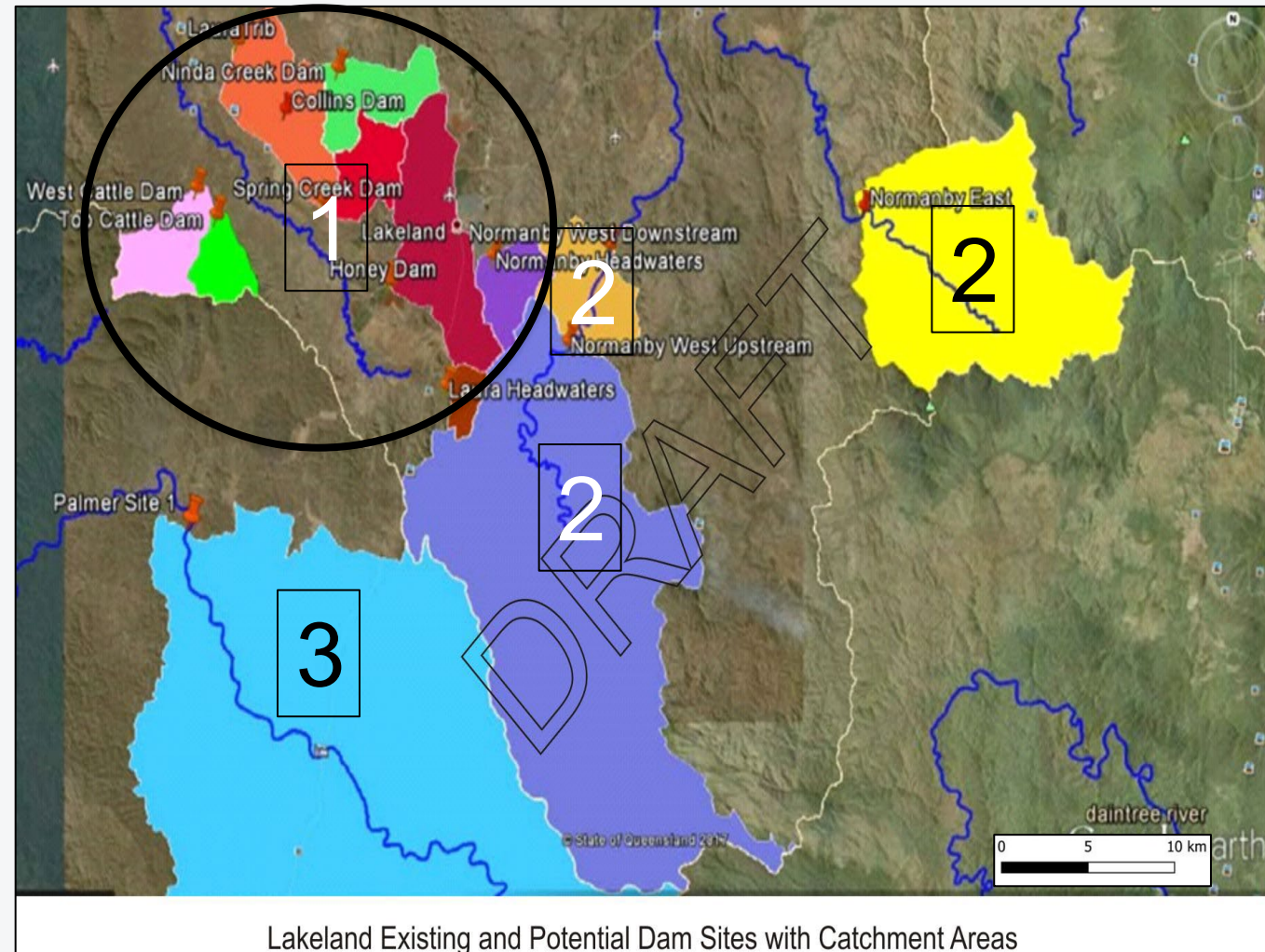


# Why the Palmer River?

Lakeland sits in the GBR catchment. Several sources of water were investigated.

1. Increasing the on-farm dams only improved reliability from 50% to 70% for the current irrigation area.
2. The dams in the Normanby catchment required capture of the annual flows and would not irrigate the minimum 8,000ha on the red soils. Also flow to GBR.
3. A further dam [3] was investigated on the Palmer River, a tributary of the Mitchell River which flows west to the Gulf of Carpentaria. This avoids some of the challenges presented by GBR constraints.

This has the potential to supply the volume of water required and became the preferred option.

