Advisory Committee Meeting – 19 May 2021

TWEED SAND BYPASSING

- Project Monitoring / Operational Overview
    - Sand bypassing system operations + delivery program
    - Environmental Monitoring
    - Entrance conditions, usage and survey
    - TSB projects and enhancements
    - Communications

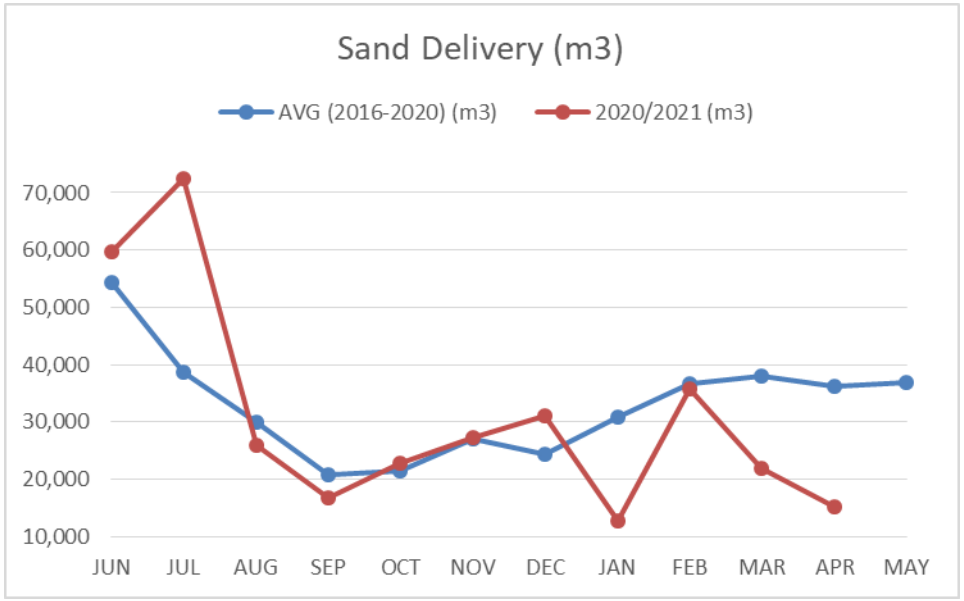
Sand Bypassing System Operations + Delivery Program

TWEED SAND BYPASSING

Sand Delivery 2021

PUMPING BY JETTY MOUNTED SYSTEM 2021				
MONTH	Vol SRE (m3)	Vol D'Bah (m3)	Total Vol (m3)	AVG (2016-2020) (m3)
JAN	12,694	0	12,694	30,806
FEB	35,663	0	35,663	36,734
MAR	3,067	18,854	21,921	37,910
APR	6,934	8,257	15,191	36,147
MAY			0	36,781
JUN			0	54,292
JUL			0	38,703
AUG			0	29,977
SEP			0	20,653
OCT			0	21,390
NOV			0	26,948
DEC			0	24,342
TOTAL	**58,358**	**27,111**	**85,469**	**394,684**

Pumping monthly trends

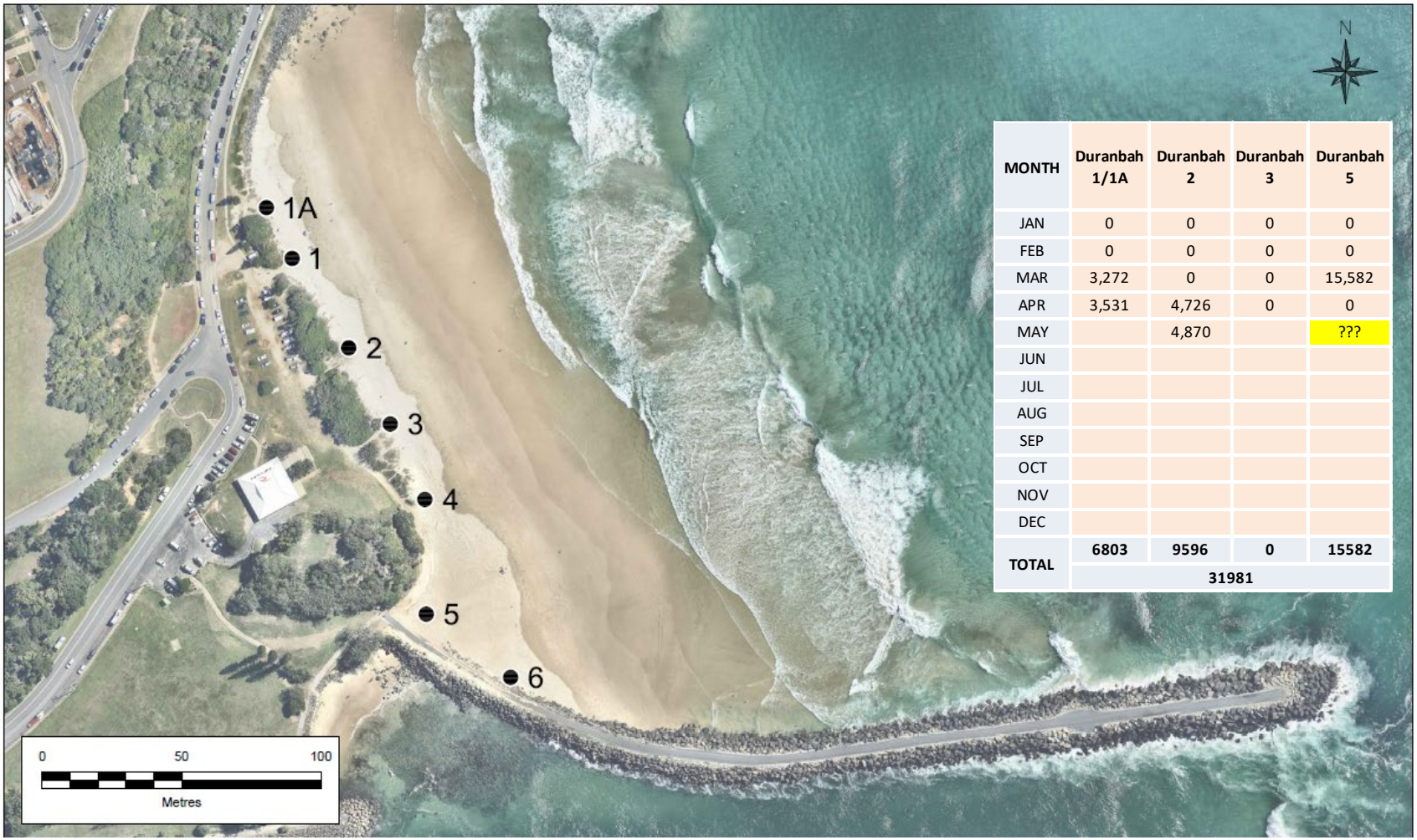


Duranbah Pumping March, April May 2021

28 December 2020 – After December Erosion

10 March 2021 – Prior to Pumping

Duranbah Pumping March, April May 2021

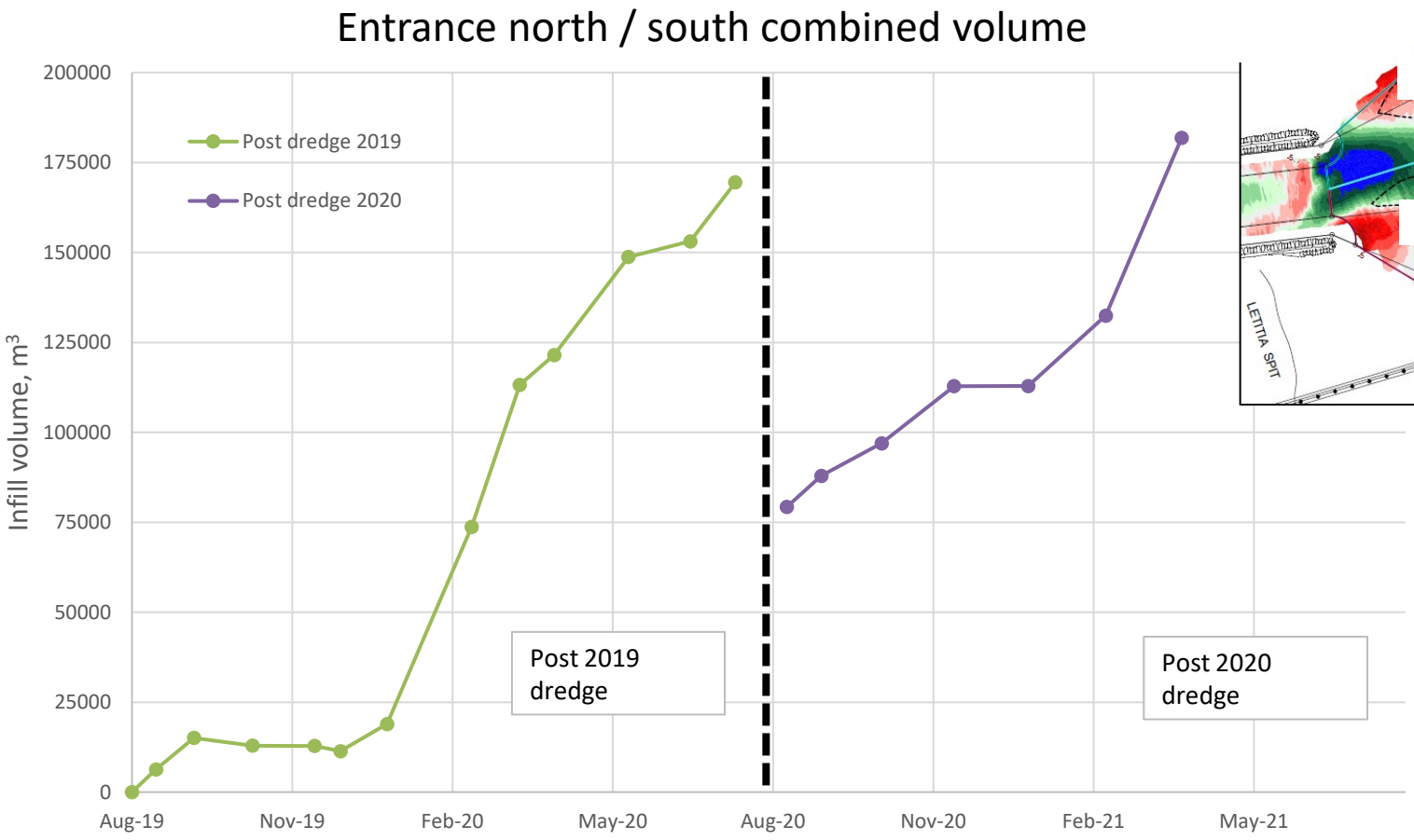


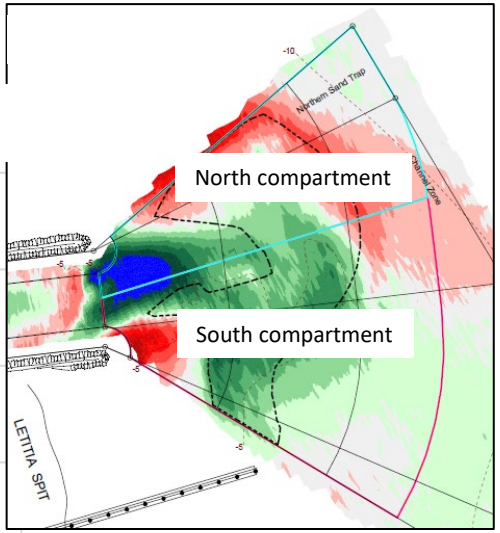
MONTH	Duranbah 1/1A	Duranbah 2	Duranbah 3	Duranbah 5
JAN	0	0	0	0
FEB	0	0	0	0
MAR	3,272	0	0	15,582
APR	3,531	4,726	0	0
MAY		4,870		???
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL	**6803**	**9596**	**0**	**15582**
	31981			

