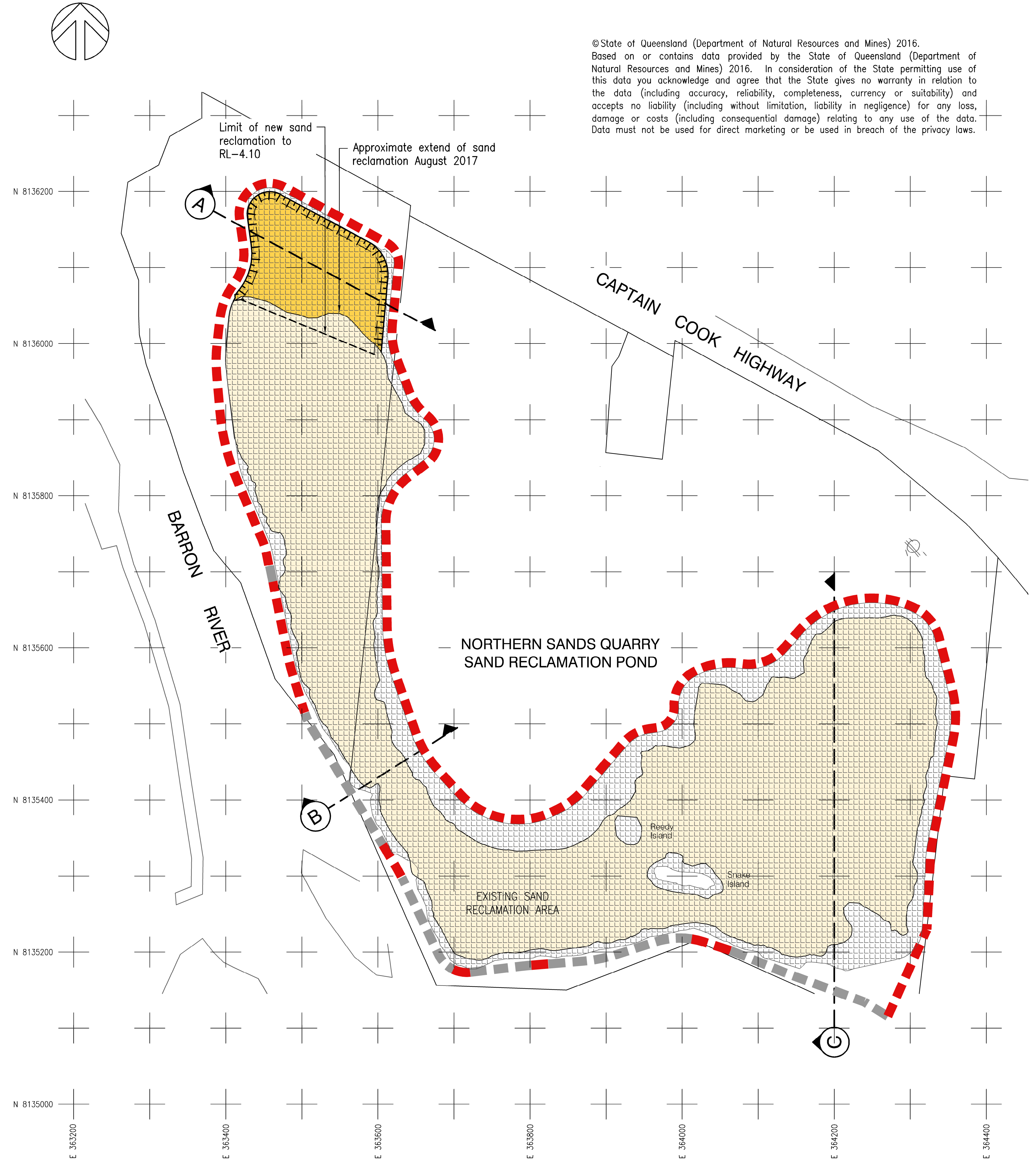


Appendix A Design Drawing

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DREDGE MATERIAL PLACEMENT ZONE
1:3000

STORAGE VOLUMES

LEVEL (AHD) (m)	VOLUME BELOW (m³)	COMMENT
5.50	2,861,218	Top of Bund
5.07	2,704,283	Top of Water at end of placement
5.00	2,678,922	
4.50	2,499,222	
4.07	2,347,020	Top of Material at end of placement
4.00	2,322,488	
3.69	2,214,742	Top of Water at end of 2019
3.50	2,149,522	
3.00	1,980,296	
2.69	1,878,100	Top of Material at end of 2019
2.50	1,813,865	
2.00	1,650,110	
1.50	1,489,590	
1.00	1,332,605	
0.50	1,182,965	
0.00	1,044,381	Lowest Groundwater Level
-0.50	906,260	
-0.59	882,650	Top of Material at end of settlement
-1.00	769,307	
-1.50	637,009	
-2.00	518,746	
-2.50	418,862	
-3.00	340,807	
-3.50	278,403	
-4.00	226,313	
-4.50	190,502	
-5.00	161,571	
-5.50	136,119	
-6.00	113,693	
-6.50	94,419	
-7.00	77,728	
-7.50	64,196	
-8.00	52,556	
-8.50	41,997	
-9.00	32,618	
-9.50	25,109	
-10.00	19,484	
-10.50	14,766	
-11.00	11,156	
-11.50	8,191	
-12.00	5,669	
-12.50	3,849	
-13.00	2,357	
-13.50	1,121	
-14.00	225	
-14.50	0	

LEGEND

- EXISTING SAND RECLAMATION AREA (approx 26.2ha)
- FUTURE SAND RECLAMATION AREA (approx 2.4ha)
- DREDGE MATERIAL PLACEMENT ZONE (approx 34.6ha – Surface Area at RL 3.50)
- EARTH BUND (RL 5.50 – approx 96,000m³)
- EXISTING EARTH BUND (RL 5.50 or greater)

NOTES

- Volumes shown are approximate only and based on a combination of site hydrographic survey and LiDAR survey.
- For Cross Sections depicting placement of dredged material at weekly intervals, refer Drg 3527-SK15.

CONCEPT ONLY

FLANAGAN
CONSULTING GROUP

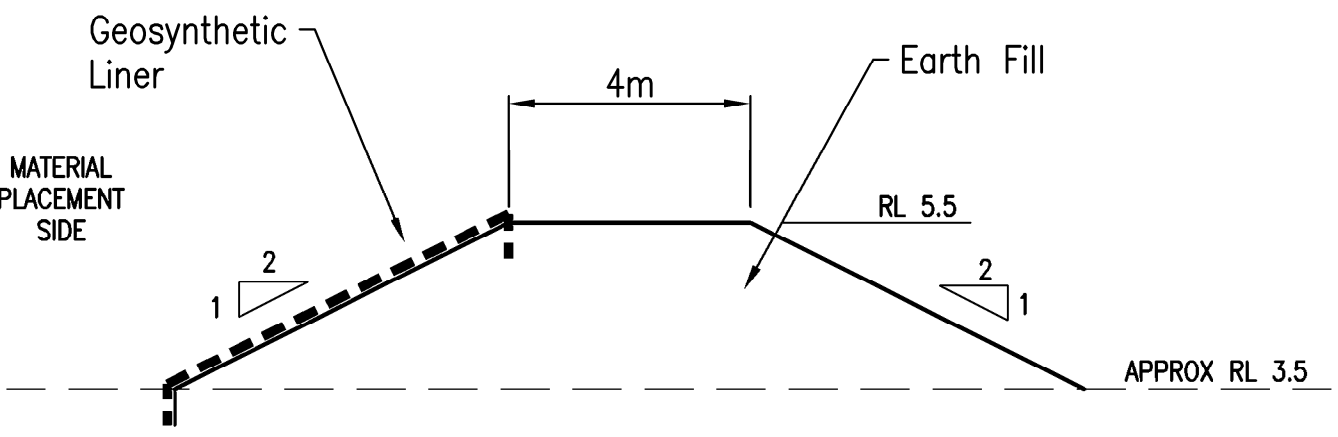
DEVELOPMENT CONSULTANTS • PROJECT MANAGERS • ENGINEERS • PLANNERS

CAIRNS (07) 4031 3199 DARWIN (08) 8943 0620 MACKAY (07) 4944 1200 TOWNSVILLE (07) 4724 5737

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NORTHERN SANDS
Dredge Material Placement
Placement Zone Plan & Volumes