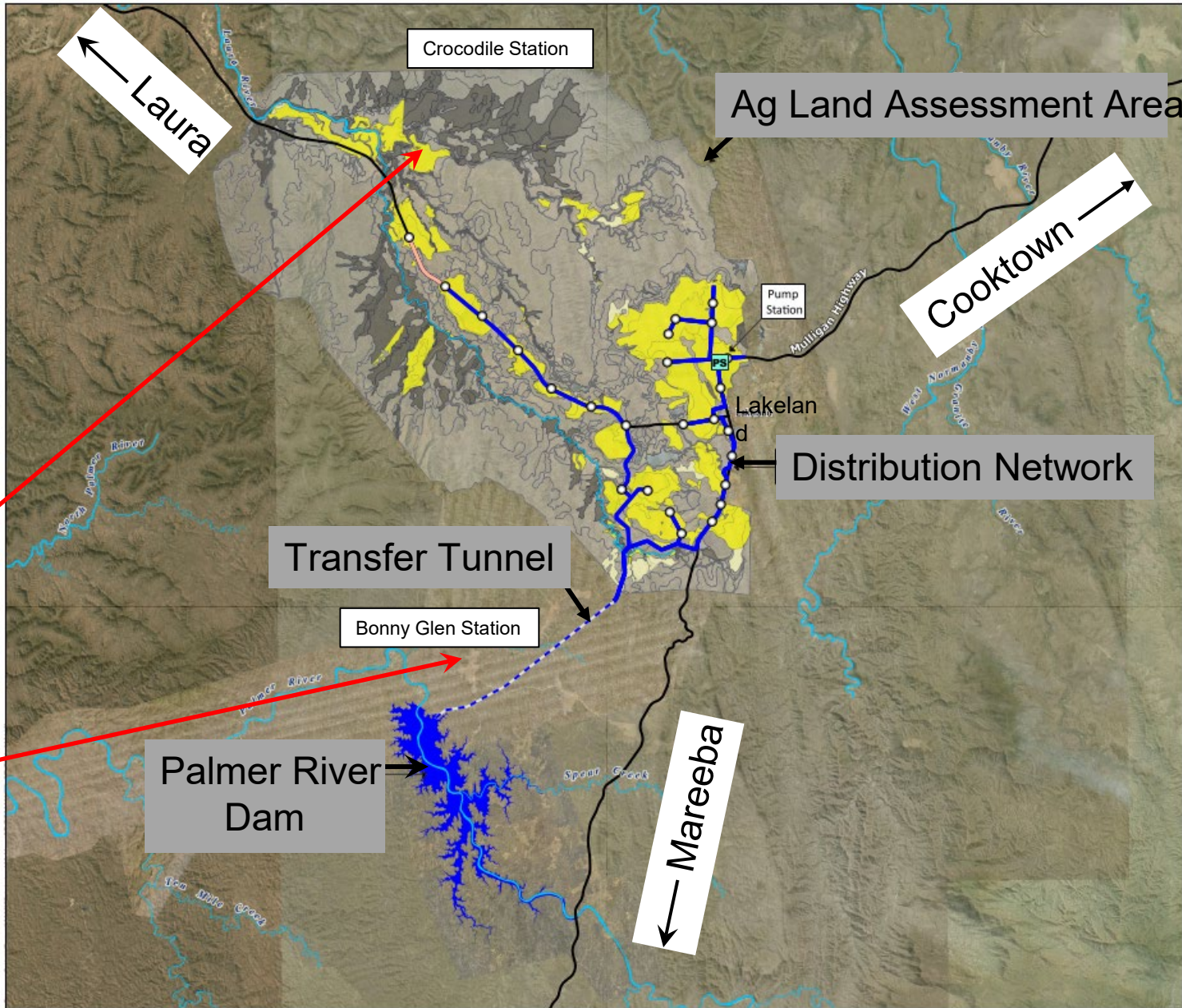




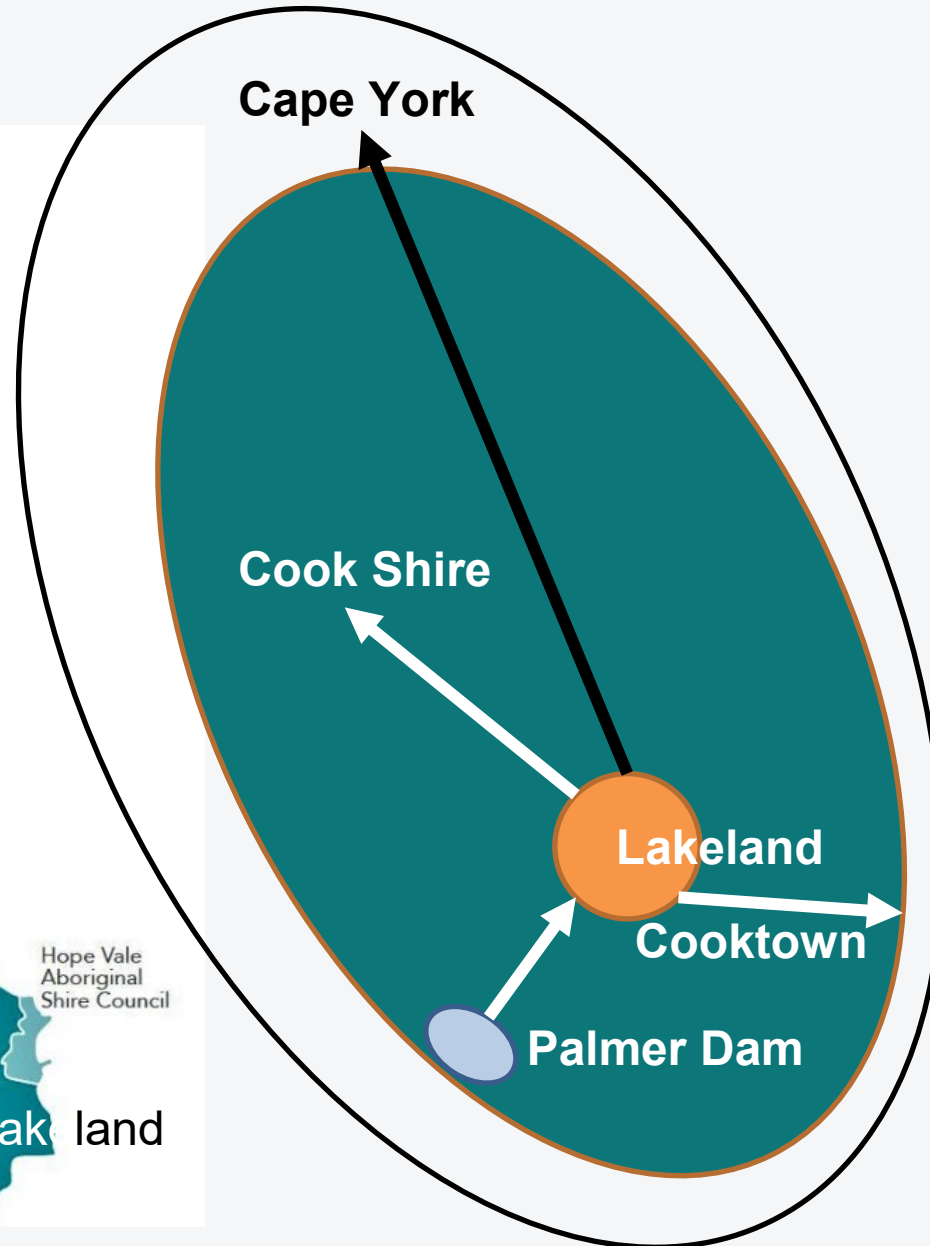