Duranbah Pumping March, April May 2021

8 May 2021 (Southern corner to have more sand placed)

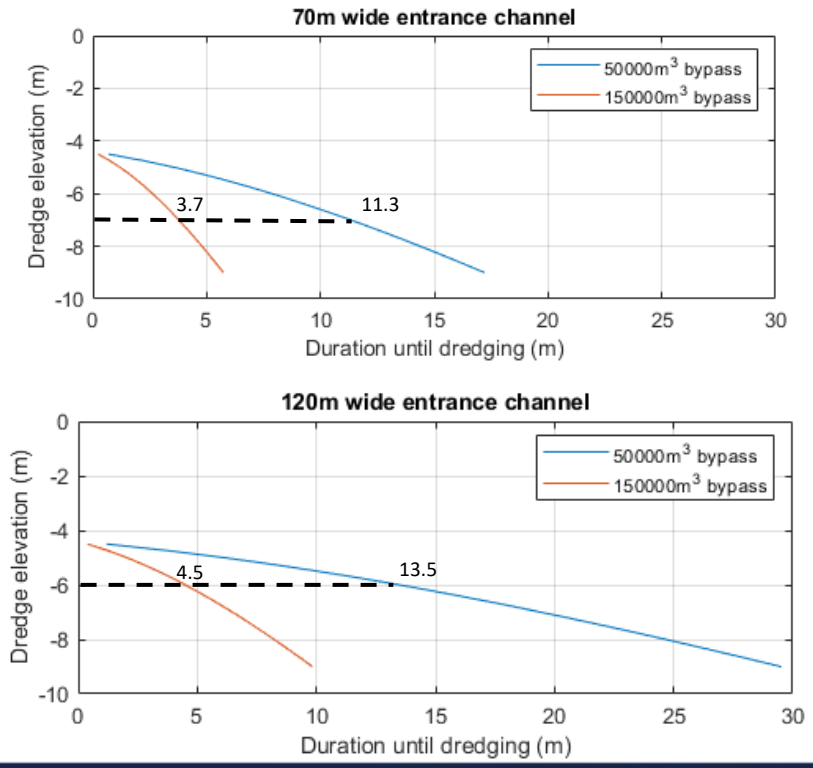
August 2021 Dredge Planning

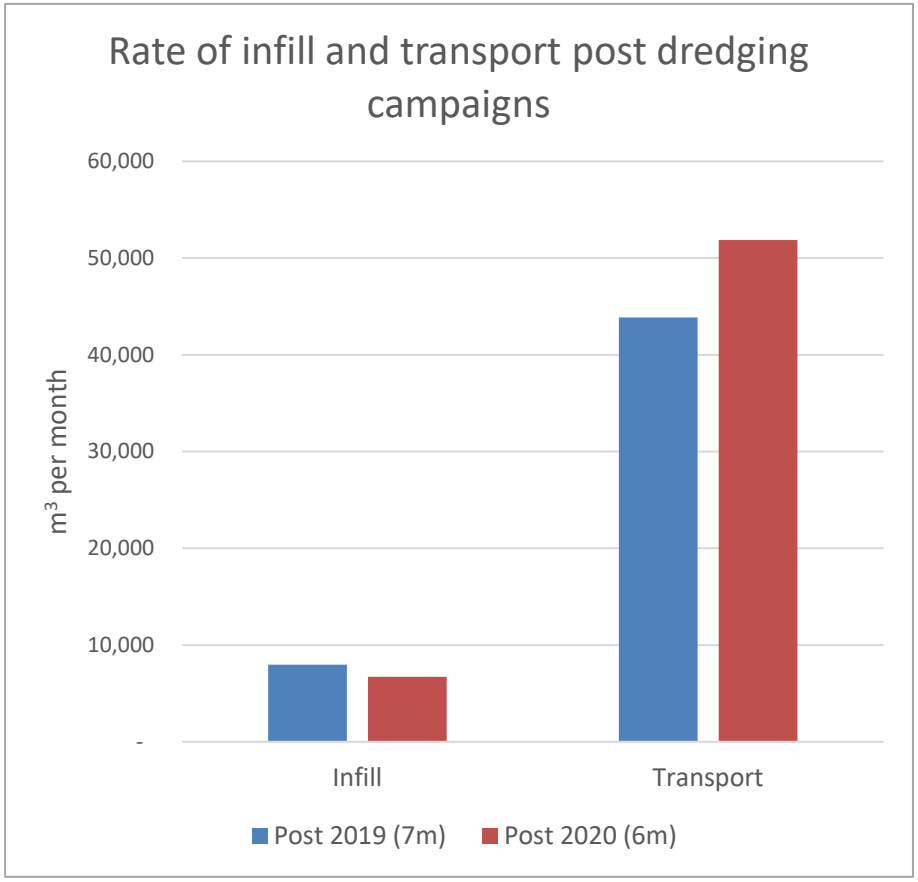




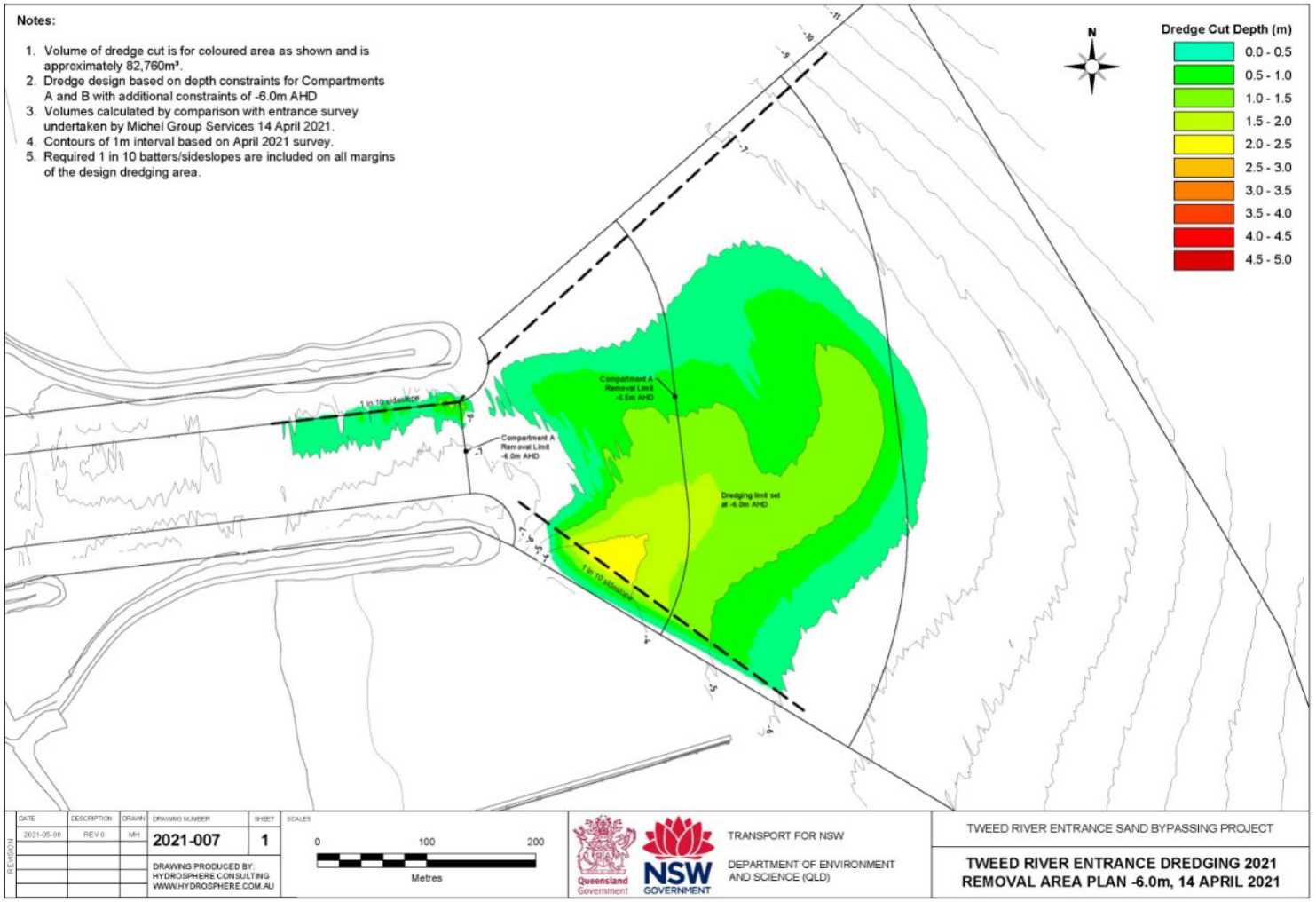
August 2021 Dredge Planning

Dredge area width / dredge design elevation theory

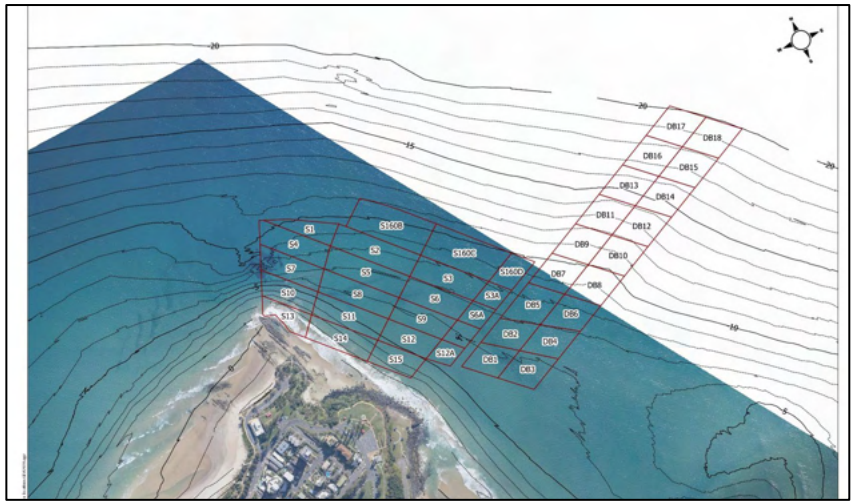




August 2021 Dredge Planning



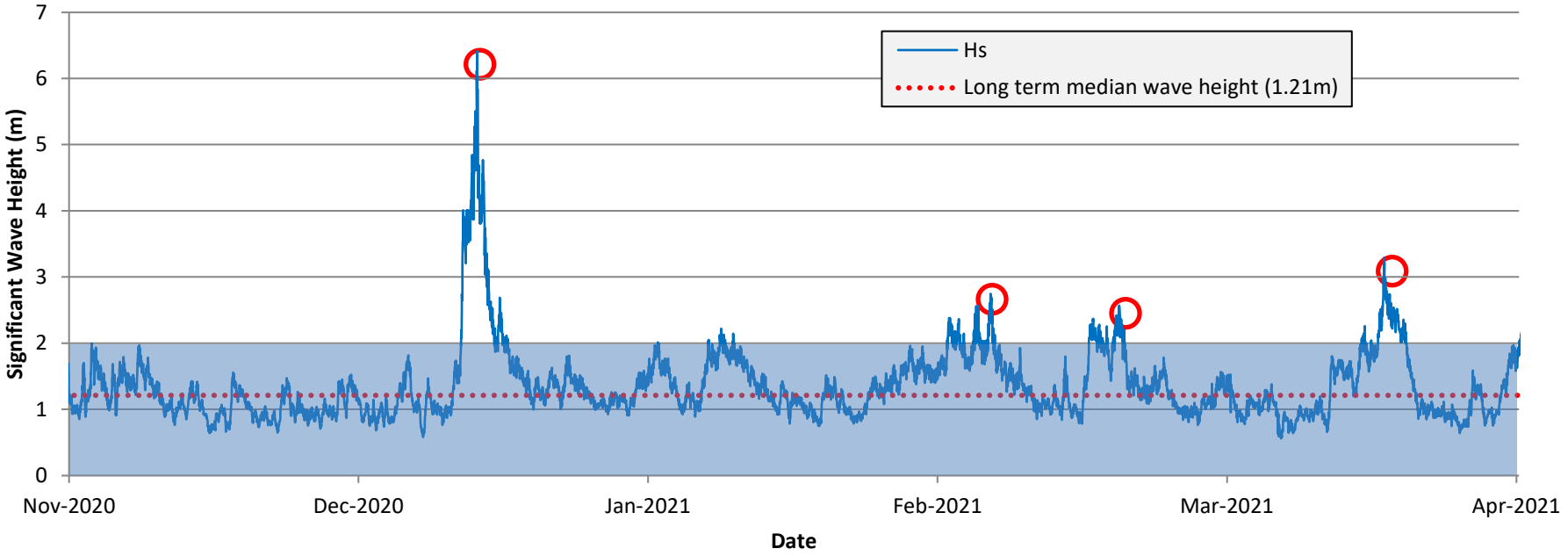
August 2021 Dredge Planning



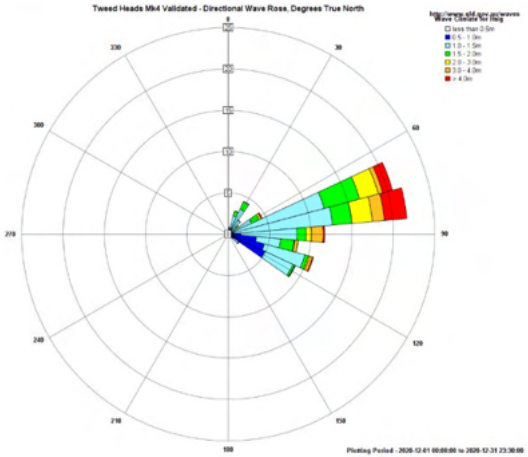
Environmental Monitoring

TWEED SAND BYPASSING