3527-SK14D
1:3000
A1 Full Size

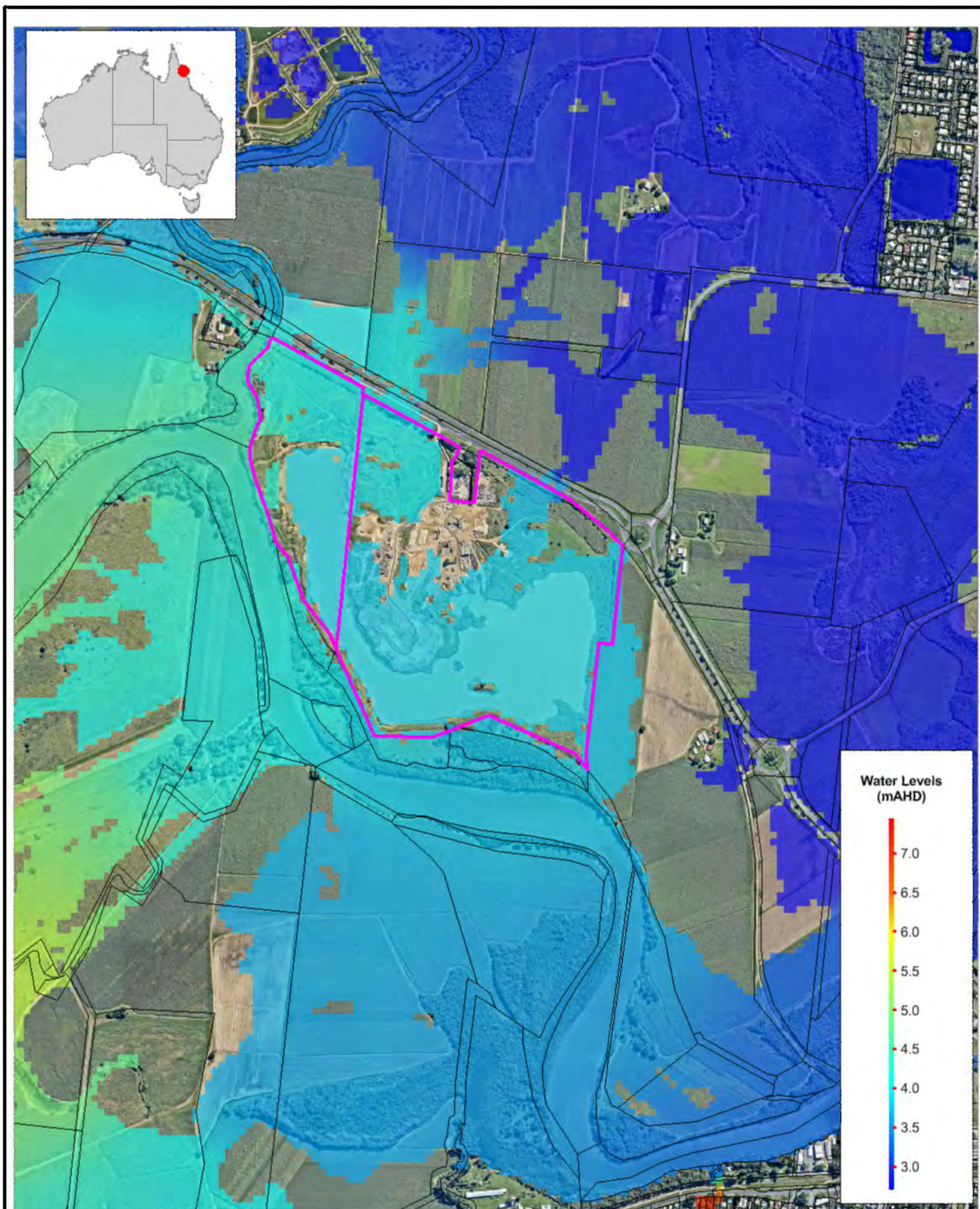


Total Bund length approx 4000m.
Comprising approx 3150m of new bund
& 850m of existing surface above RL5.5

PERIMETER EARTH BUND
NTS

Existing Flood Results

Appendix B Existing Flood Results



Title:
Northern Sands Placement Site
2 Year ARI Peak Water levels - Pre-Placement Case

Figure:

B-1

Rev:

A

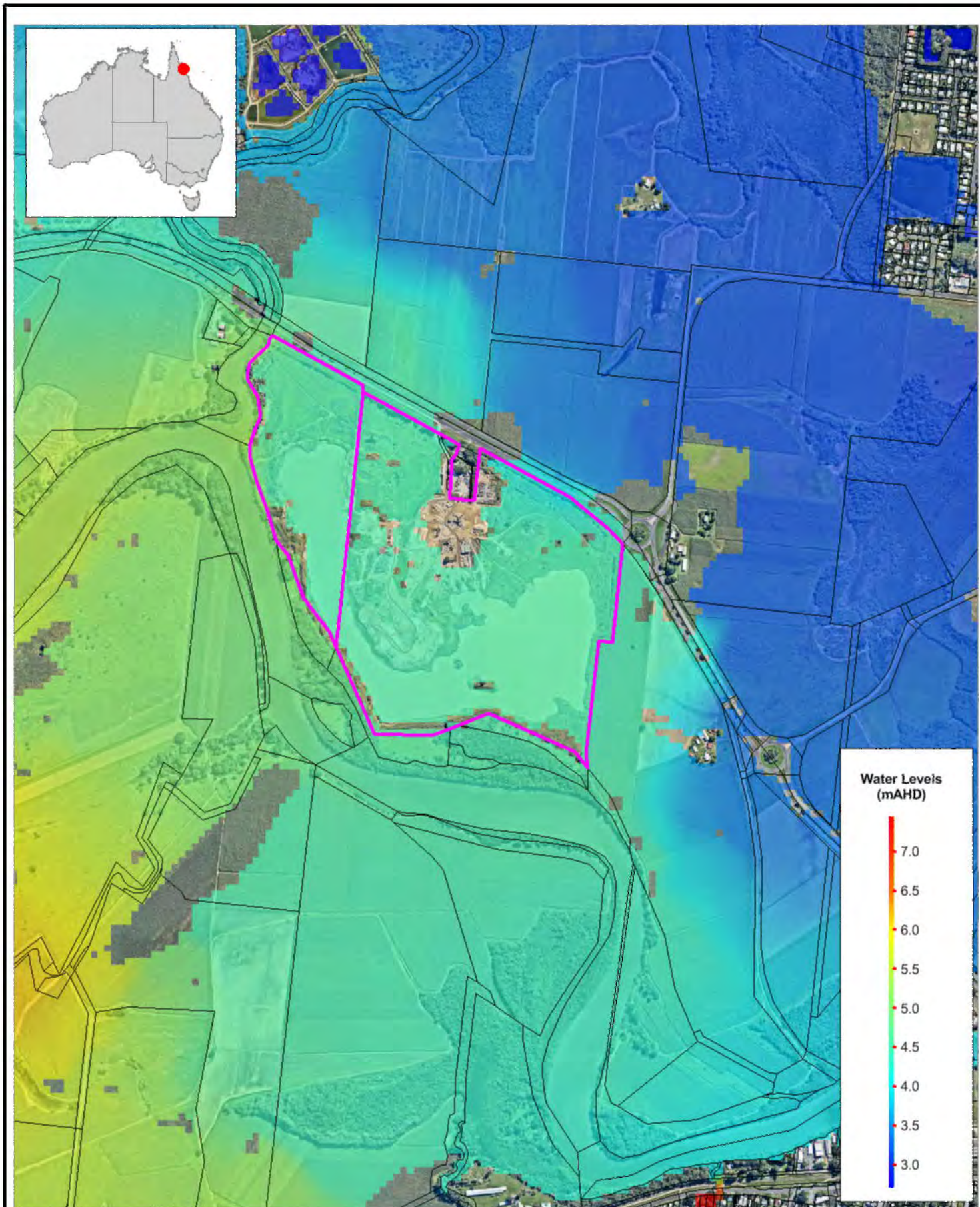
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0 150 300
metres



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Title:
Northern Sands Placement Site
5 Year ARI Peak Water levels - Pre-Placement Case

Figure:

B-2

Rev:

A

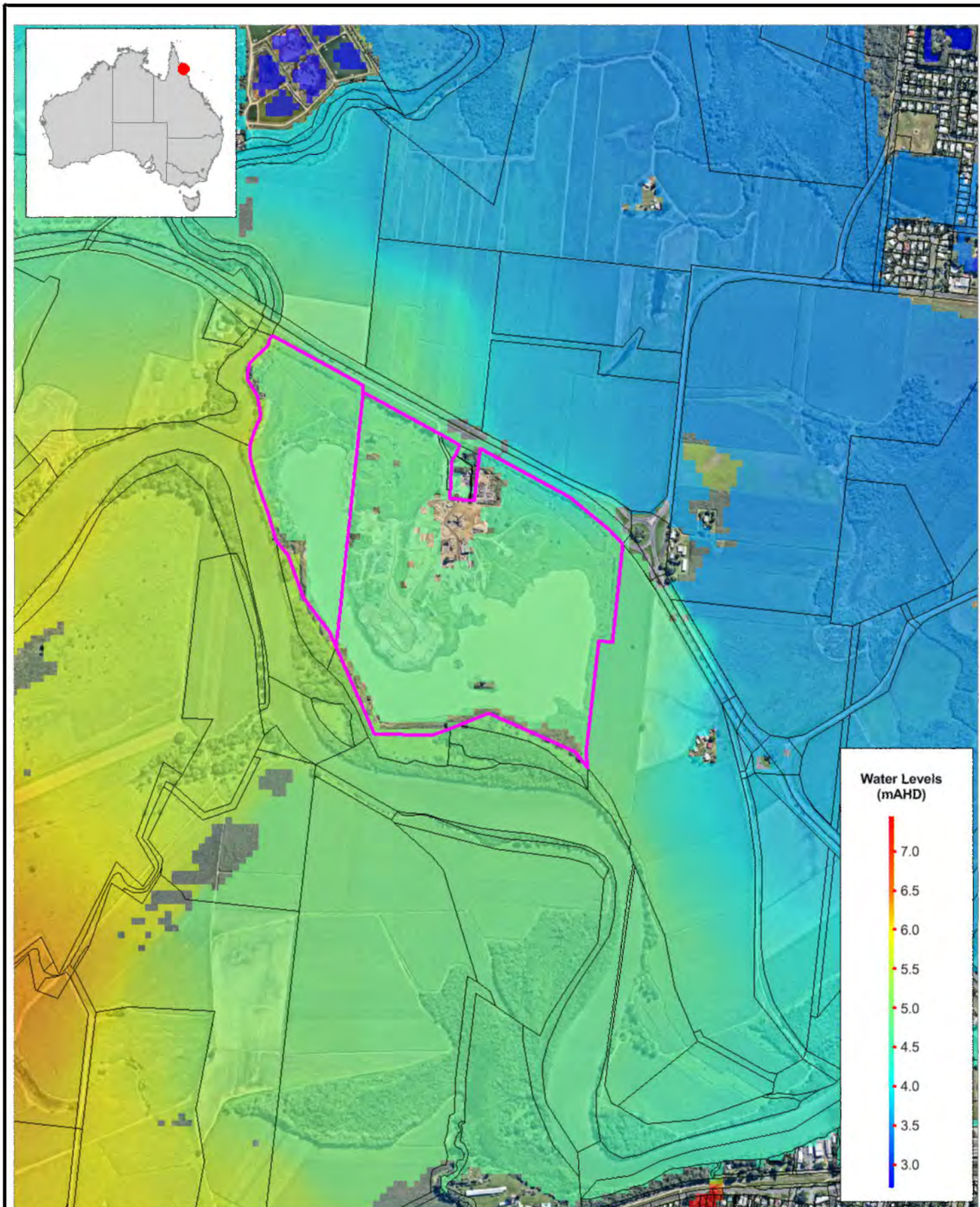
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metres