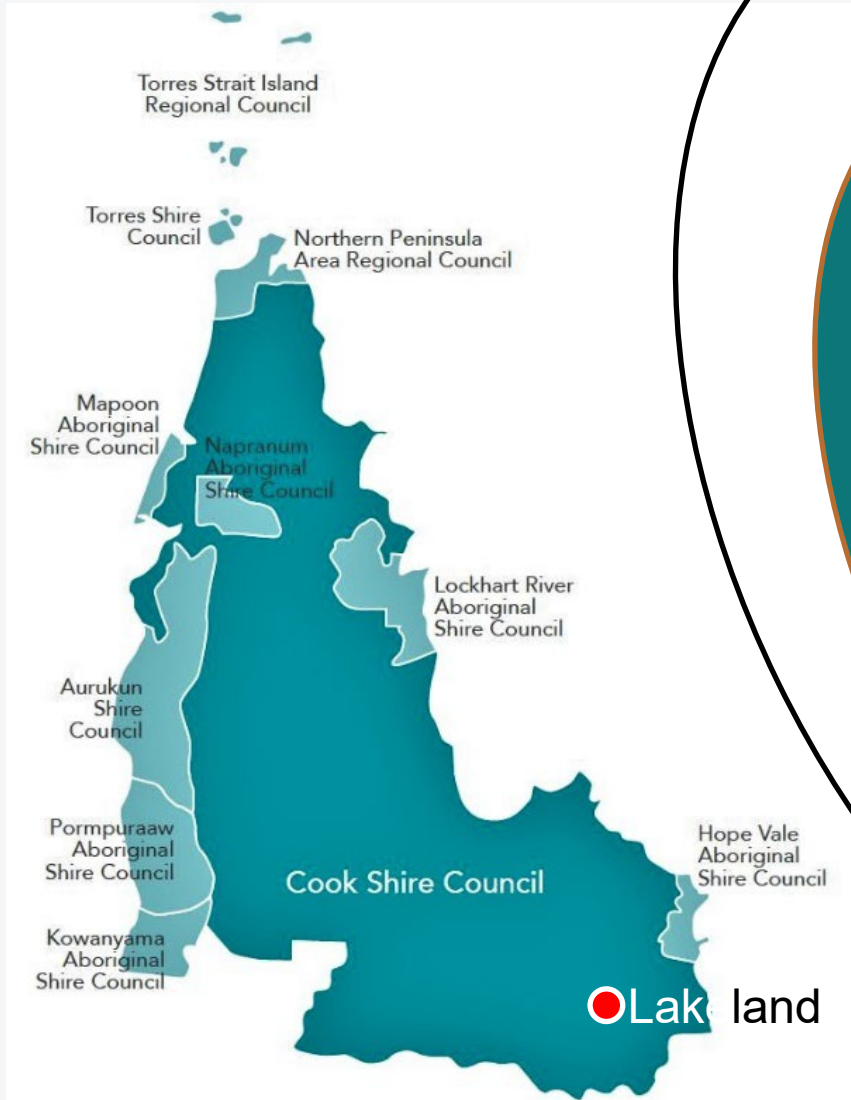
# Components of the Scheme