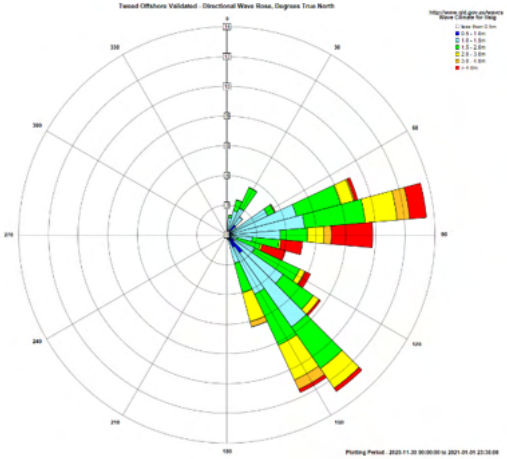
Wave Data – Nov 2020 to Apr 2021

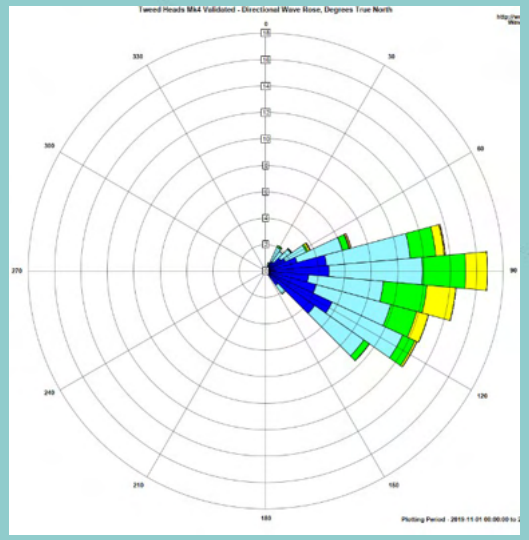


December 2020 nearshore

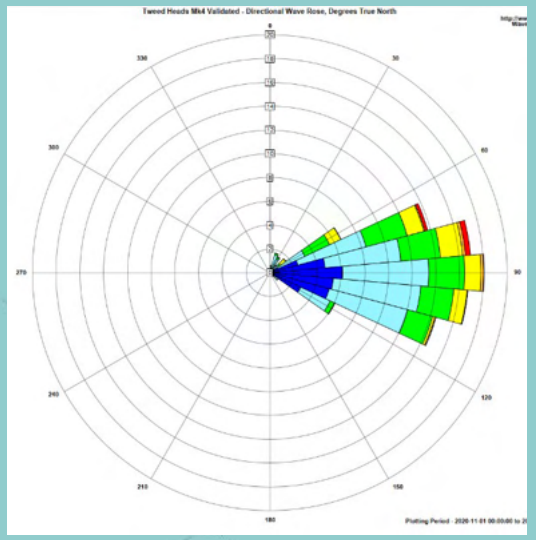


December 2020 offshore



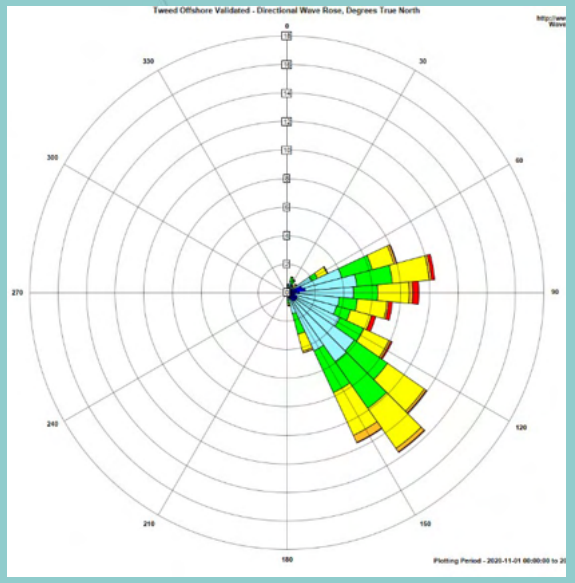


2019 Nov – 2020 Apr



2020 Nov – 2021 Apr

2020 Nov – 2021 Apr
OFFSHORE



Fingal

20 August 2020

28 October 2020

14 January 2021

20 April 2021

Letitia

20 April 2021

14 January 2021

Duranbah Beach

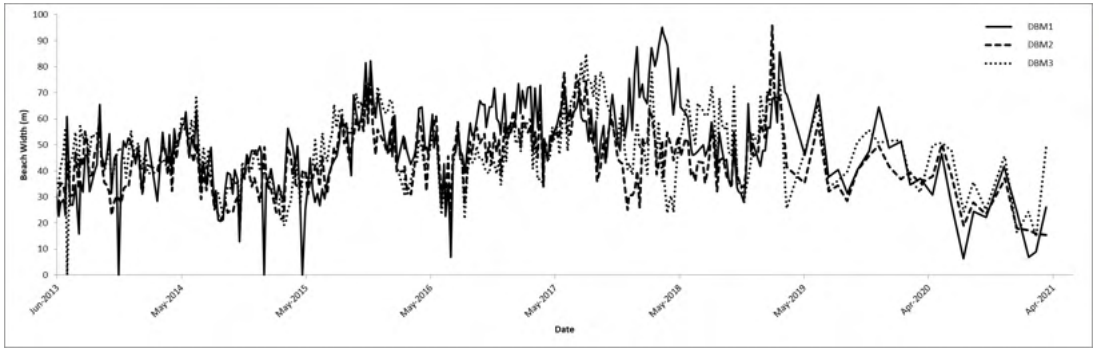
22 June 2020

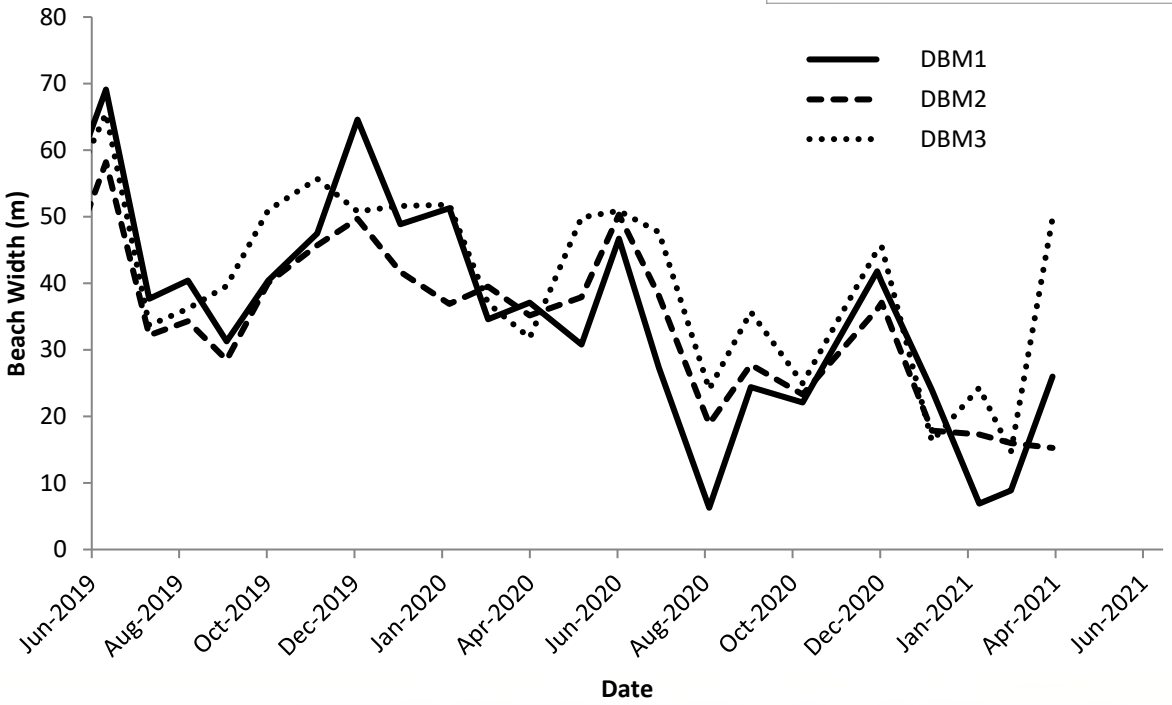
28 October 2020