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Title:
Northern Sands Placement Site
10 Year ARI Peak Water levels - Pre-Placement Case

Figure:

B-3

Rev:

A

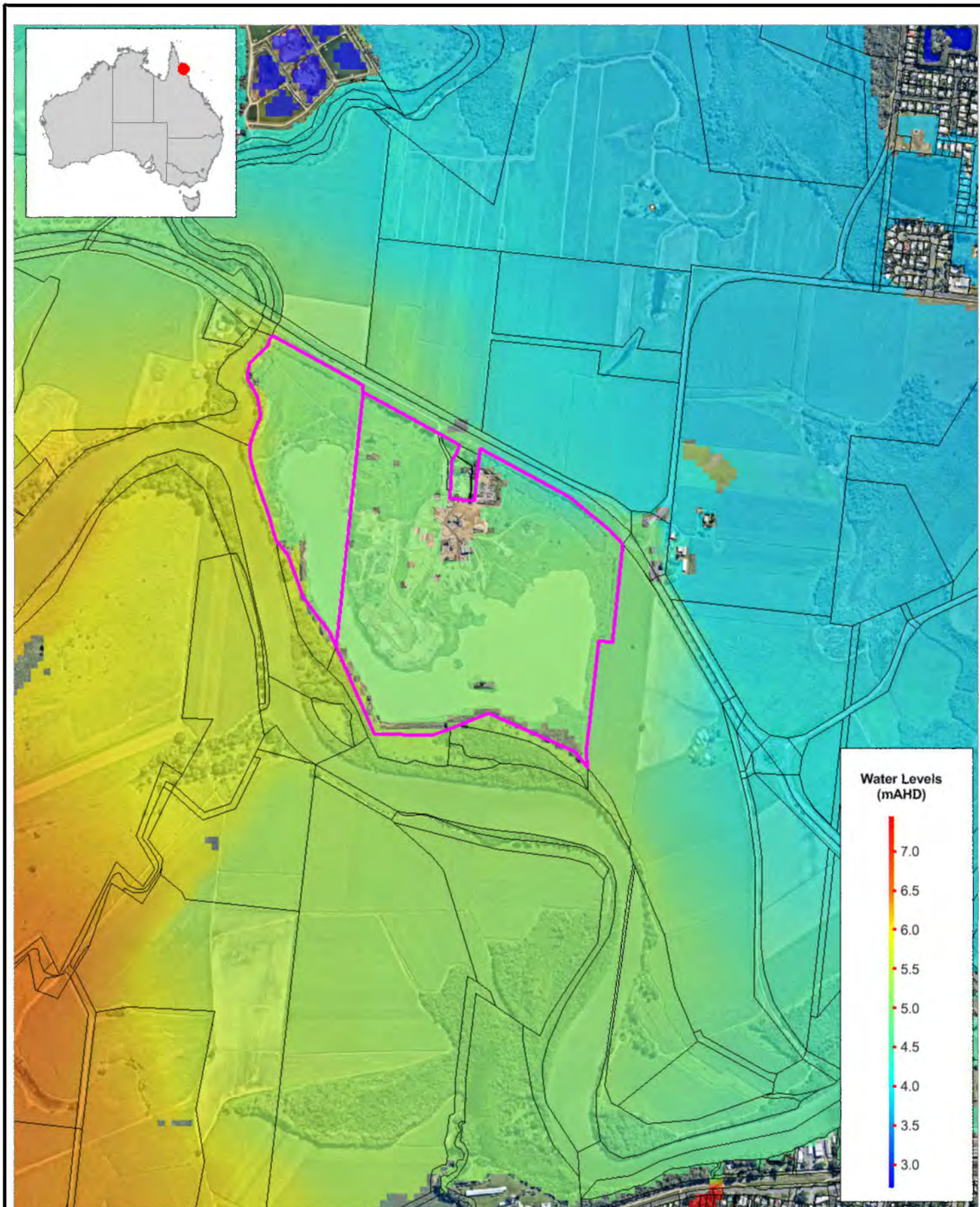
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Title:
Northern Sands Placement Site
20 Year ARI Peak Water levels - Pre-Placement Case

Figure:

B-4

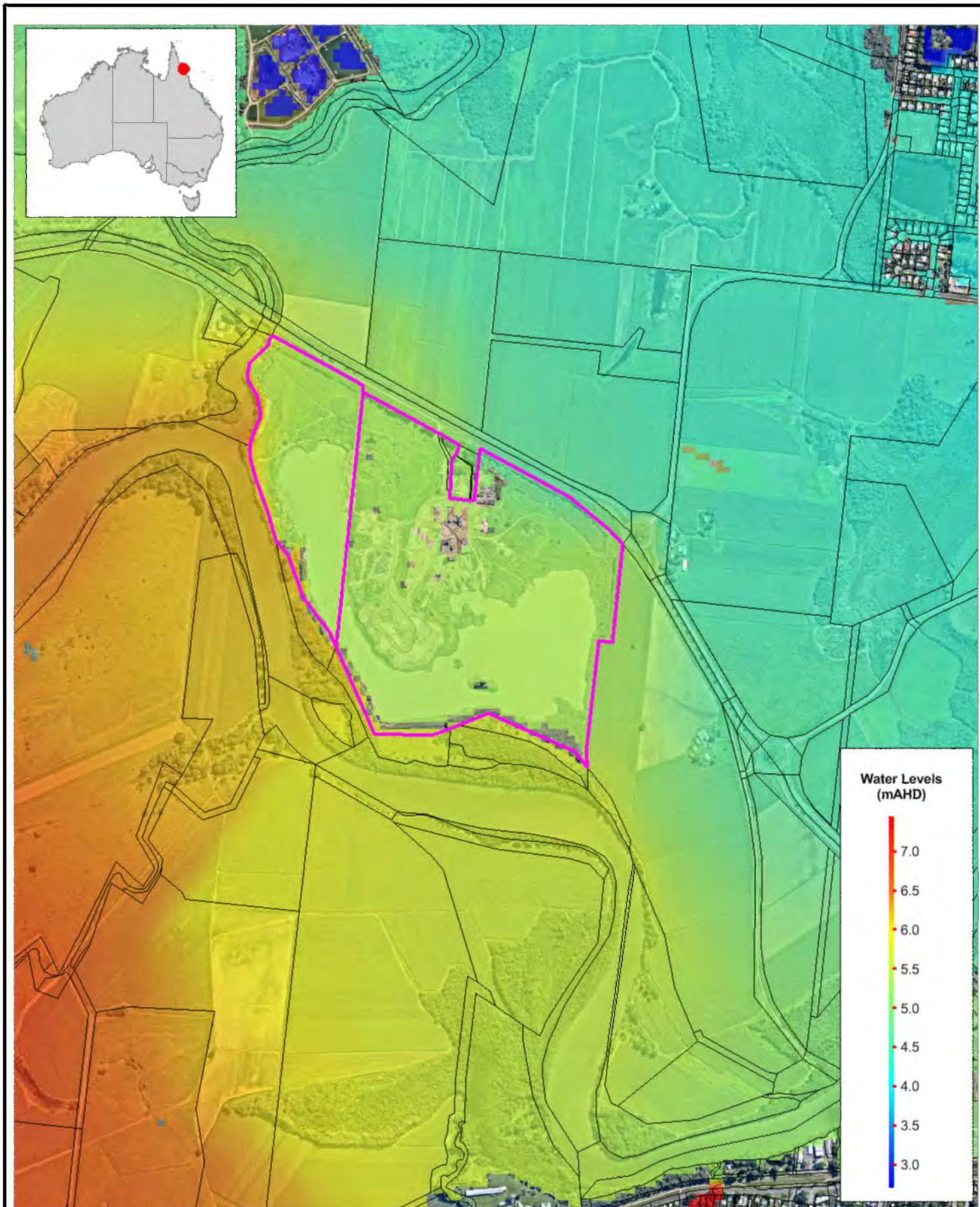
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Title:
Northern Sands Placement Site
50 Year ARI Peak Water levels - Pre-Placement Case

Figure:

B-5

Rev:

A

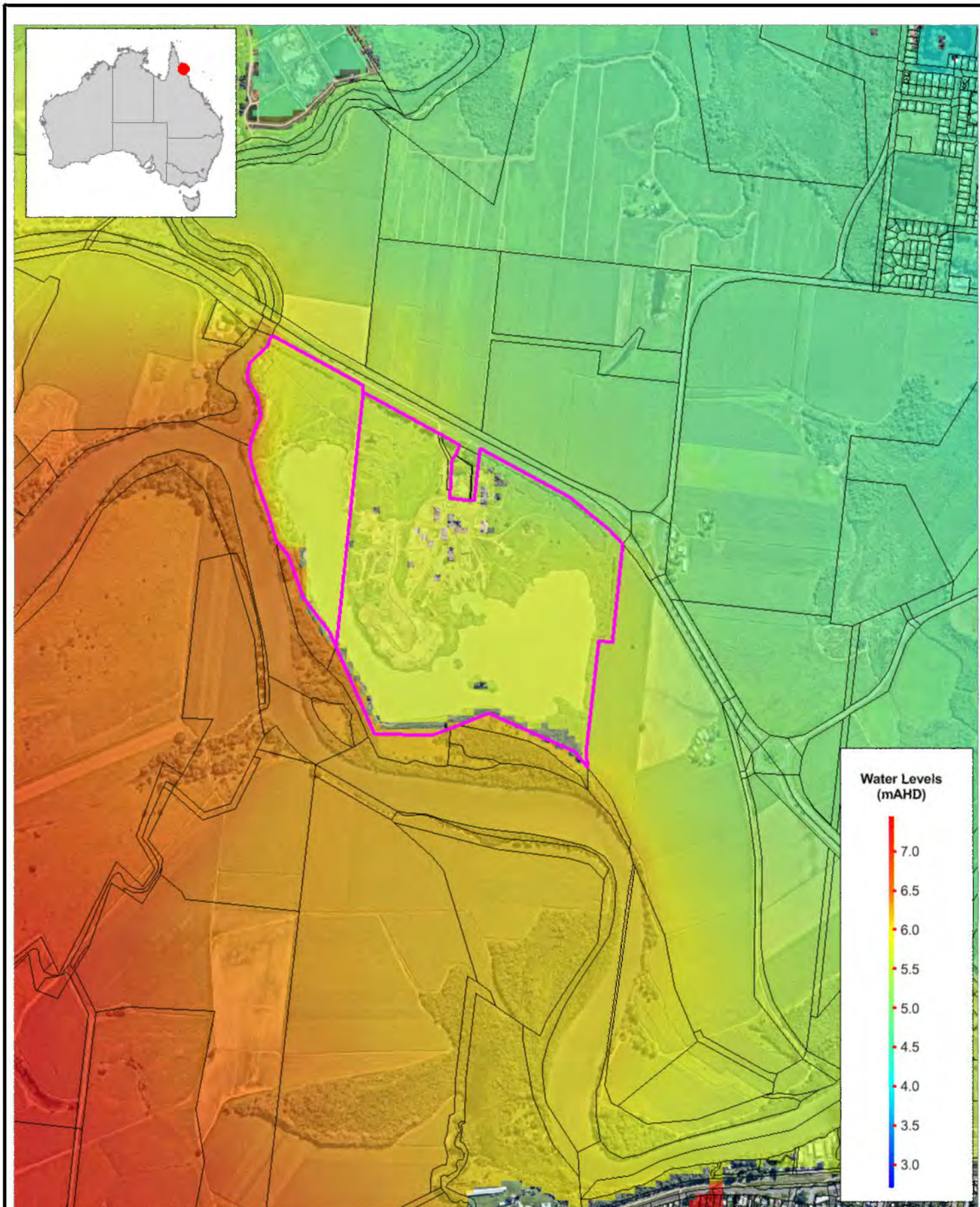
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metres



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Title:
Northern Sands Placement Site
100 Year ARI Peak Water levels - Pre-Placement Case

Figure:

B-6

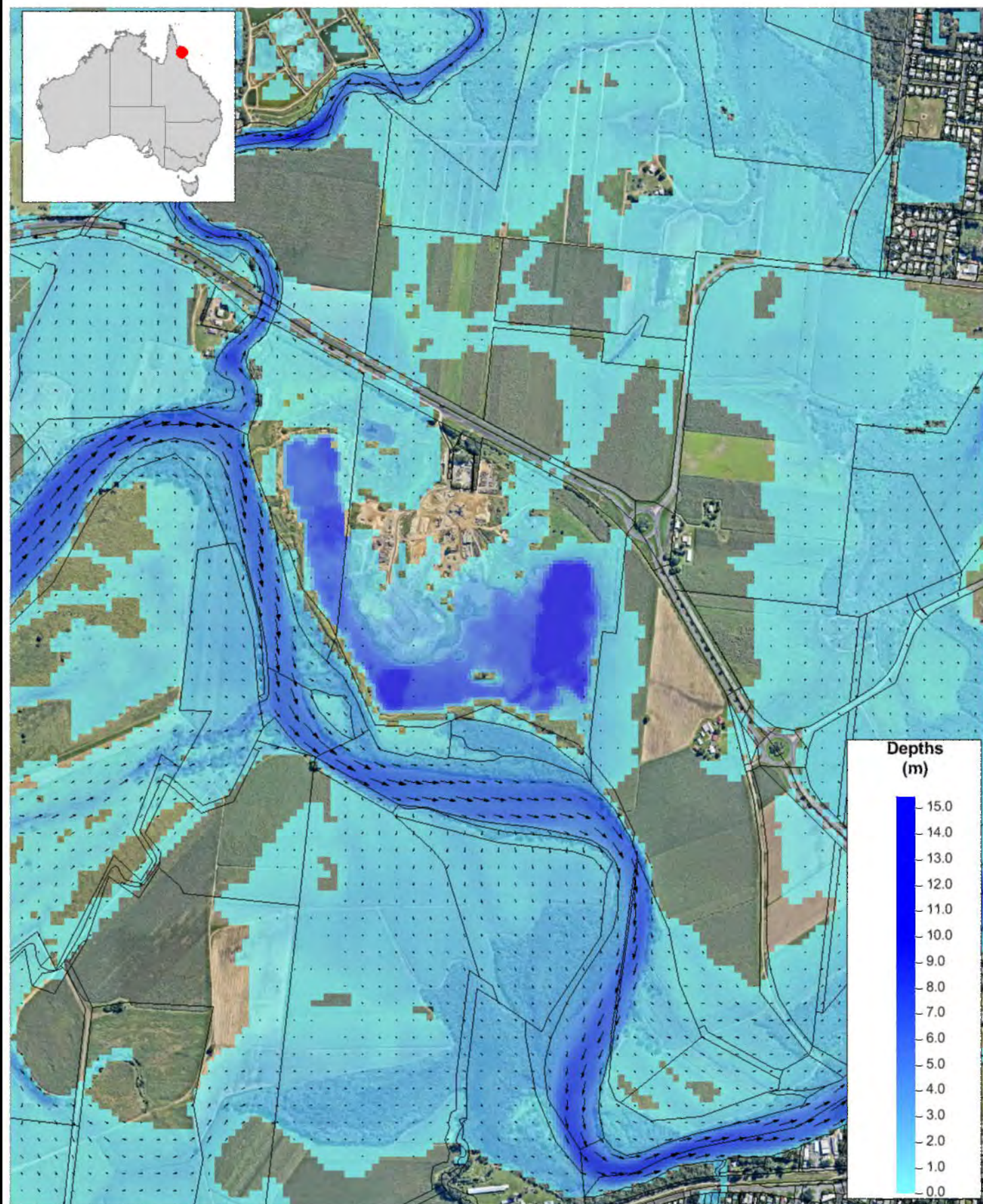
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Title:
Northern Sands Placement Site
2 Year ARI Peak Depths - Pre-Placement Case

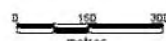
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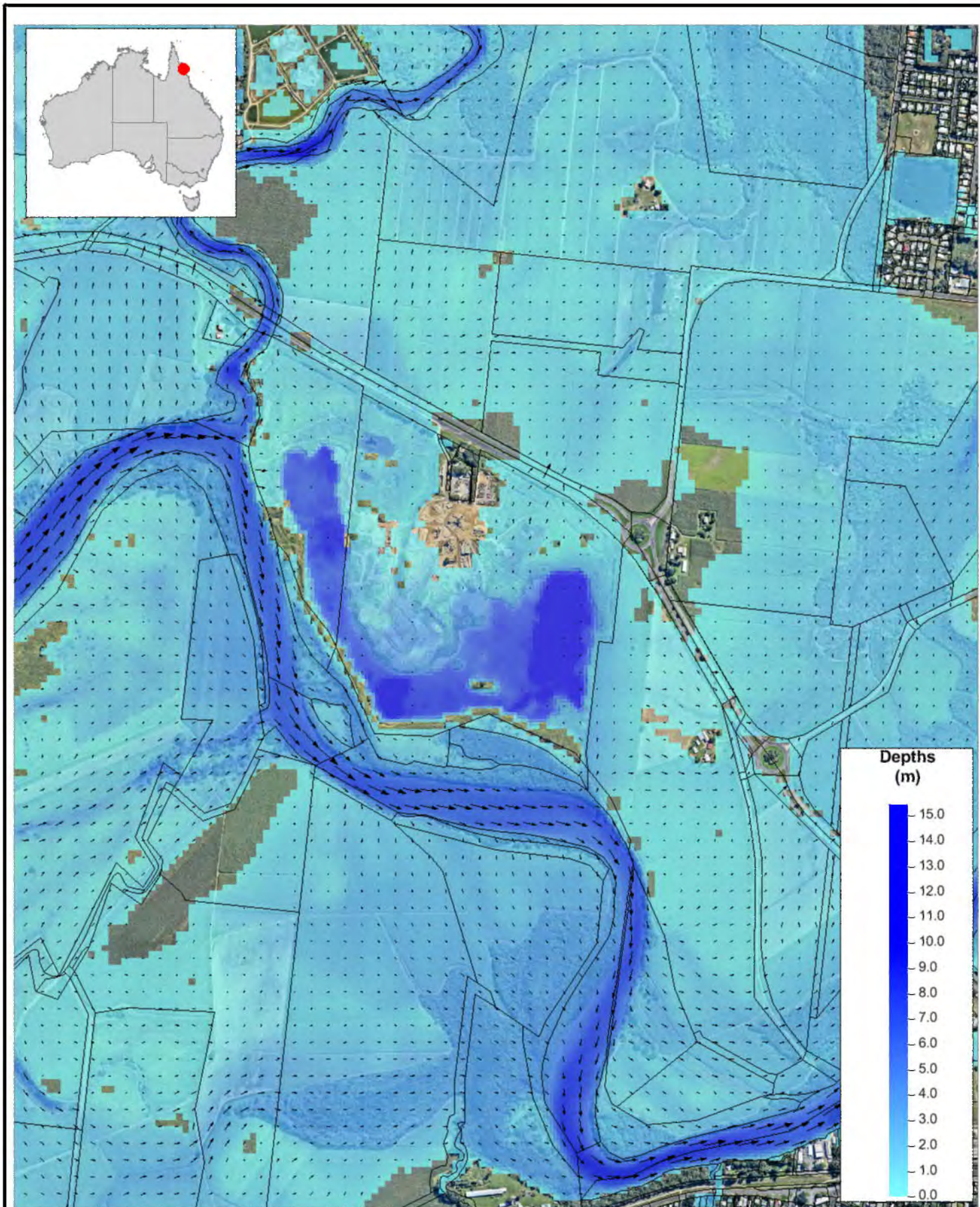
B-7