- 1. Dam (205GL)
- 2. Transfer tunnel (12km) from dam to Lakeland
- 3. Reticulation to farms (66km)

A larger dam option (ALS) has been considered (296GL at 3.4m higher) which could supply additional area including Indigenous lands. This could also supply some agriculture in the land adjacent to the dam, some of which is Indigenous.



# Benefits



- The scheme provides benefits to the local area.
  - **Directly** to the growers who benefit from the new water and the services which ensue.
  - **Indirectly** to the town and local area, through commercial and social services resulting from a larger population centre.
- Also, potential benefits outside the local area.
  - **Catalyst** for a range of services and economic development as well as environment, social and cultural benefits to wider Cape York.



# Lakeland Irrigation Area Scheme – Wider Benefits

Economic analysis<sup>(1)</sup> shows significant flow-on effects over a period of up to 20 years from the development of Lakeland.

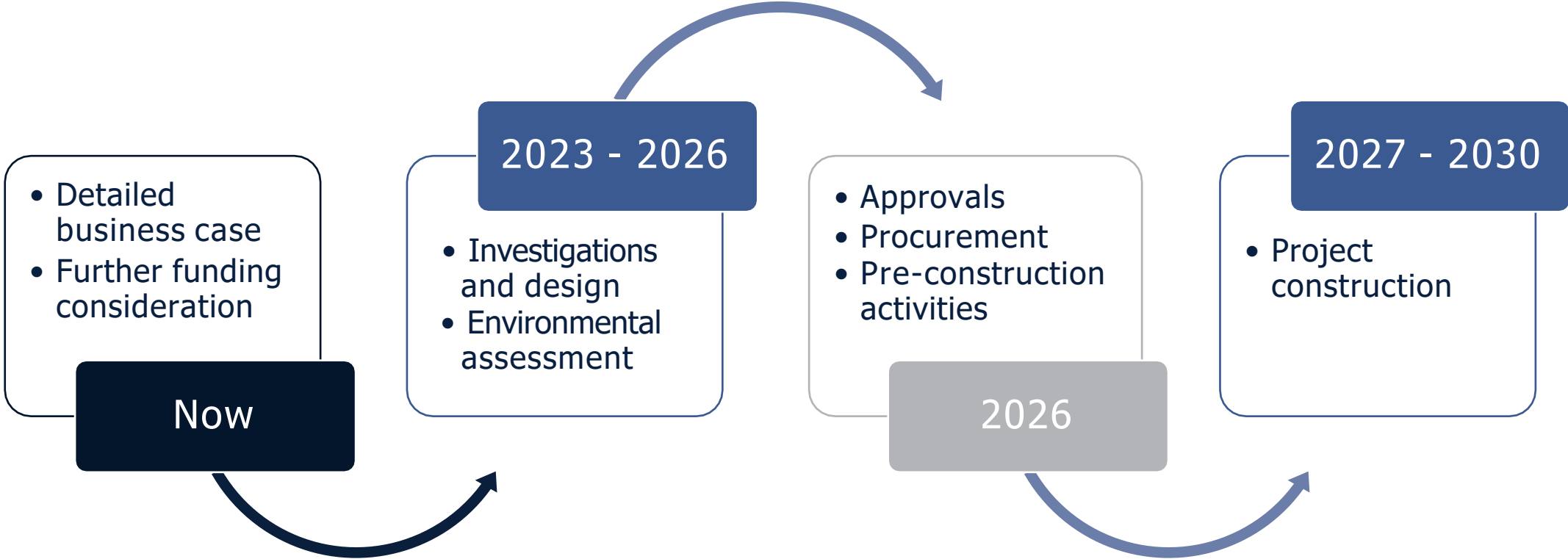
The suggested increase in population for the Lakeland Scheme would be:

- Cook Shire.....13,000 – 15,000
- Cooktown.....2,700 – 3,300
- Lakeland Township.....3,600 – 4,400
- Lakeland District.....7,300 – 8,800
- Mareeba.....10,000 – 11,000
- Cairns.....3,000 – 4,000

Gross economic impact for Cook Shire would be of the order of \$780million/yr.  
Additional Gross Regional Product in the order of \$510million/yr in current dollars.  
Direct Economic output from farming is an increase on GRP of about \$200M/yr.

(1) Cummings Economics (January 2023) – “Lakeland Irrigation Area Scheme – Economic Development Implications”

# Indicative Development Timeline



- RDA Tropical North is the proponent for the Detailed Business Case.
- The ongoing implementation, design and construction will be a different body.
- Major sponsors of the project going forward include Cook Shire Council, Western Yalanji Aboriginal Corporation, Lakeland growers and community, RDATN.



# Consultation

Extensive consultation and engagement has occurred across all sections of the community as well as with State and Commonwealth agencies. These include –

- Directly affected stakeholders: growers; landholders in the vicinity of the dam who would be inundated; landowners downstream including the Small Miners Association.
- Community groups and local government. (e.g. Cook Shire, My Pathways, health groups, progress associations)
- Indigenous Groups for on ground investigation;  
To satisfy legal requirements, the Western Yalanji Group were identified as the ‘Aboriginal Party’ for both Native Title and Cultural Heritage.
- Indigenous organisations to identify future aspirations: these included Hope Vale, Laura (Ang-Gnarra), Wujal Wujal, as well as individuals with an interest.