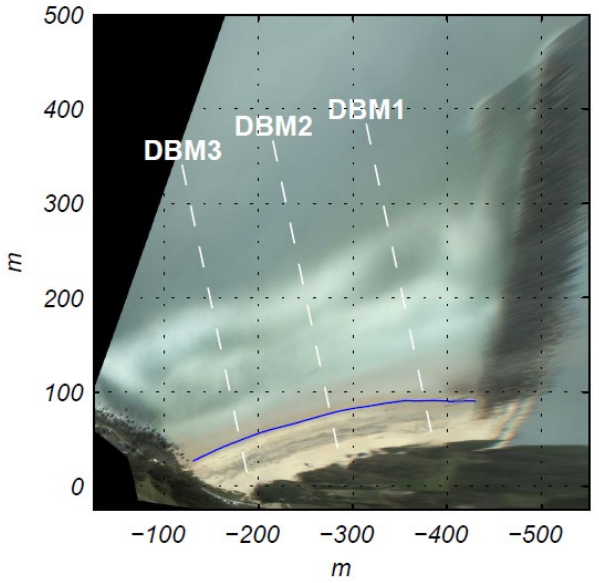
14 January 2021

20 April 2021

Duranbah – Beach width June 2019 to May 2021



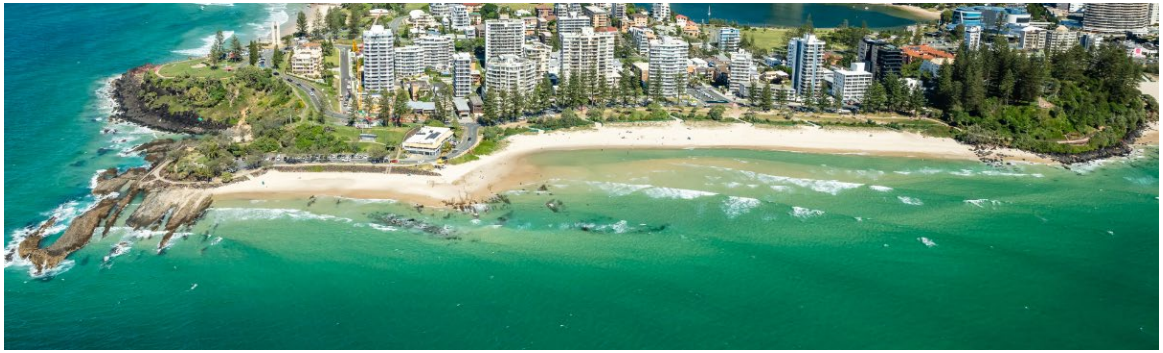




28 October 2020

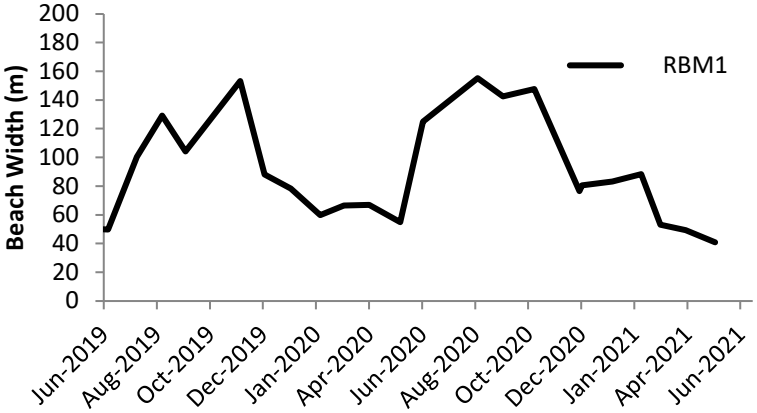
14 January 2021

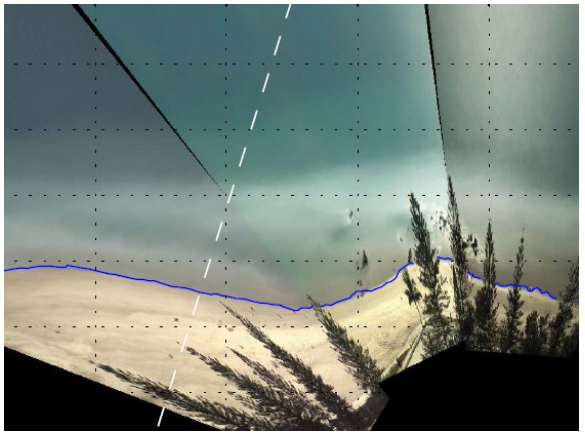
Snapper Rocks / Rainbow Bay

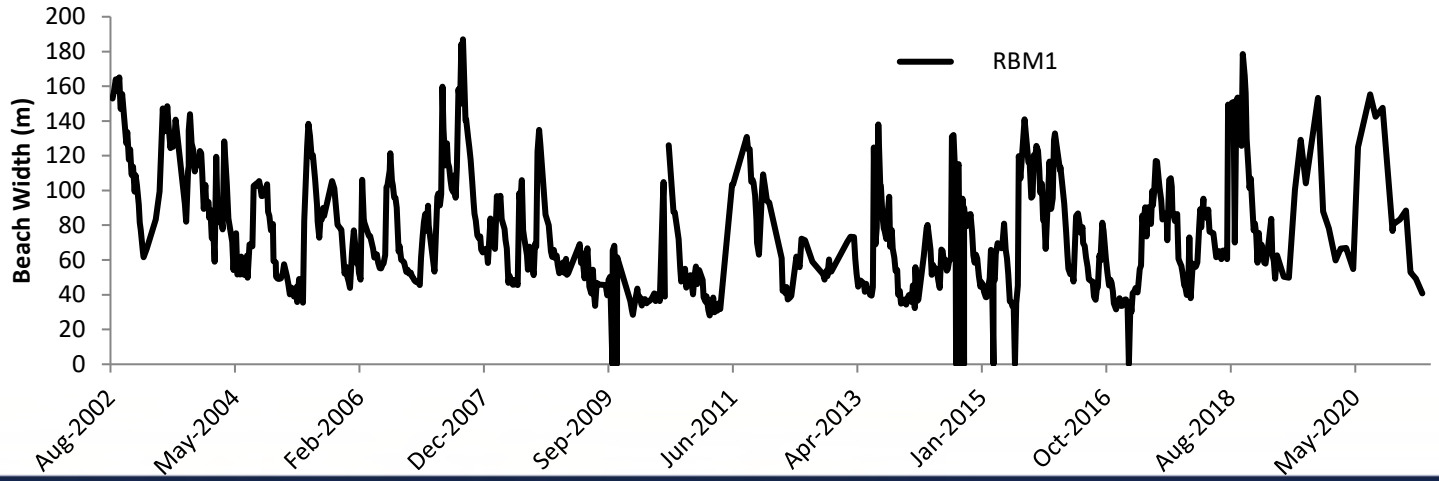


20 April 2021

Rainbow Bay – Beach width June 2019 to May 2021





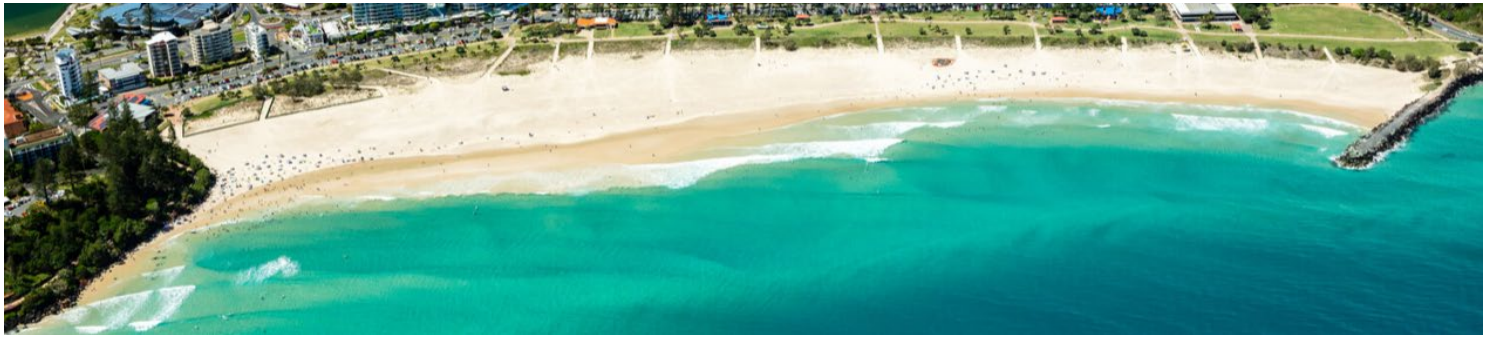


TWEEDSAND BYPASSING

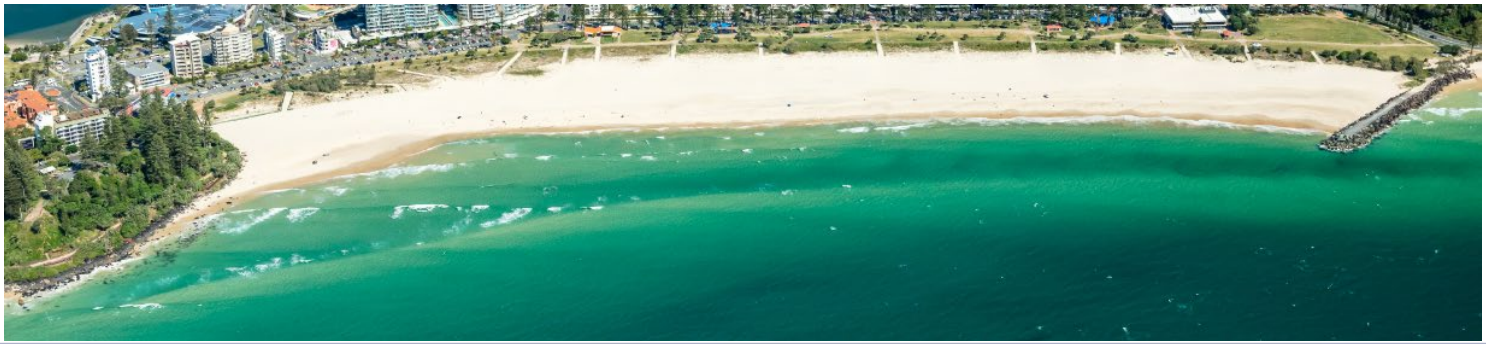
Restoring Coastal Sand Drift - Improving Boating Access