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Title:
Northern Sands Placement Site
5 Year ARI Peak Depths - Pre-Placement Case

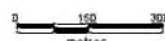
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B-8

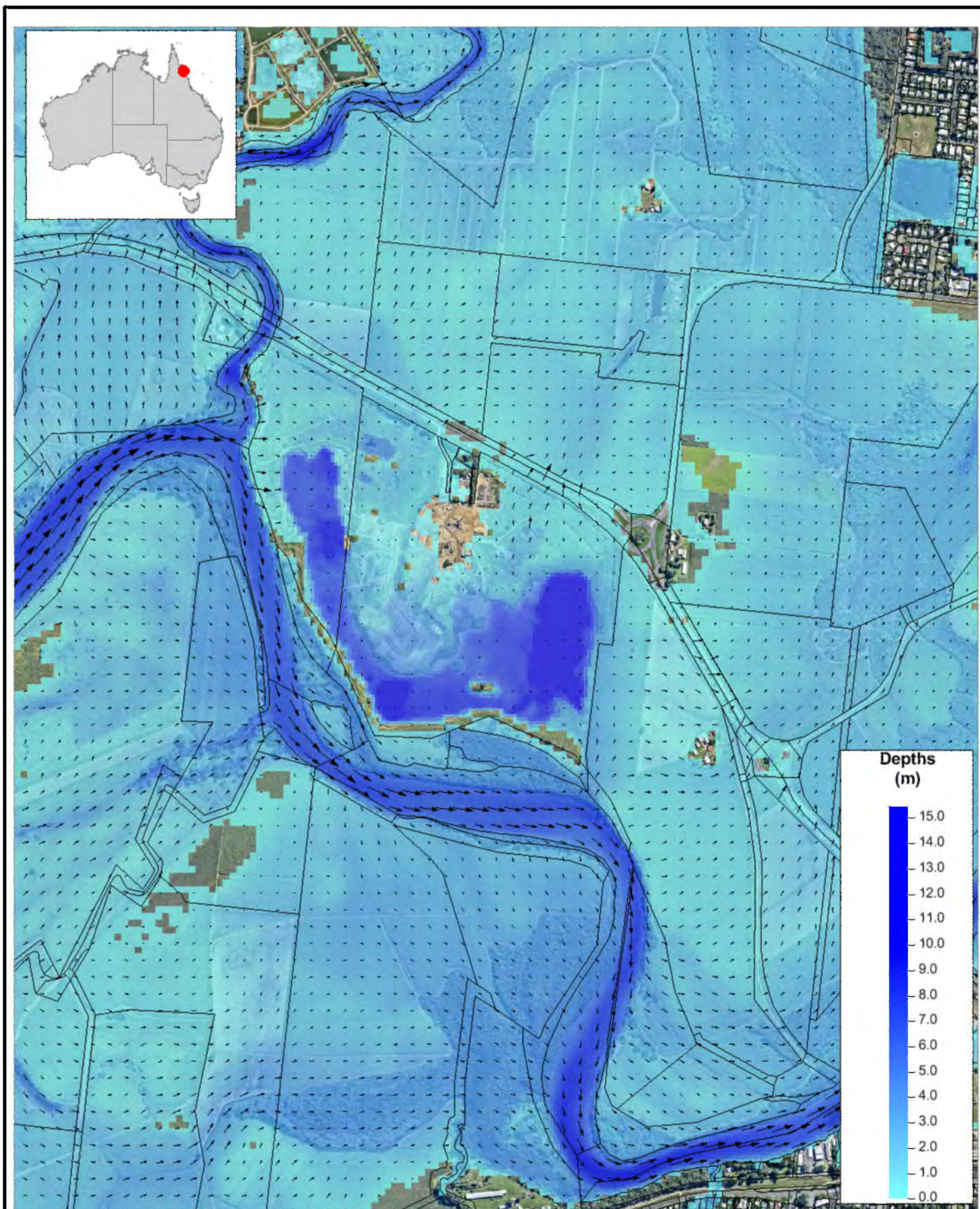
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Title:
Northern Sands Placement Site
10 Year ARI Peak Depths - Pre-Placement Case

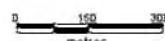
Figure:

B-9

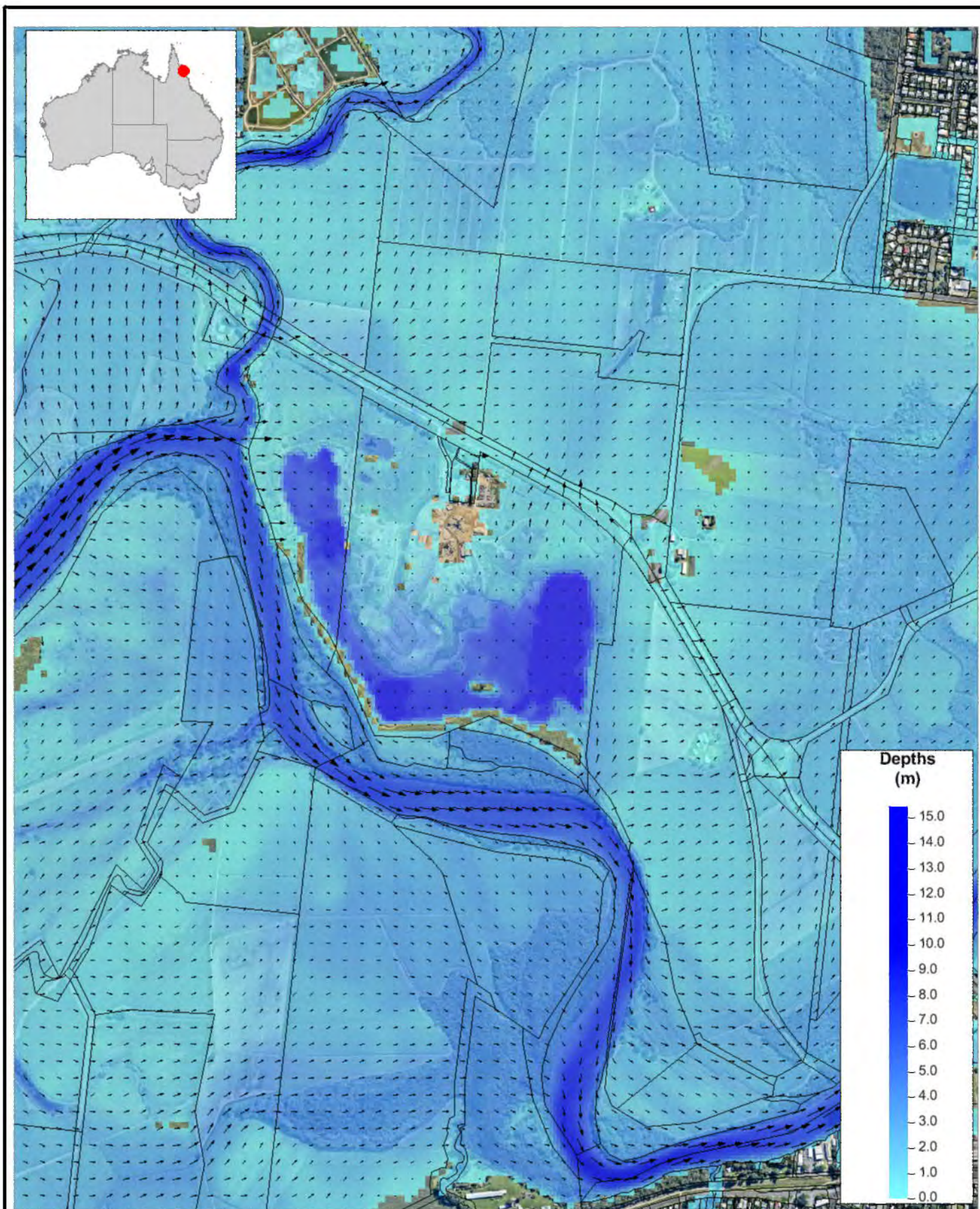
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Title:
Northern Sands Placement Site
20 Year ARI Peak Depths - Pre-Placement Case

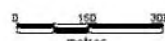
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B-10