# **Stream Flow Impacts Mitchell River**



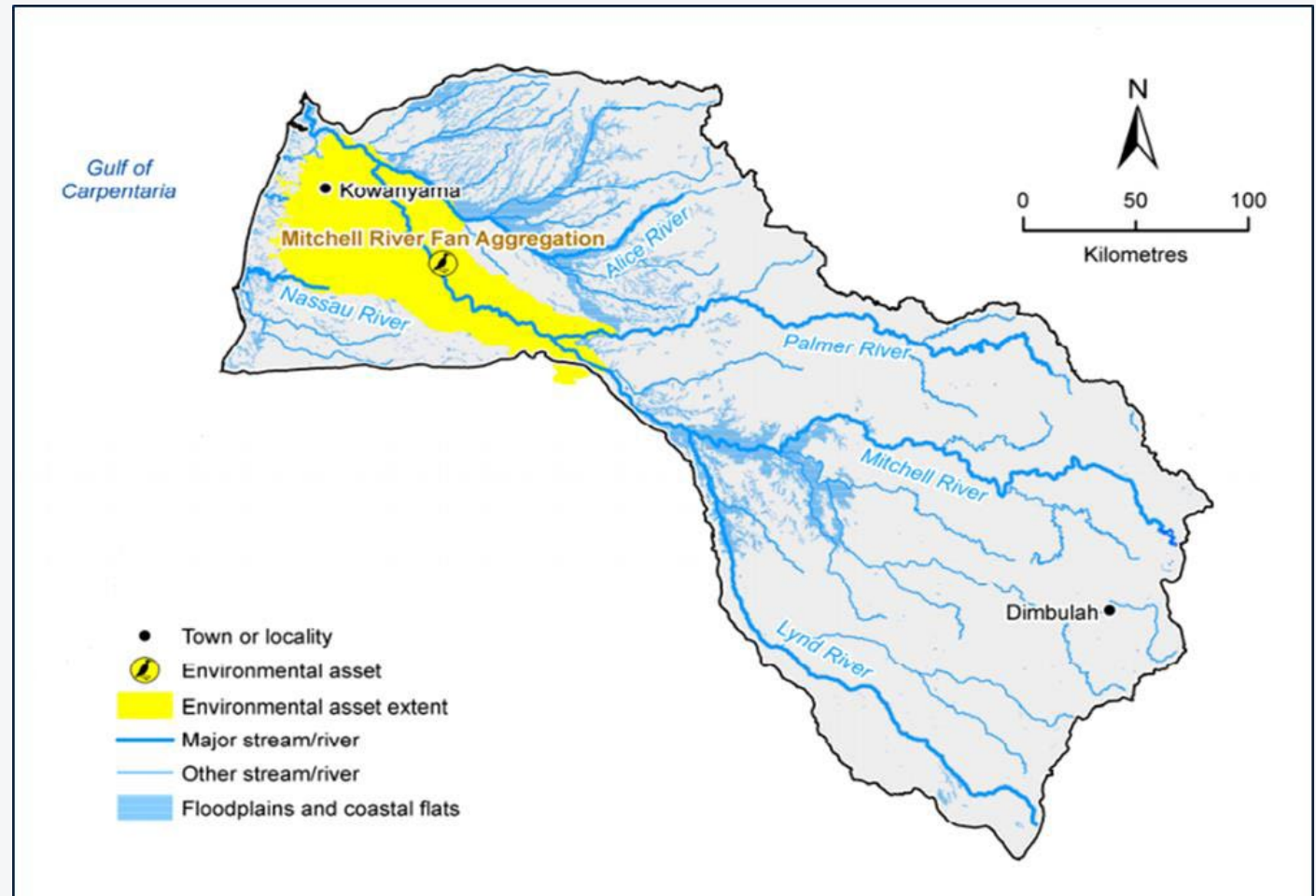
# Water Plan (Mitchell) 2007

- The plan covers an area of approximately 72,000 km<sup>2</sup>.
- The plan includes 45,000 ML of unallocated water that may be accessible to the project.
- The plan expires on 1 November 2027.
- Minister's Performance Assessment Report June 2018 identified the Lakeland Irrigation Area as a proposal that may include water sourced from the headwaters of the Mitchell plan area.
- The Mitchell water plan can be reviewed or amended at any time in the future should the risks in the catchment change or if significant new demands are confirmed.