Coolangatta Bay

28 October 2020

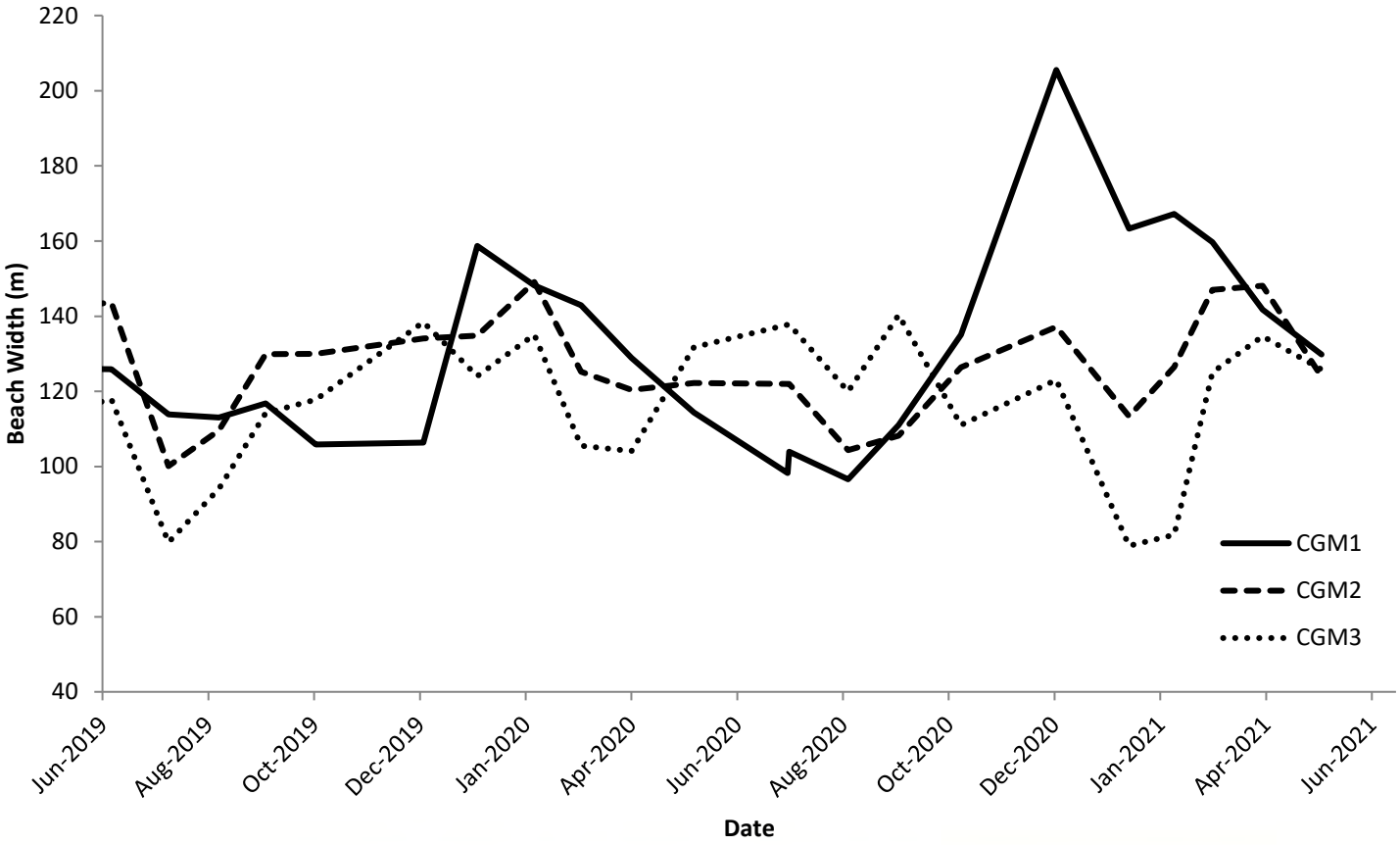


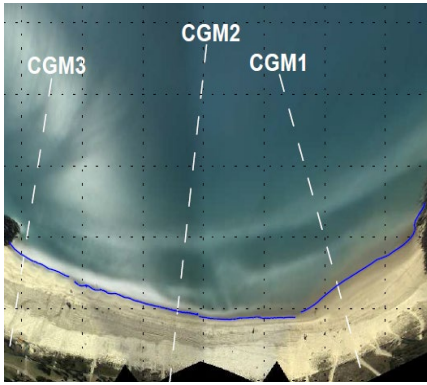
14 January 2021



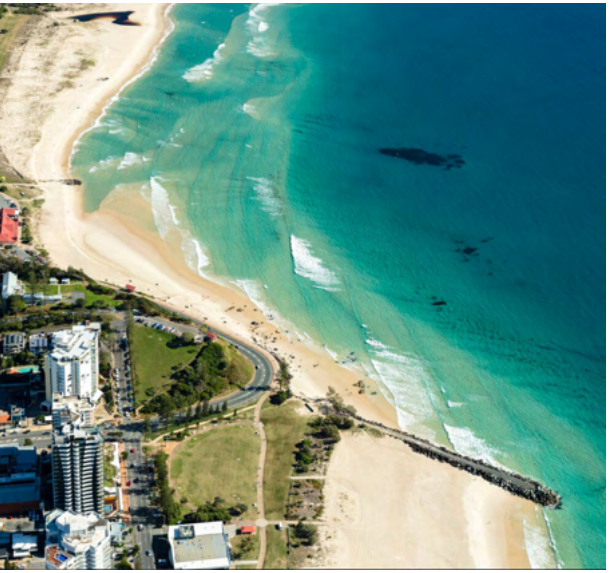
20 April 2021

Coolangatta – Beach width June 2019 to May 2021

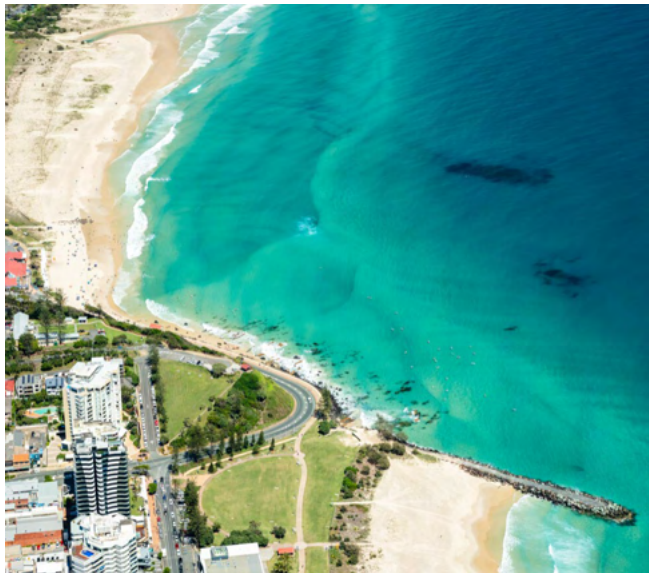




Kirra / Nth Kirra



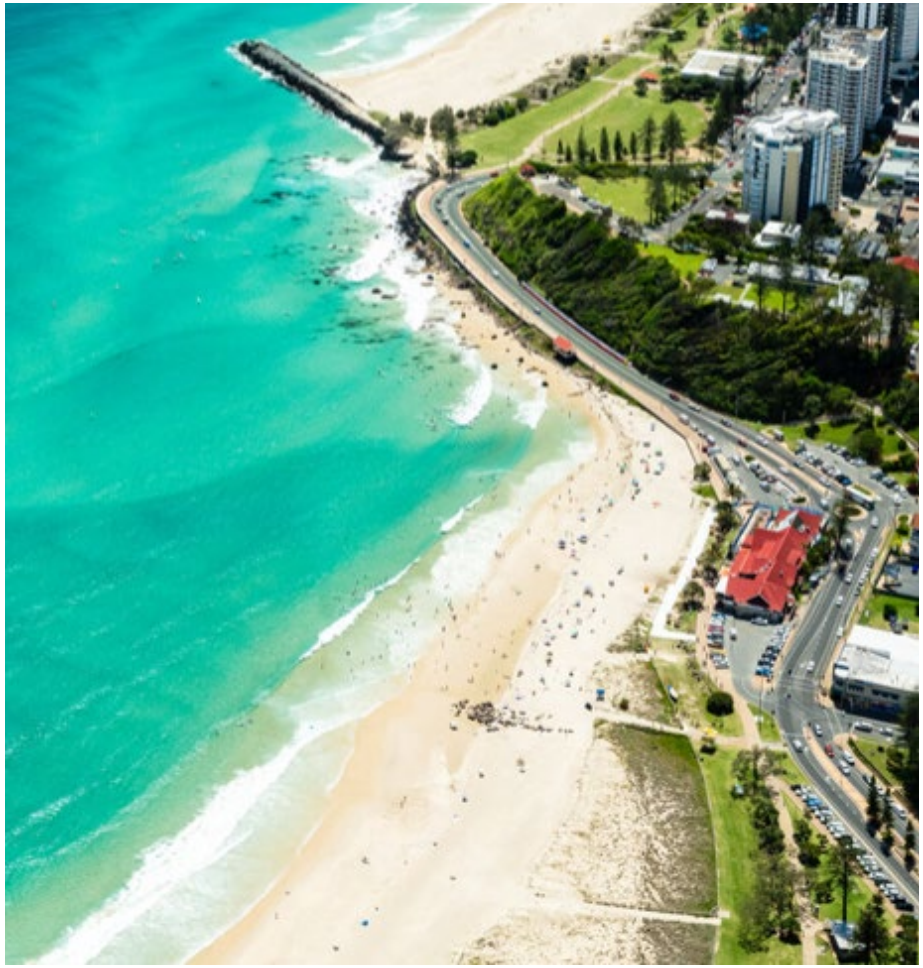
22 June 2020



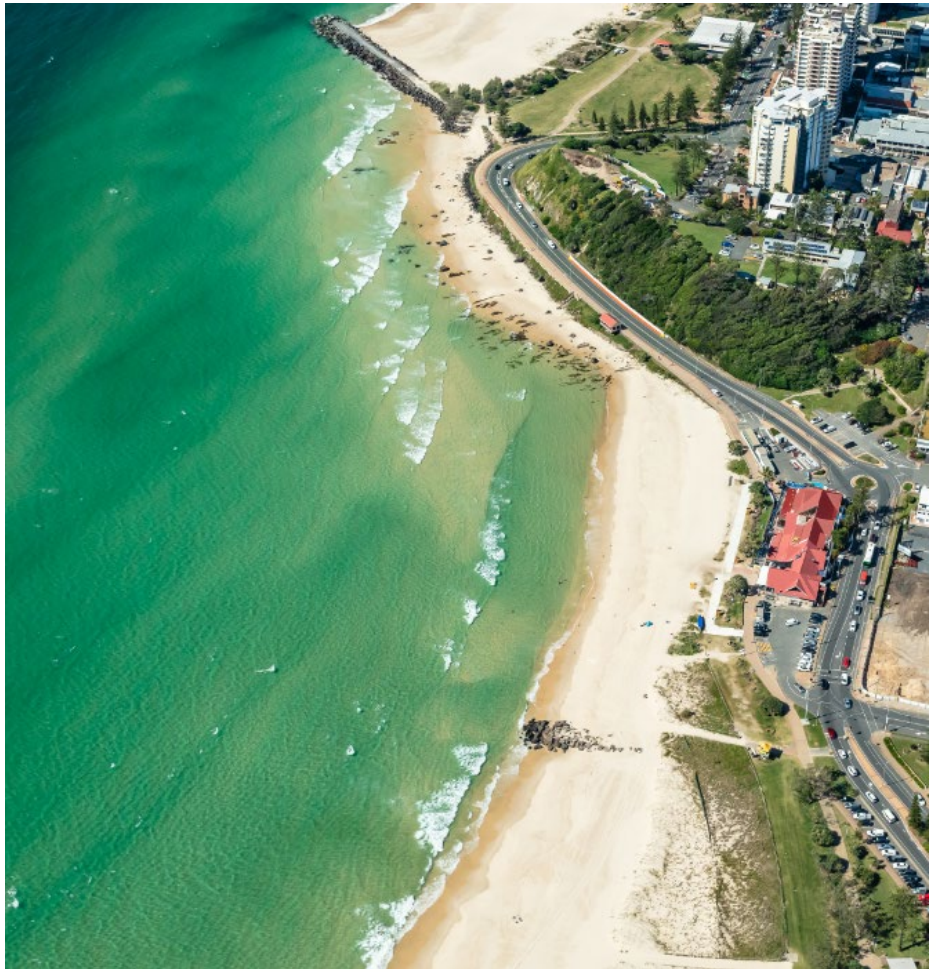
14 January 2021

20 April 2021

Kirra / Nth Kirra

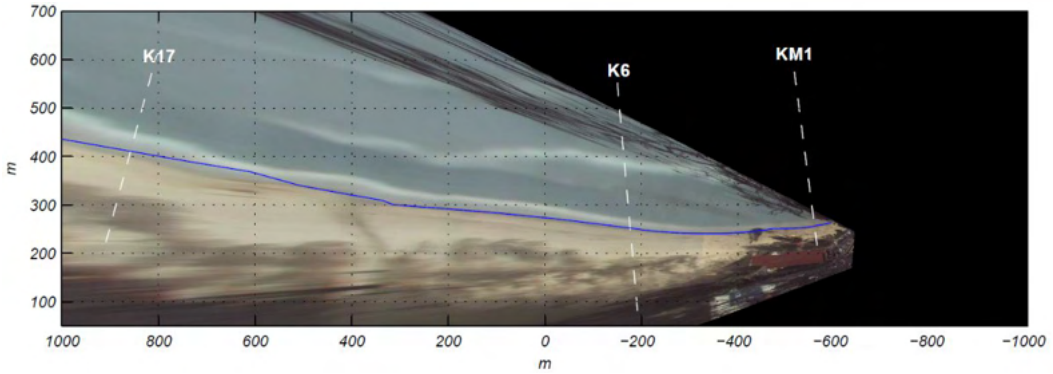


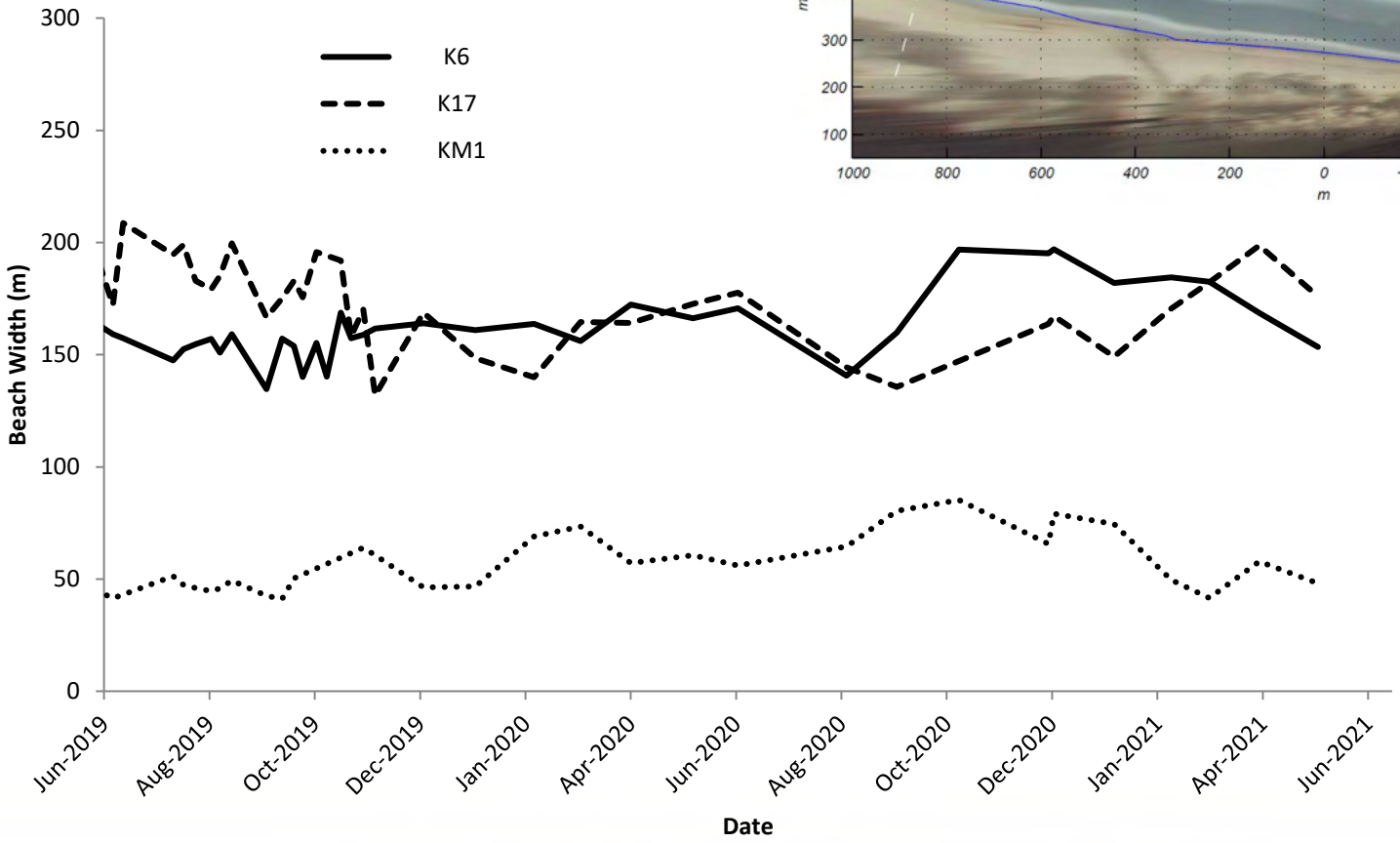
14 January 2021



20 April 2021

Kirra – Beach width June 2019 to May 2021





TWEEDSAND BYPASSING

Restoring Coastal Sand Drift - Improving Boating Access

TWEEDSAND BYPASSING

Restoring Coastal Sand Drift - Improving Boating Access

Time lapse – Duranbah beach


Surfonmars


SURFONMARS


Duranbah

Duranbah


DANGER
HIGH VELOCITY SAND SLURRY
MAY DISCHARGE AT ANY TIME
KEEP CLEAR OF PIPE END

TWEEDSAND BYPASSING

Restoring Coastal Sand Drift - Improving Boating Access

TWEEDSAND BYPASSING

Kirra
6-8 April 2021

Kirra Late April 2021

Fingal April 2021

Entrance conditions, usage and survey

TWEED SAND BYPASSING


20 April 2021


20 April 2021


14 January 2021


20 April 2021

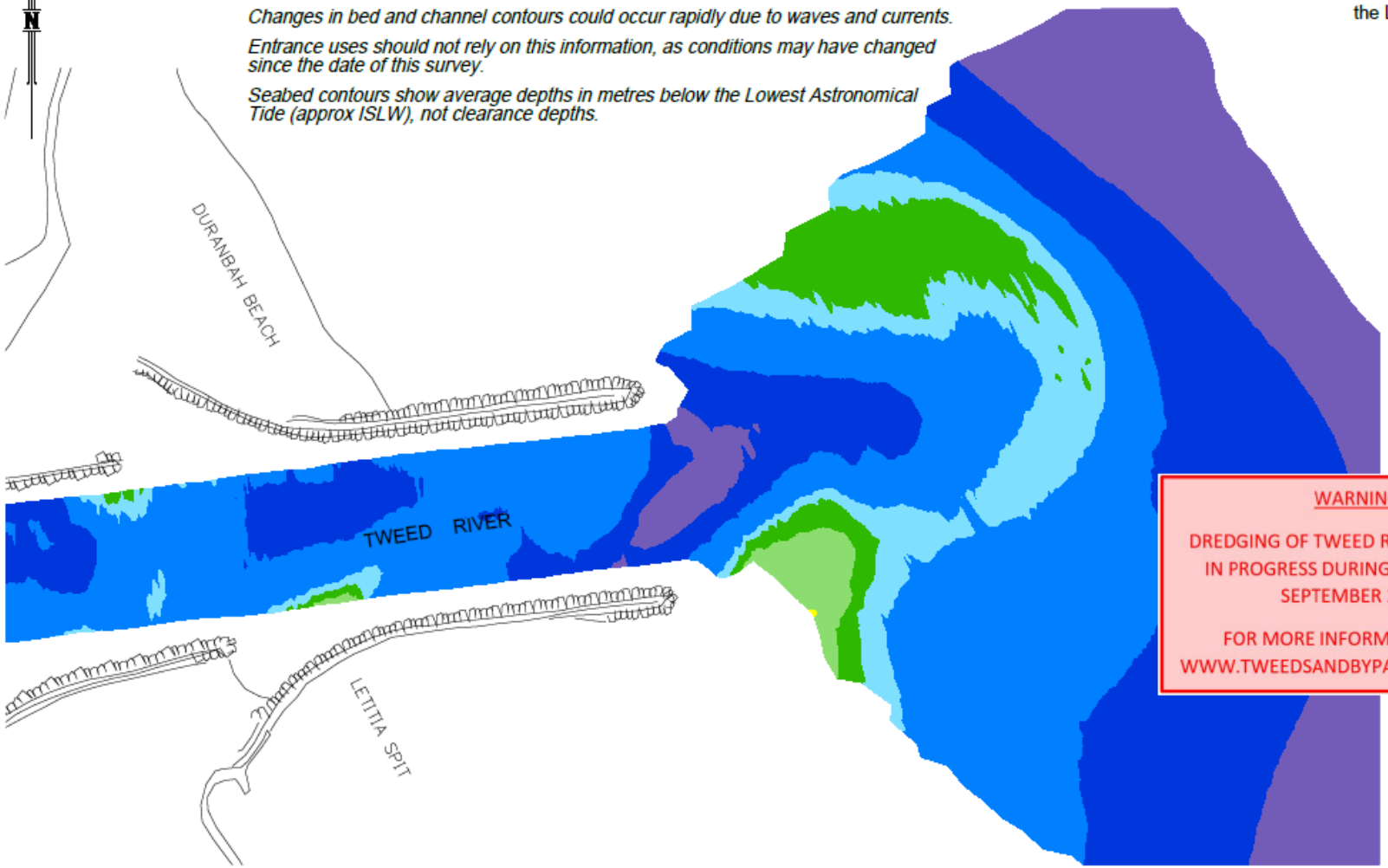
TWEED RIVER ENTRANCE AS AT 29th JULY 2020

WARNINGS: *Extreme caution should be used when navigating this entrance.*

Changes in bed and channel contours could occur rapidly due to waves and currents.

Entrance uses should not rely on this information, as conditions may have changed since the date of this survey.

Seabed contours show average depths in metres below the Lowest Astronomical Tide (approx ISLW), not clearance depths.



NOTES:

1. Survey information collected by Michel Group Services on 29th JULY 2020.
2. This plan prepared by Michel Group Services on 31th JULY 2020.
3. Surveys are undertaken for Tweed Sand Bypassing every three months to monitor entrance seabed levels.

NSW GOVERNMENT | Transport for NSW

TWEED SAND BYPASSING

Tweed Sand bypassing is a joint project of the New South Wales and Queensland Governments, with the support of the Gold Coast City Council, and in conjunction with Tweed Shire Council.

Meters

0 50 100 150 200

Queensland Government

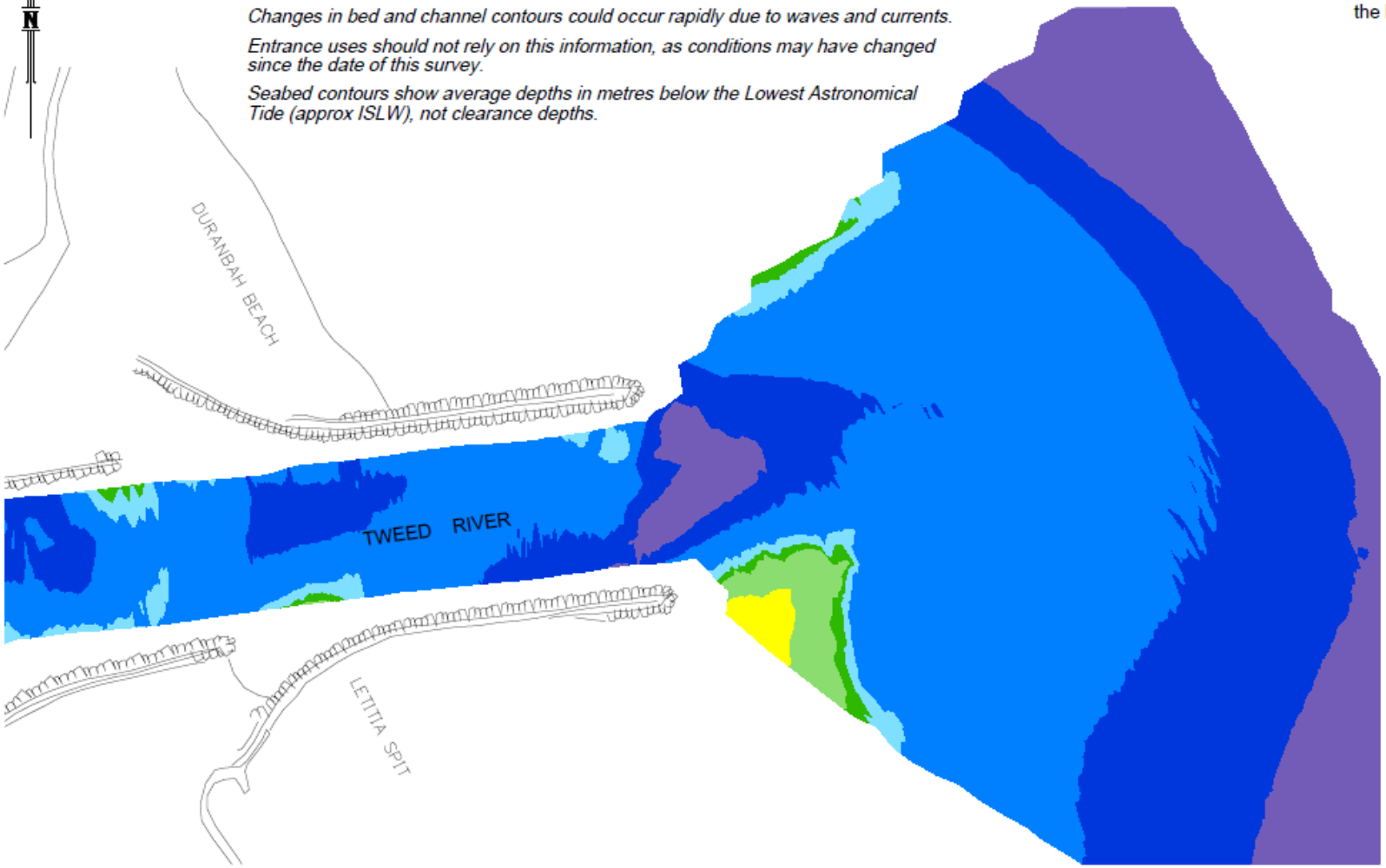
TWEED RIVER ENTRANCE AS AT 28th AUGUST 2020

WARNINGS: *Extreme caution should be used when navigating this entrance.*

Changes in bed and channel contours could occur rapidly due to waves and currents.

Entrance uses should not rely on this information, as conditions may have changed since the date of this survey.

Seabed contours show average depths in metres below the Lowest Astronomical Tide (approx ISLW), not clearance depths.



LEGEND

Average Depths in meters below the Lowest Astronomical Tide

- Less Than 1.0m
- 1.0 to 2.0m
- 2.0 to 3.0m
- 3.0 to 3.5m
- 3.5 to 4.0m
- 4.0 to 6.0m
- 6.0 to 8.0m
- More than 8.0m

NOTES:

1. Survey information collected by Michel Group Services on 28th AUGUST 2020.
2. This plan prepared by Michel Group Services on 2nd SEPTEMBER 2020.
3. Surveys are undertaken for Tweed Sand Bypassing every three months to monitor entrance seabed levels.

NSW GOVERNMENT | Planning, Industry & Environment

TWEED SAND BYPASSING

Tweed Sand bypassing is a joint project of the New South Wales and Queensland Governments, with the support of the Gold Coast City Council, and in conjunction with Tweed Shire Council.