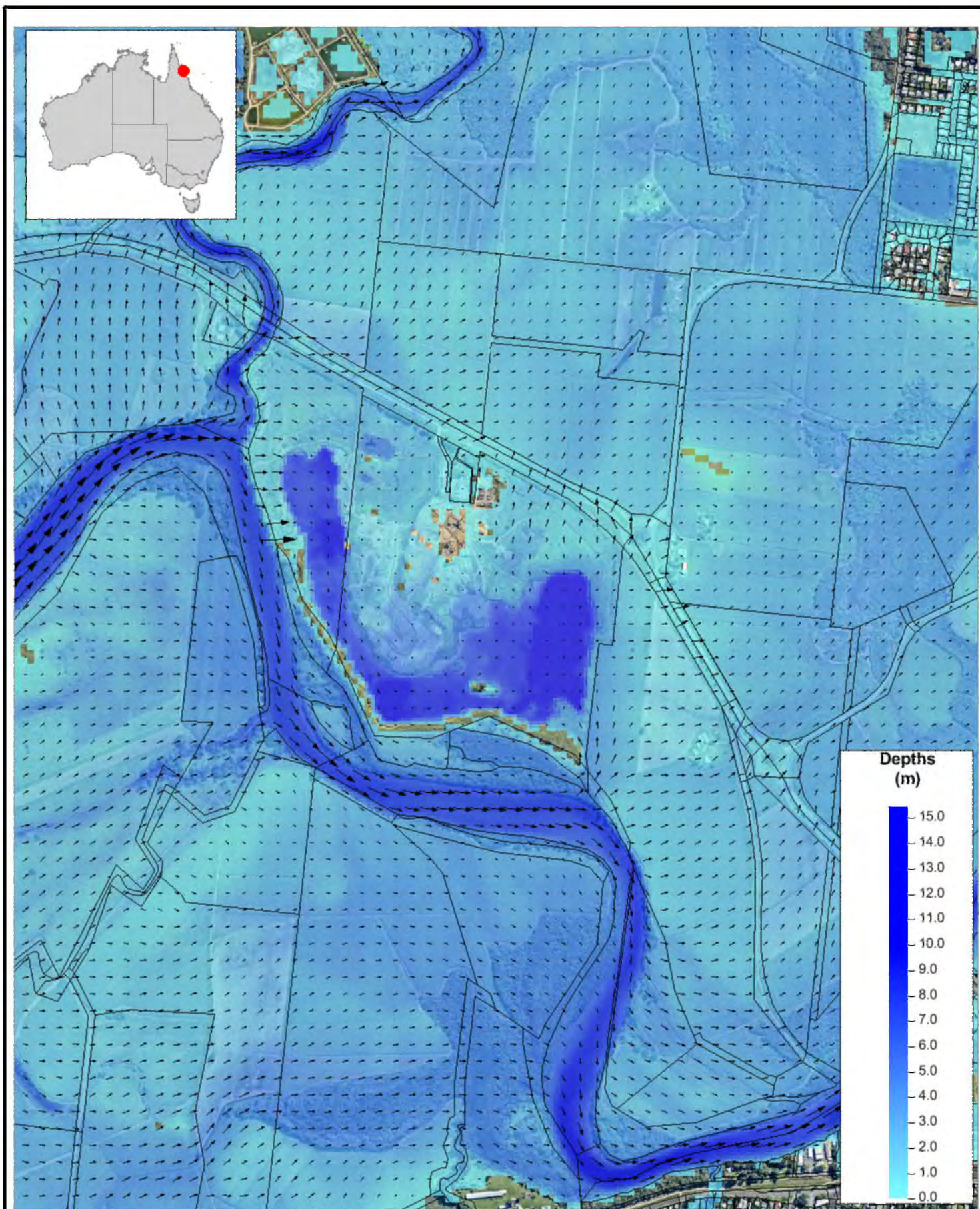
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Title:
Northern Sands Placement Site
50 Year ARI Peak Depths - Pre-Placement Case

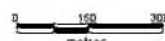
Figure:

B-11

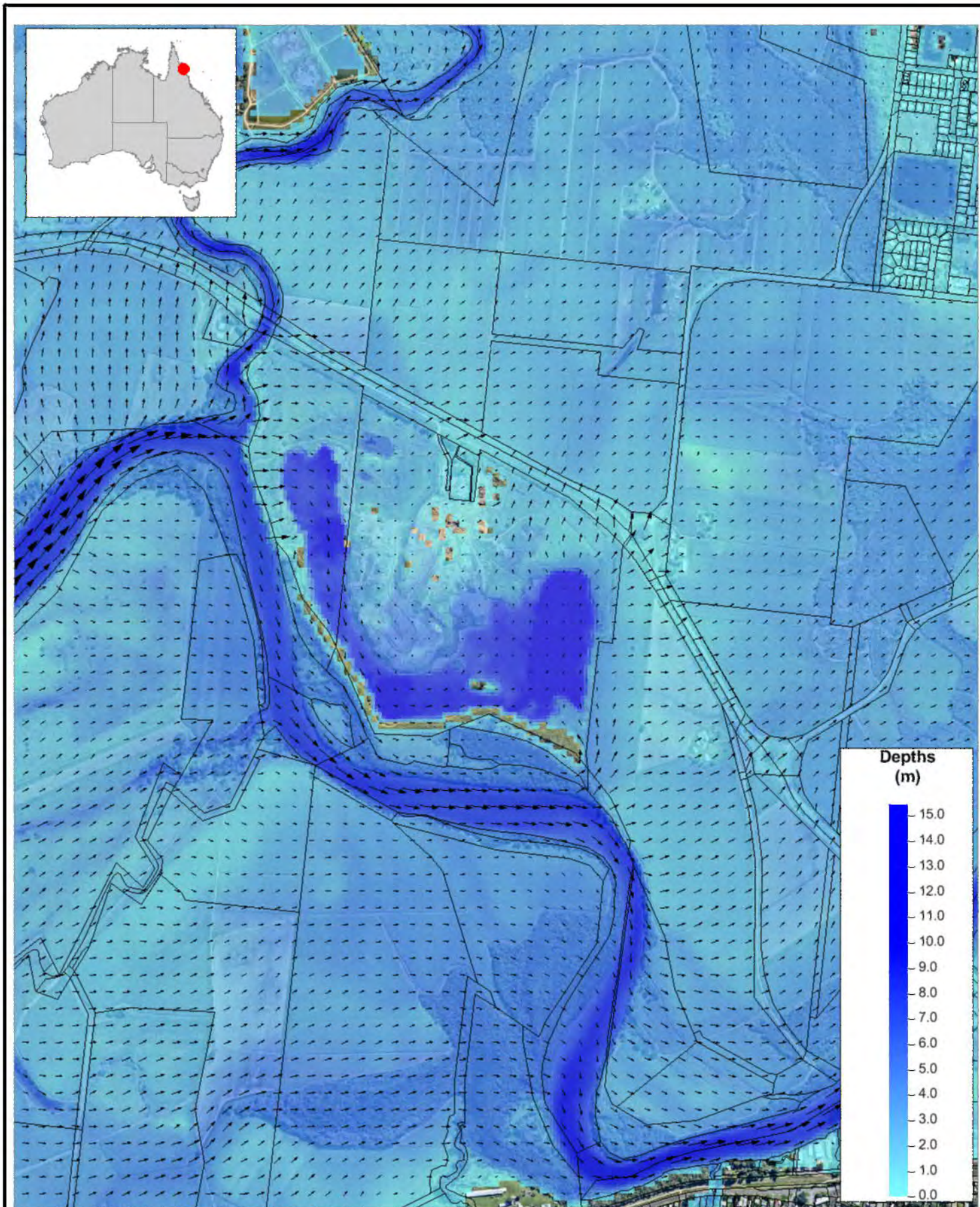
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Title:

Northern Sands Placement Site **100 Year ARI Peak Depths - Pre-Placement Case**

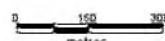
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B-12

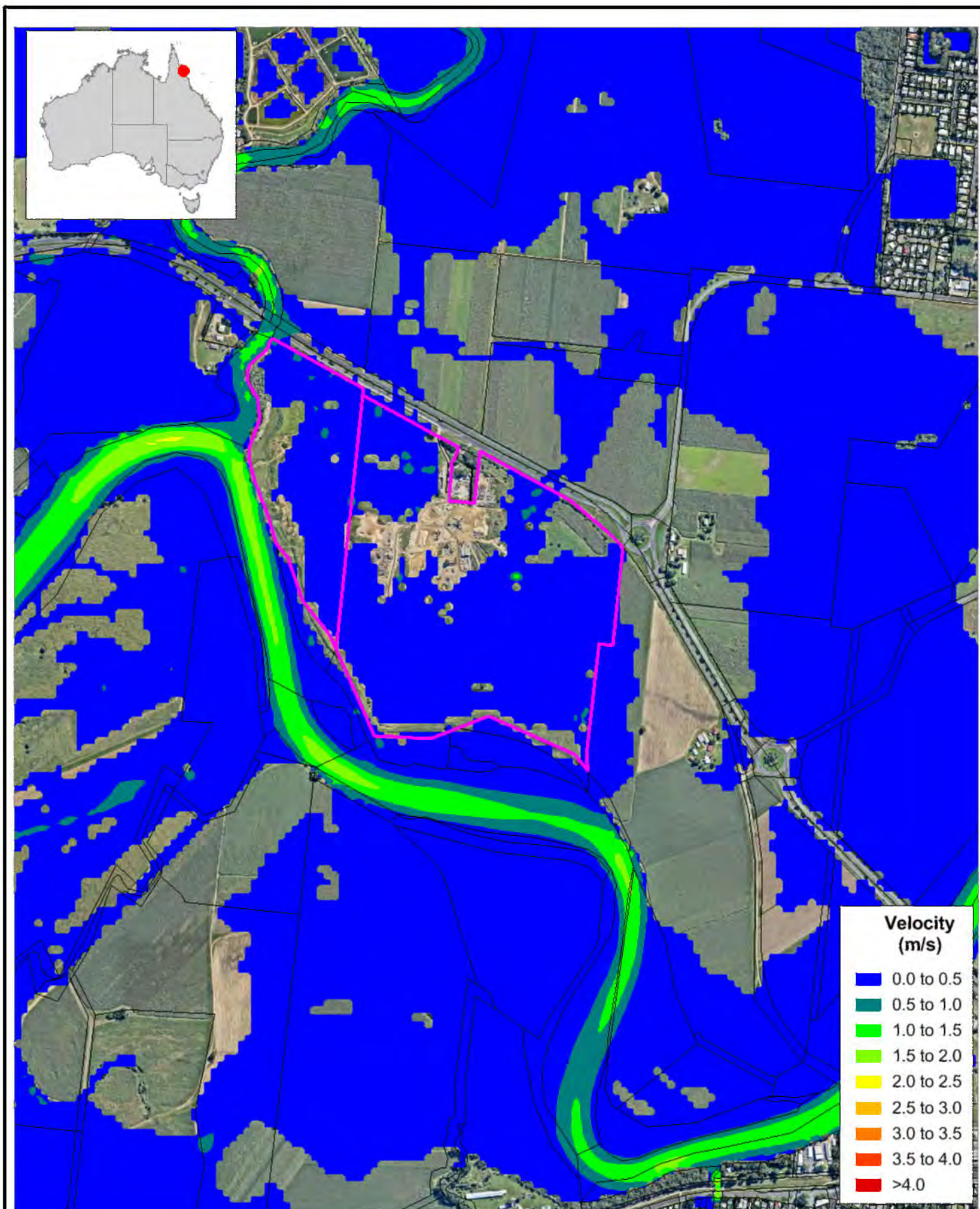
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Title:

Northern Sands Placement Site 2 Year ARI Peak Velocities - Pre-Placement Case

Figure:

B-13

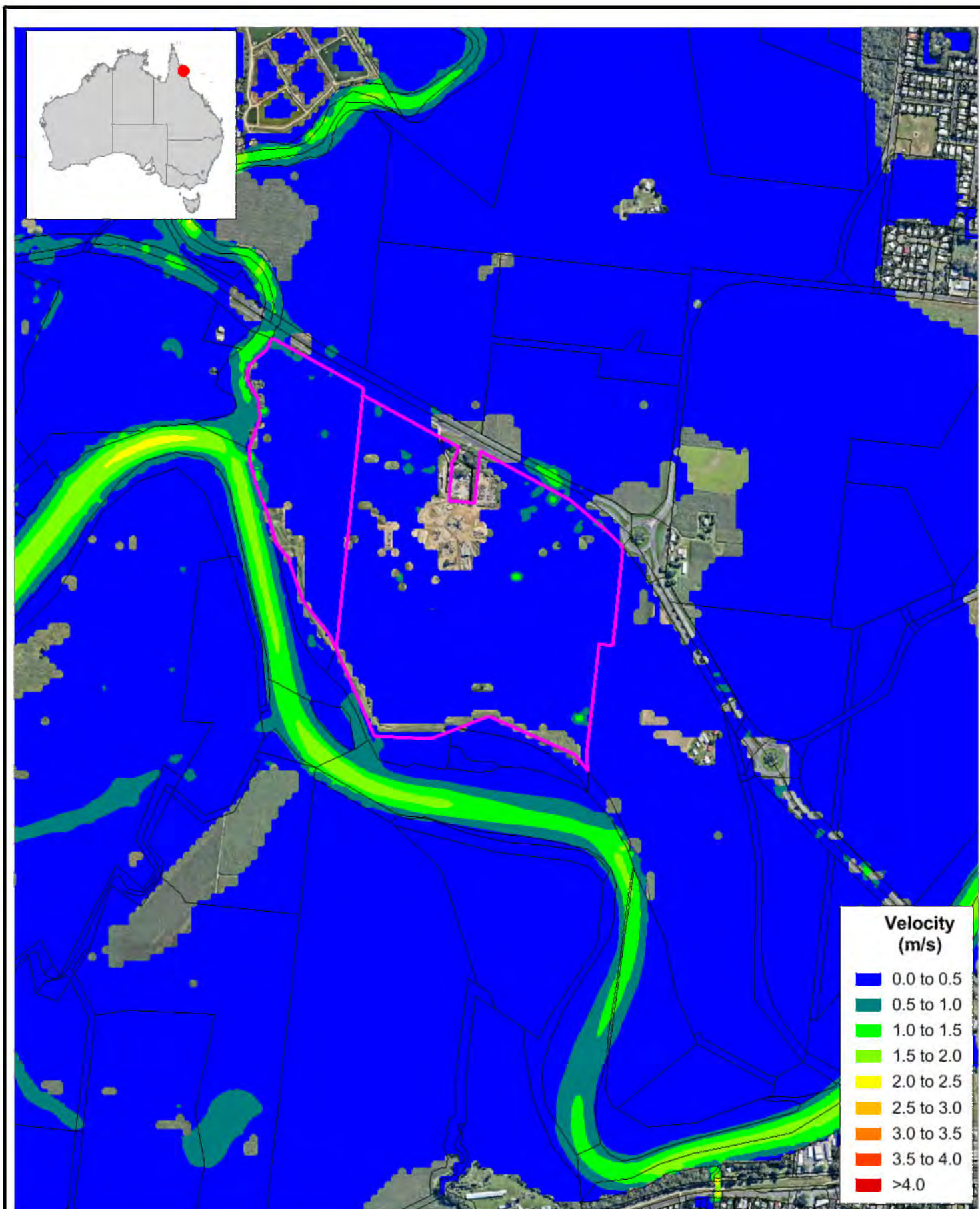
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Title:

Northern Sands Placement Site 5 Year ARI Peak Velocities - Pre-Placement Case

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Figure:

B-14

Rev:

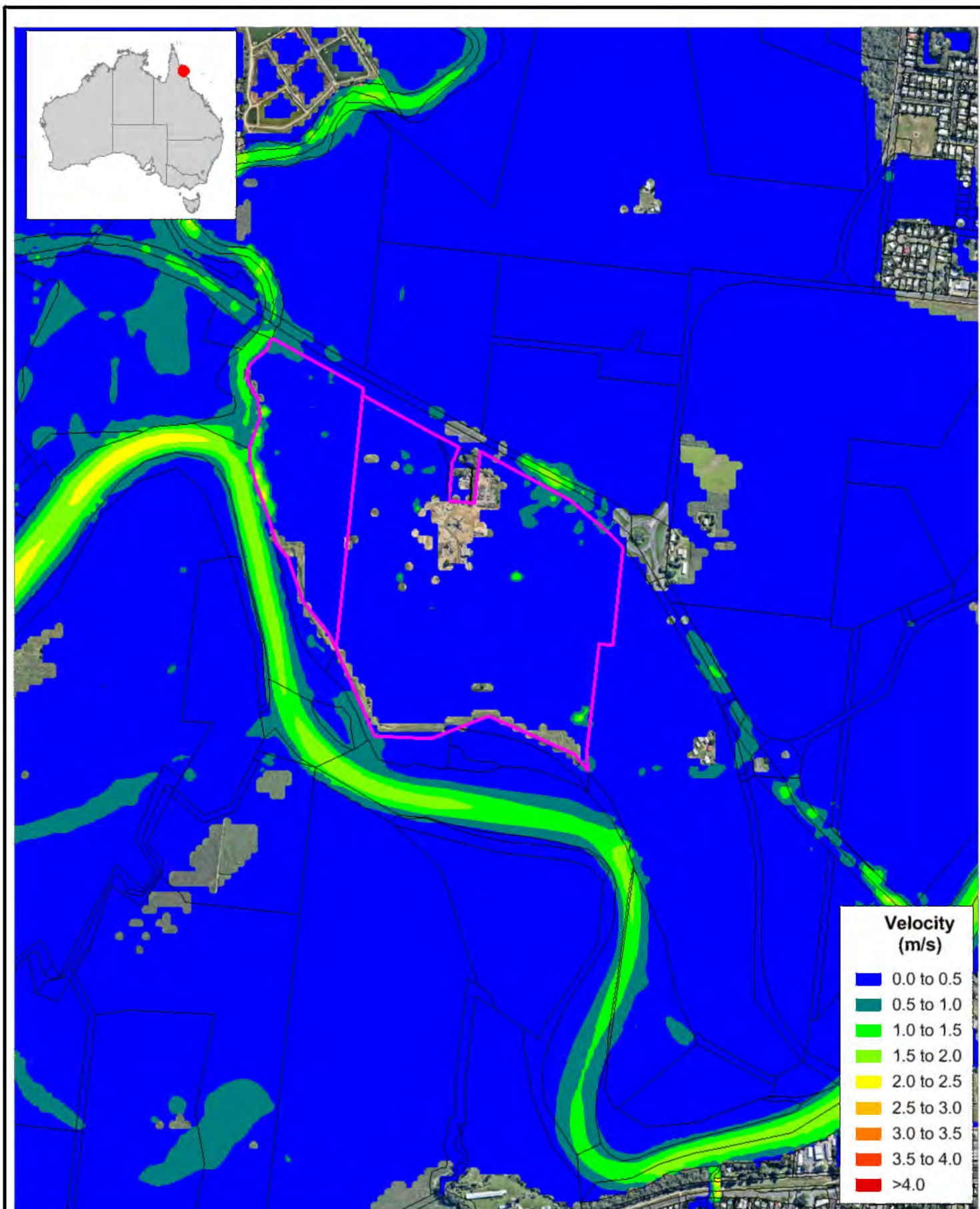
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Title:
Northern Sands Placement Site
10 Year ARI Peak Velocities - Pre-Placement Case

Figure:

B-15

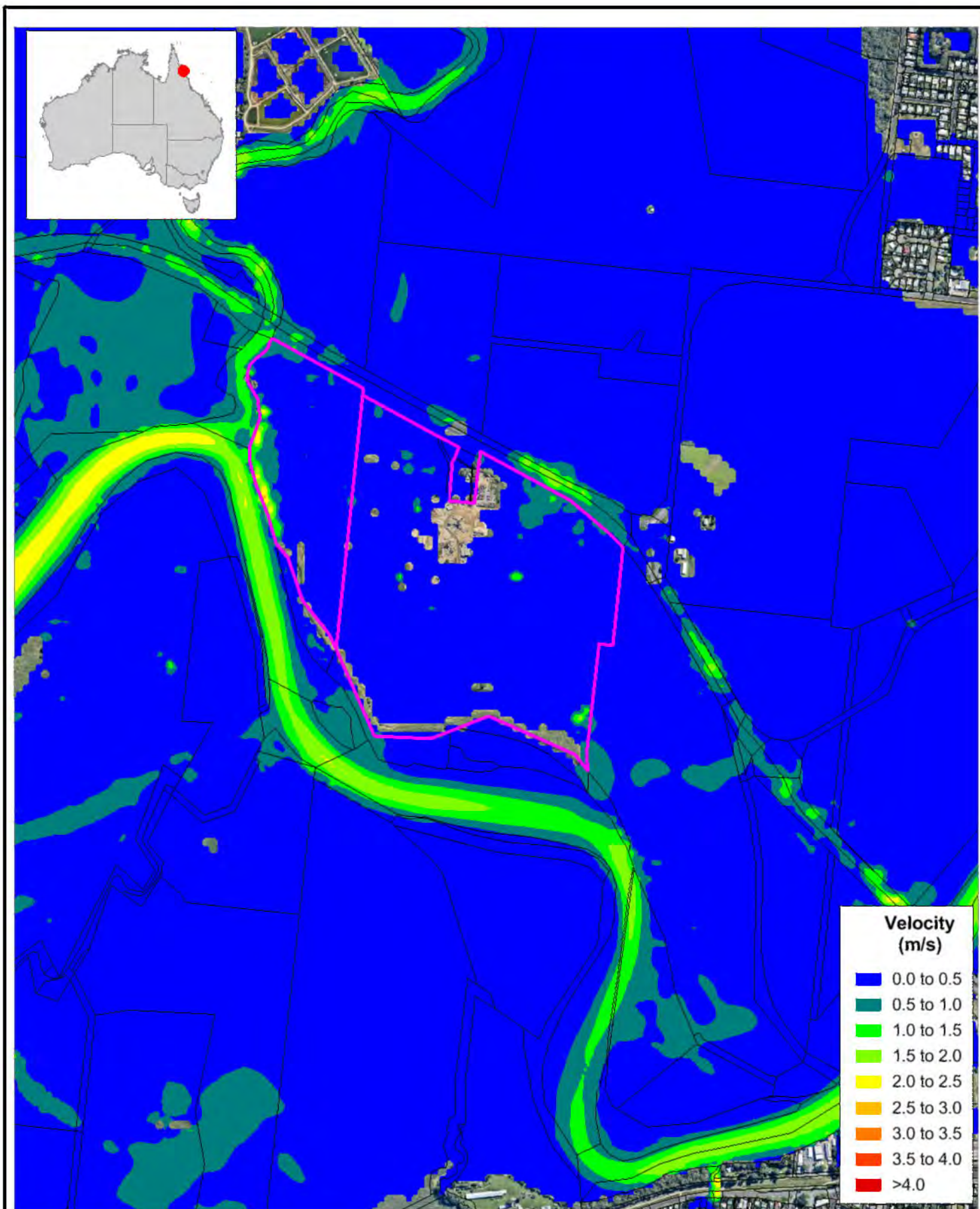
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Title:
Northern Sands Placement Site
20 Year ARI Peak Velocities - Pre-Placement Case

Figure:

B-16

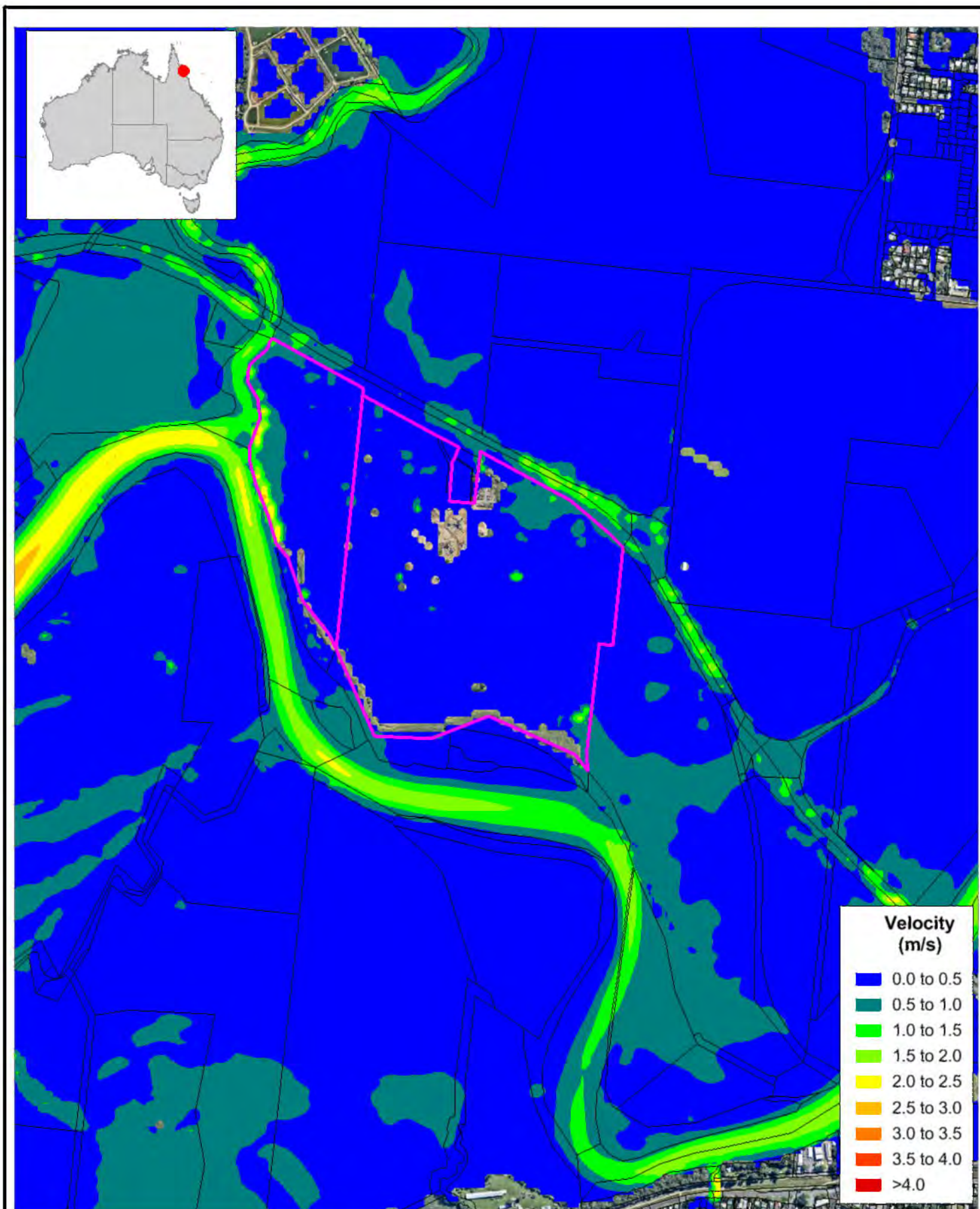
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Title:

Northern Sands Placement Site 50 Year ARI Peak Velocities - Pre-Placement Case

Figure:

B-17

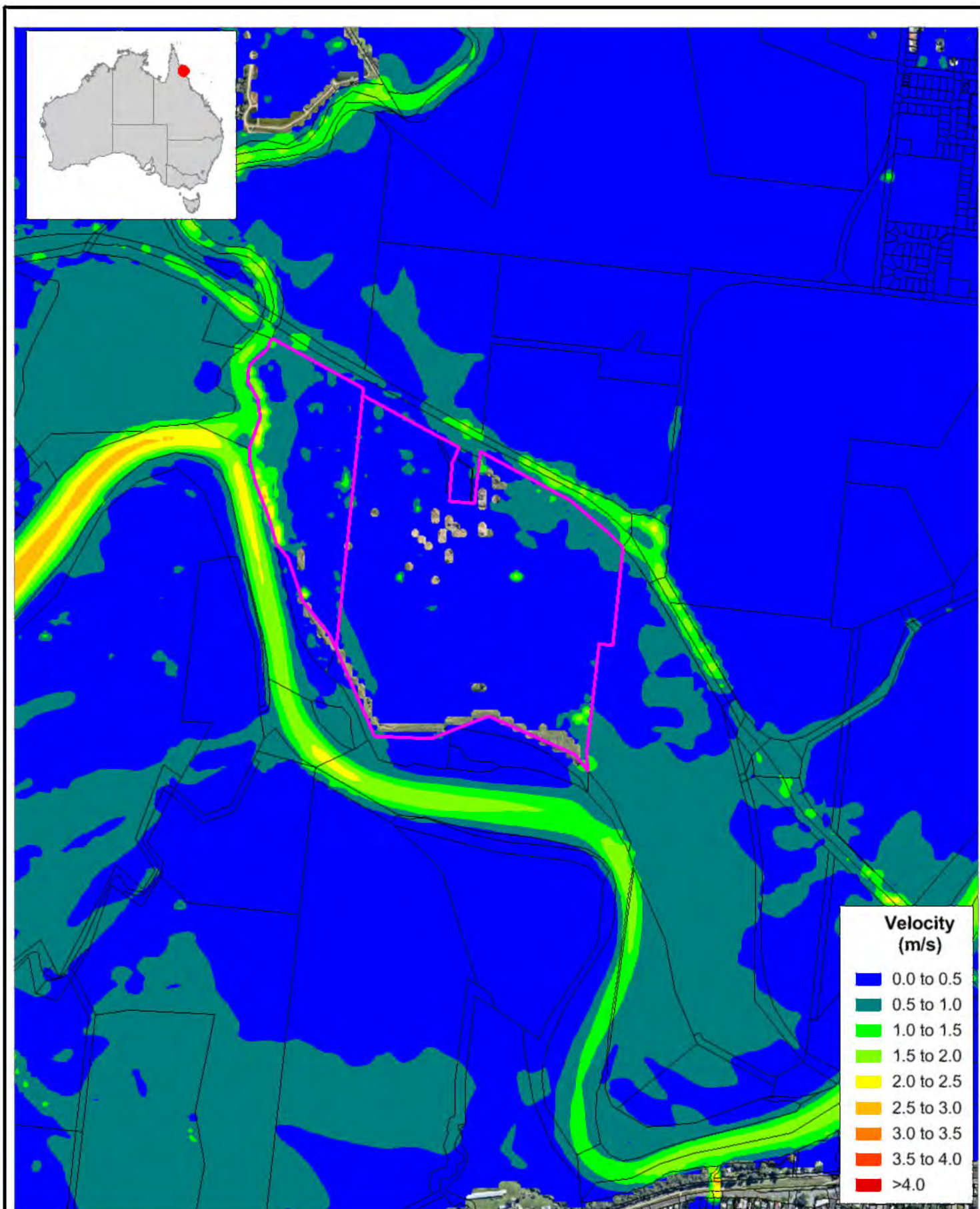
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Title:

Northern Sands Placement Site 100 Year ARI Peak Velocities - Pre-Placement Case

Figure:

B-18

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