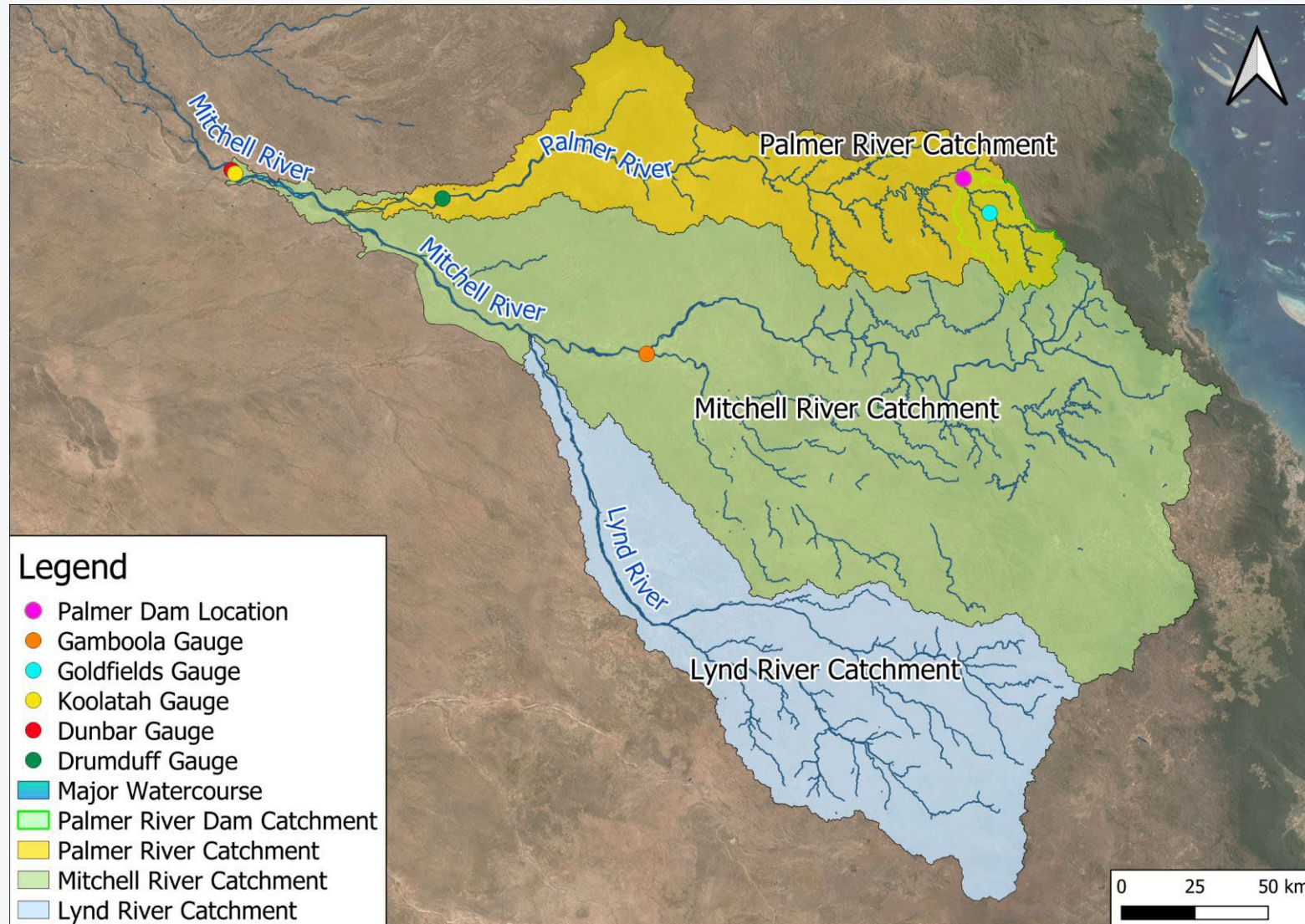
# Mitchell Basin

- The Palmer River joins the Mitchell at the upstream extent of the Mitchell River Fan Aggregation
- The Mitchell Basin is approximately 72,000km<sup>2</sup> in area
- The proposed Palmer River Dam catchment is approximately 900km<sup>2</sup> or 1.3% of the total Mitchell Basin catchment area
- Impacts from the scheme are more pronounced at the dam location and less pronounced at Kowanyama, which is closer to the Gulf





# Impacts to Flow Volume



# Impacts to Flow Volume

Location	Pre-development Mean Annual Flow (ML/yr)	Irrigation offtake (ML/yr)	Irrigation offtake Percentage (%) of Mean Annual Flow	Direct Evaporation (ML/yr)	Direct Evaporation Percentage (%) of Mean Annual Flow	Environmental Flows at dam outlet (ML/yr)	Environmental Flow Percentage (%) of Mean Annual Flow
Palmer River Dam	222,810	94,453	42.4%	27,943	12.5%	28,964	13.0%
Palmer River Catchment end (Drumduff)	1,337,856	94,453	7.1%	27,943	2.1%	28,964	2.2%
Mitchell River at Dunbar	6,418,778	94,453	1.5%	27,943	0.4%	28,964	0.5%
Outlet (Gulf of Carpentaria)	15,570,000	94,453	0.6%	27,943	0.2%	28,964	0.2%

# Impacts to Flow Volume

Location	Catchment Area	Pre- dam Mean Annual Flow	Irrigation offtake and evaporation Reference Project Only	
			(ML/yr)	(%)
	(km <sup>2</sup> )	(ML/yr)	(ML/yr)	(%)
Palmer River Dam	892	222,810	115,623	51.9%
Outlet (Gulf of Carpentaria)	72,000	15,570,000*	115,623	0.8%

\*CSIRO (2018)

## For Comparison

Water Plan	Area (km <sup>2</sup> )	Mean Annual Flow (GL)	Water Allocation GL	% of Mean Flow
Mitchell	72,000	15,570 (4.62GL/km <sup>2</sup> )	75GL	0.6%
Gilbert	22,041	3,706GL (5.95GL/km <sup>2</sup> )	489GL	18.9%



# Infrastructure Impacts Downstream

# Infrastructure Impacts

The Study has identified as part of the Environmental Impact Assessment a range of impacts from the construction of the Dam:

- Loss of vegetation, fauna habitat and potential cultural heritage sites from inundation.
- Loss of owned and managed land, both leasehold and freehold from inundation or site works, the latter including the historic township of Byerstown. Impacts also include disruption to established access routes and property management.
- Impact on small miners; upstream due to inundation, and downstream due to reduction in transport of stream sediments.
- Changes to seasonal water levels potentially affecting fish habitat.
- Barrier to fish migration if appropriate fish passage is not implemented.
- Minimal reduction in outflow to the Gulf of Carpentaria potentially affecting fish breeding.