Meters

0 50 100 150 200

Queensland Government

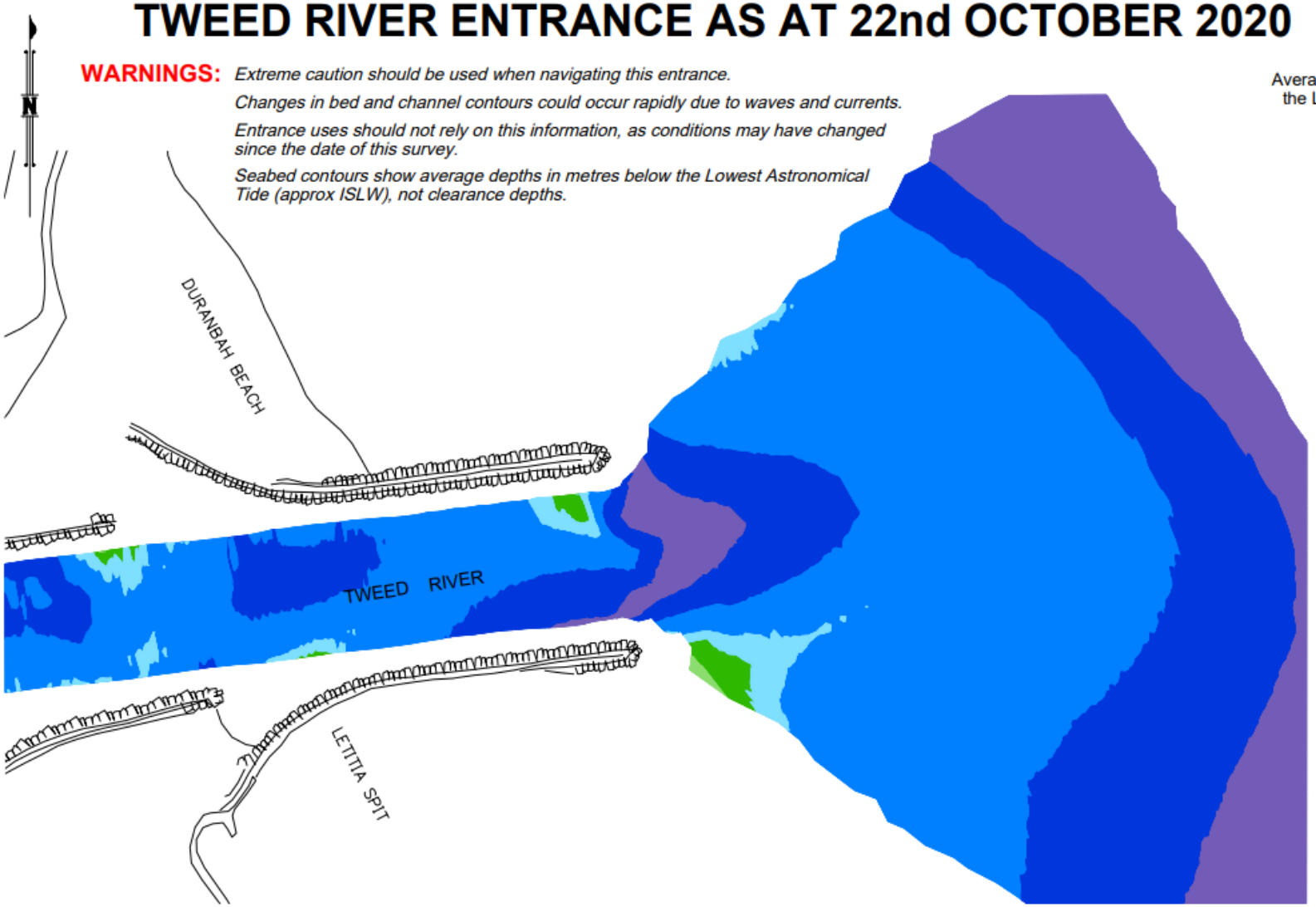
TWEED RIVER ENTRANCE AS AT 22nd OCTOBER 2020

WARNINGS: *Extreme caution should be used when navigating this entrance.*

Changes in bed and channel contours could occur rapidly due to waves and currents.

Entrance uses should not rely on this information, as conditions may have changed since the date of this survey.

Seabed contours show average depths in metres below the Lowest Astronomical Tide (approx ISLW), not clearance depths.



LEGEND

Average Depths in meters below the Lowest Astronomical Tide

- Less Than 1.0m
- 1.0 to 2.0m
- 2.0 to 3.0m
- 3.0 to 3.5m
- 3.5 to 4.0m
- 4.0 to 6.0m
- 6.0 to 8.0m
- More than 8.0m

NOTES:

1. Survey information collected by Michel Group Services on 22nd OCTOBER 2020.
2. This plan prepared by Michel Group Services on 28th OCTOBER 2020.
3. Surveys are undertaken for Tweed Sand Bypassing every three months to monitor entrance seabed levels.

NSW GOVERNMENT Transport for NSW

TWEED SAND BYPASSING

Tweed Sand bypassing is a joint project of the New South Wales and Queensland Governments, with the support of the Gold Coast City Council, and in conjunction with Tweed Shire Council.

Meters

0 50 100 150 200

Queensland Government

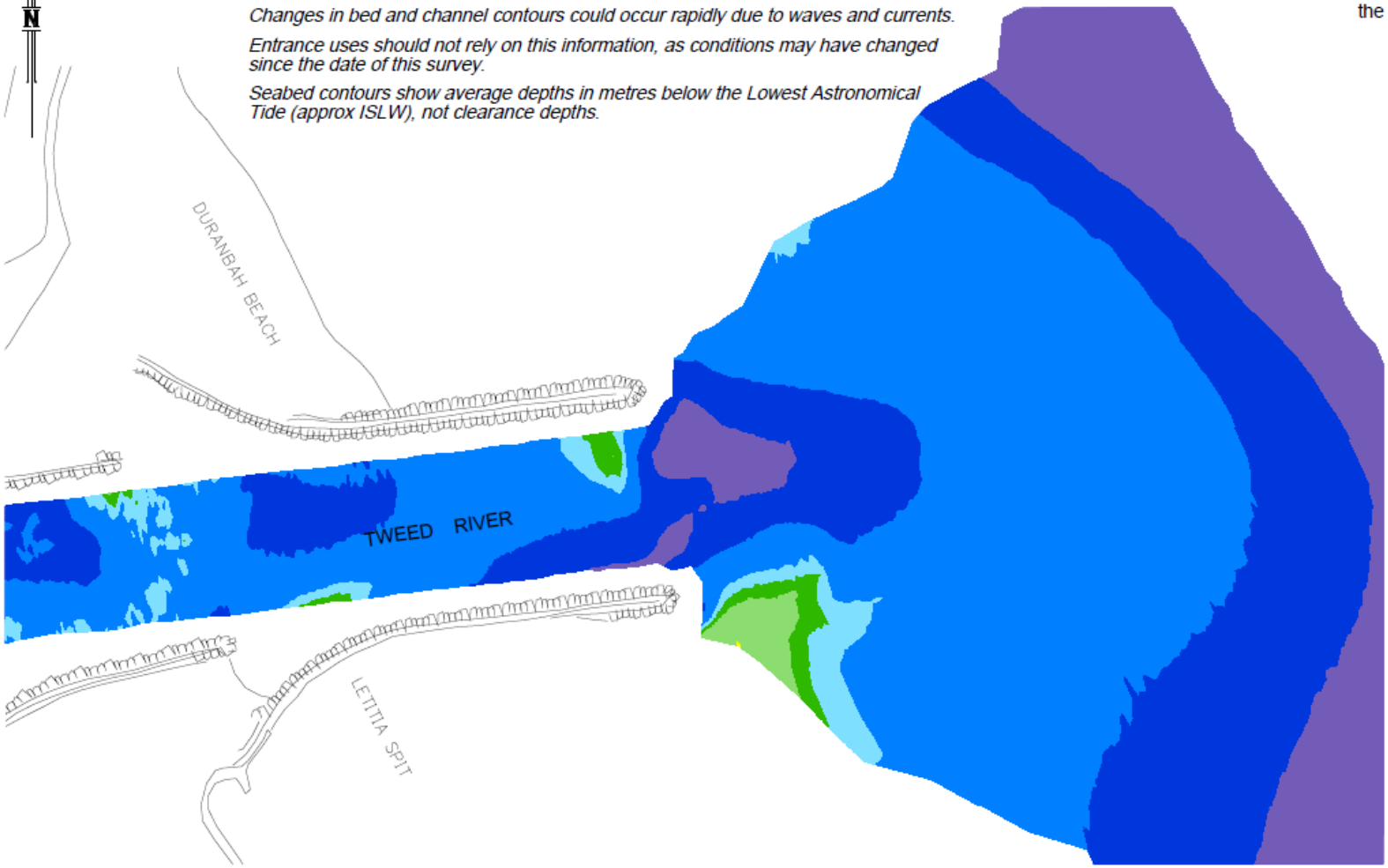
TWEED RIVER ENTRANCE AS AT 27th NOVEMBER 2020

WARNINGS: *Extreme caution should be used when navigating this entrance.*

Changes in bed and channel contours could occur rapidly due to waves and currents.

Entrance uses should not rely on this information, as conditions may have changed since the date of this survey.

Seabed contours show average depths in metres below the Lowest Astronomical Tide (approx ISLW), not clearance depths.



LEGEND

Average Depths in meters below the Lowest Astronomical Tide

- Less Than 1.0m
- 1.0 to 2.0m
- 2.0 to 3.0m
- 3.0 to 3.5m
- 3.5 to 4.0m
- 4.0 to 6.0m
- 6.0 to 8.0m
- More than 8.0m

NOTES:

1. Survey information collected by Michel Group Services on 27th NOVEMBER 2020.
2. This plan prepared by Michel Group Services on 8th DECEMBER 2020.
3. Surveys are undertaken for Tweed Sand Bypassing every three months to monitor entrance seabed levels.

NSW GOVERNMENT | Transport for NSW

TWEED SAND BYPASSING

Tweed Sand bypassing is a joint project of the New South Wales and Queensland Governments, with the support of the Gold Coast City Council, and in conjunction with Tweed Shire Council.

Meters

0 50 100 150 200

Queensland Government

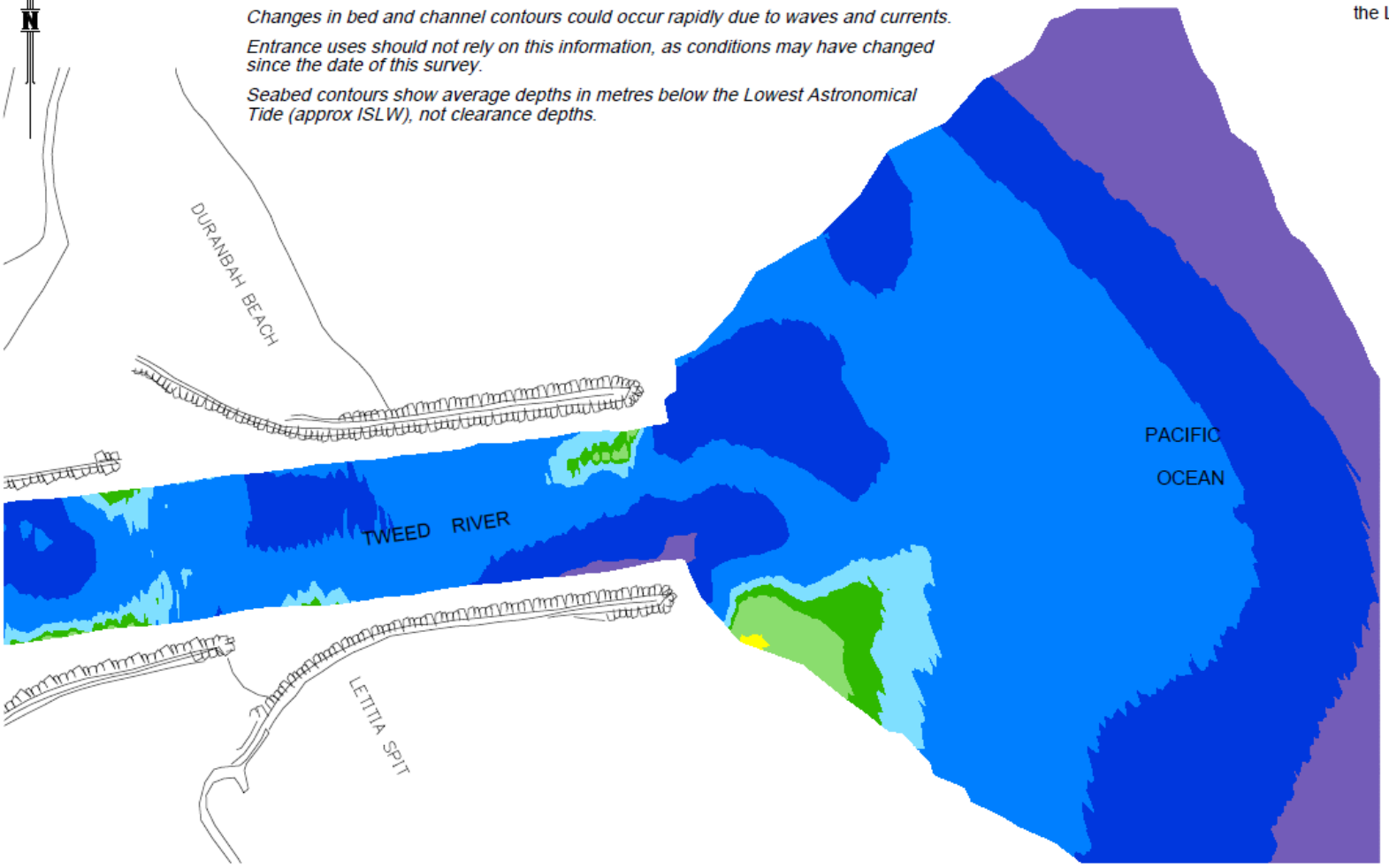
TWEED RIVER ENTRANCE AS AT 15th JANUARY 2021