## Future Actions

- Revision of the Mitchell River Water Plan and allocation of water to Lakeland
- Establishment of a Mobilisation Taskforce
- Determination of a Proponent
- Seeking Funding for next Stage – Detailed design, EIS, etc
- Submission for a Coordinated Project
- Conduct of all required investigations for Environmental Approvals, Native Title (ILUA's) Cultural Heritage, EPBC etc.



# A Step Change for Cape York

## Questions?



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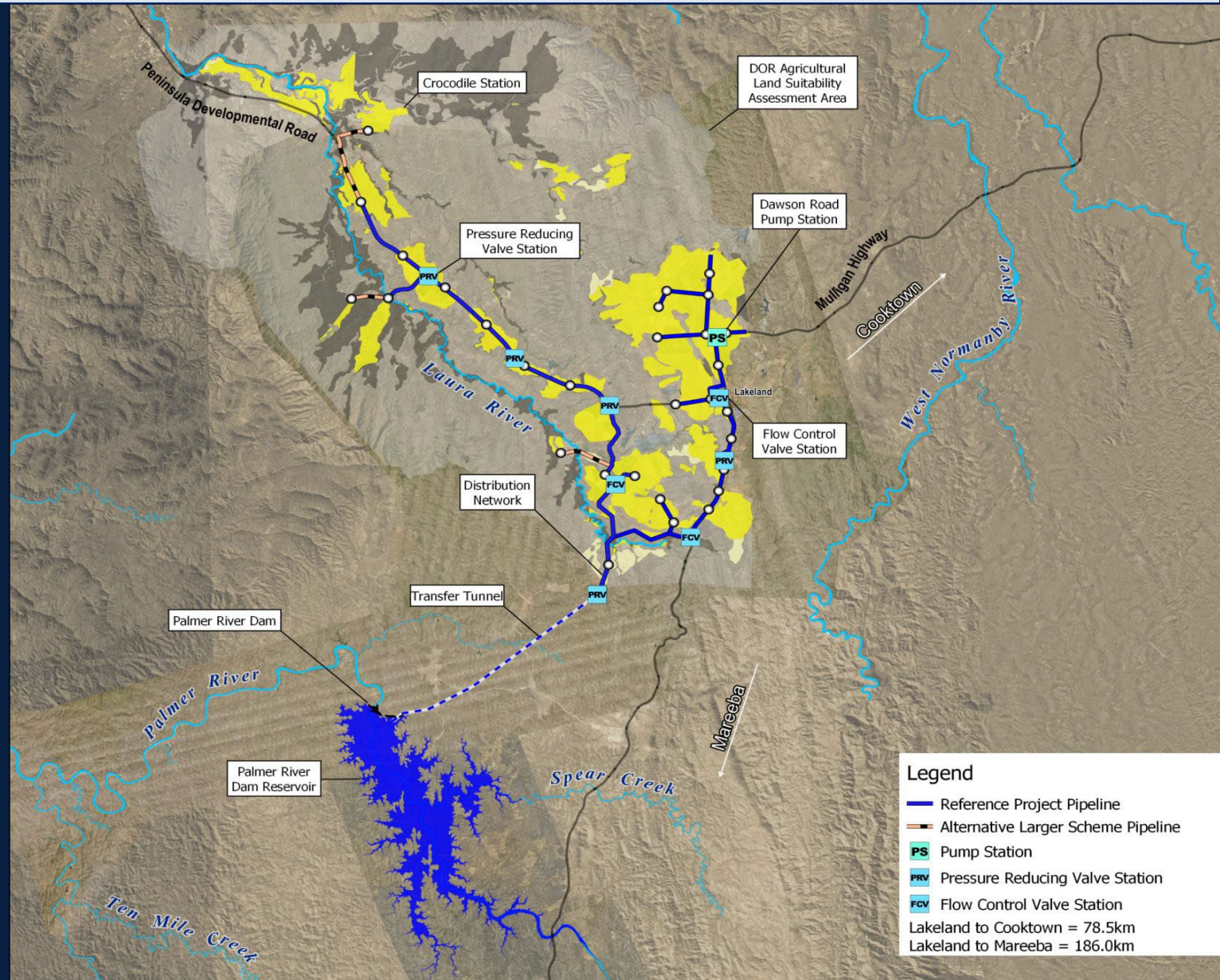
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**SMEC**

Member of the Surbana Jurong Group



### Legend

- Reference Project Pipeline
- Alternative Larger Scheme Pipeline
- PS Pump Station
- PRV Pressure Reducing Valve Station
- FCV Flow Control Valve Station
- Lakeland to Cooktown = 78.5km
- Lakeland to Mareeaba = 186.0km