WARNINGS: *Extreme caution should be used when navigating this entrance.*

Changes in bed and channel contours could occur rapidly due to waves and currents.

Entrance uses should not rely on this information, as conditions may have changed since the date of this survey.

Seabed contours show average depths in metres below the Lowest Astronomical Tide (approx ISLW), not clearance depths.



LEGEND

Average Depths in meters below the Lowest Astronomical Tide

- Less Than 1.0m
- 1.0 to 2.0m
- 2.0 to 3.0m
- 3.0 to 3.5m
- 3.5 to 4.0m
- 4.0 to 6.0m
- 6.0 to 8.0m
- More than 8.0m

NOTES:

1. Survey information collected by Michel Group Services on 15th JANUARY 2021.
2. This plan prepared by Michel Group Services on 27th JANUARY 2021.
3. Surveys are undertaken for Tweed Sand Bypassing every three months to monitor entrance seabed levels.

NSW GOVERNMENT Transport for NSW

TWEED SAND BYPASSING

Tweed Sand bypassing is a joint project of the New South Wales and Queensland Governments, with the support of the Gold Coast City Council, and in conjunction with Tweed Shire Council.

Meters

0 50 100 150 200

Queensland Government

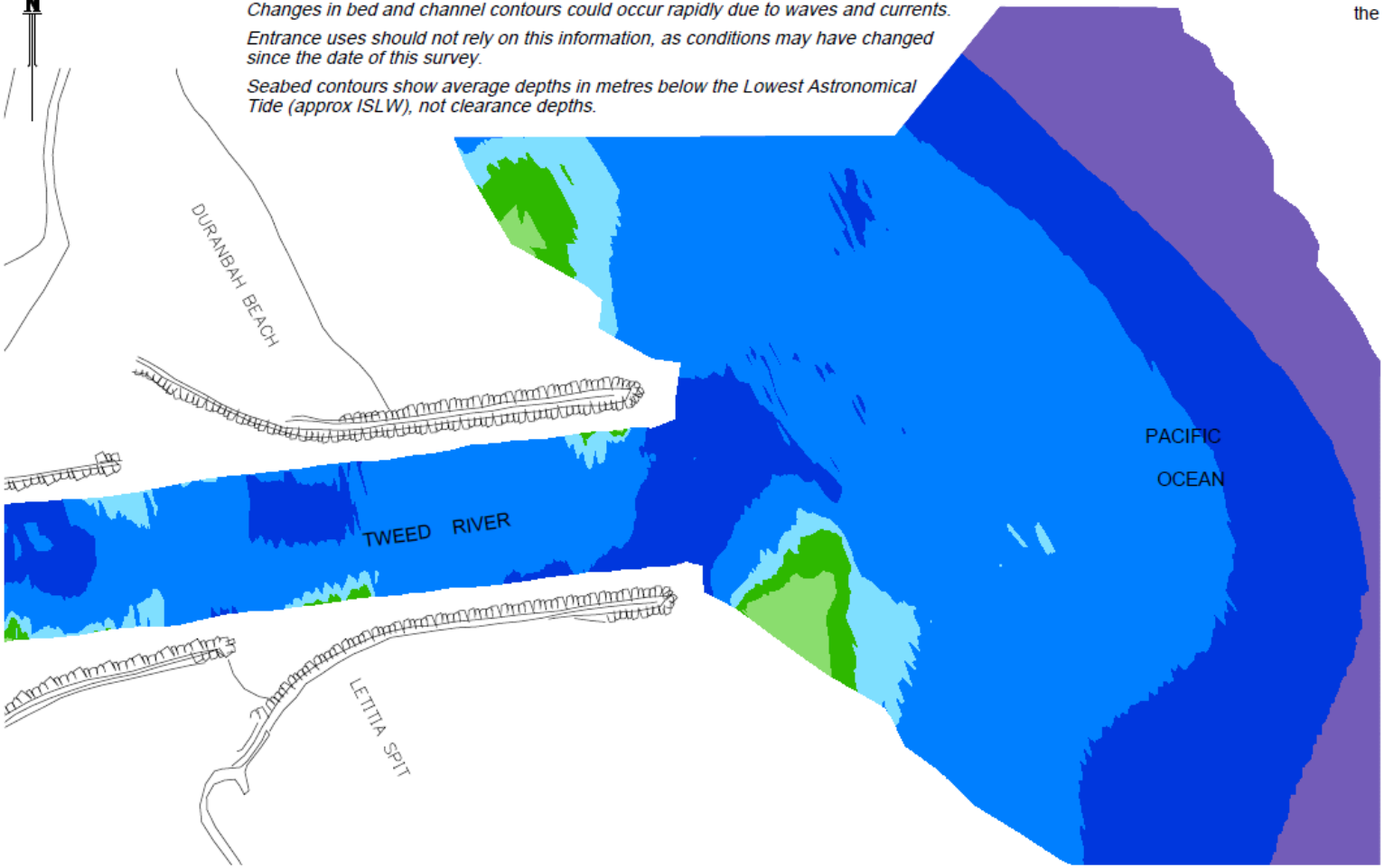
TWEED RIVER ENTRANCE AS AT 1st MARCH 2021

WARNINGS: *Extreme caution should be used when navigating this entrance.*

Changes in bed and channel contours could occur rapidly due to waves and currents.

Entrance uses should not rely on this information, as conditions may have changed since the date of this survey.

Seabed contours show average depths in metres below the Lowest Astronomical Tide (approx ISLW), not clearance depths.



LEGEND

Average Depths in meters below the Lowest Astronomical Tide

- Less Than 1.0m
- 1.0 to 2.0m
- 2.0 to 3.0m
- 3.0 to 3.5m
- 3.5 to 4.0m
- 4.0 to 6.0m
- 6.0 to 8.0m
- More than 8.0m

NOTES:

1. Survey information collected by Michel Group Services on 1st MARCH 2021.
2. This plan prepared by Michel Group Services on 4th MARCH 2021.
3. Surveys are undertaken for Tweed Sand Bypassing every three months to monitor entrance seabed levels.

NSW GOVERNMENT | Transport for NSW

TWEED SAND BYPASSING

Tweed Sand bypassing is a joint project of the New South Wales and Queensland Governments, with the support of the Gold Coast City Council, and in conjunction with Tweed Shire Council.

Meters

0 50 100 150 200

Queensland Government

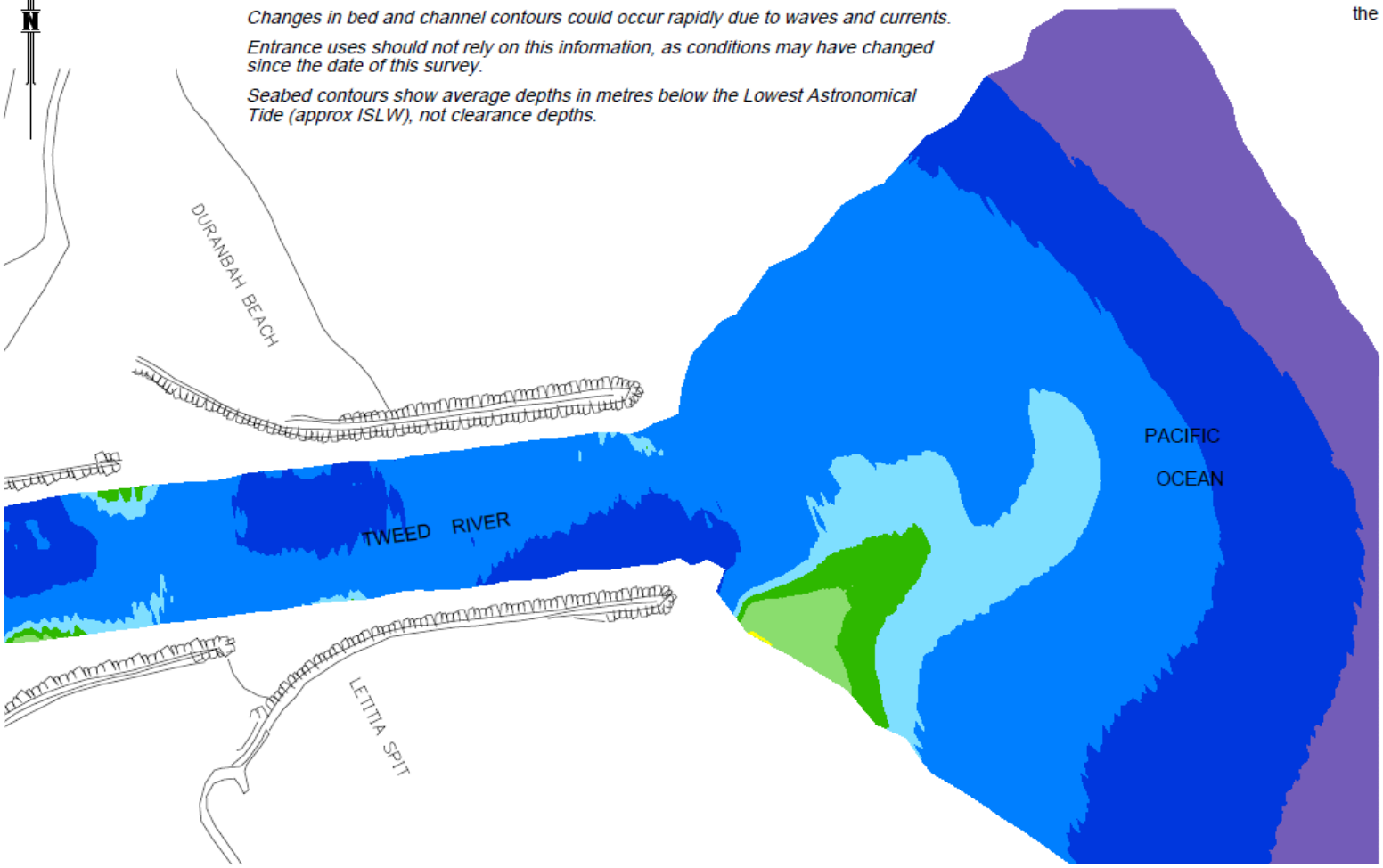
TWEED RIVER ENTRANCE AS AT 14th APRIL 2021

WARNINGS: *Extreme caution should be used when navigating this entrance.*

Changes in bed and channel contours could occur rapidly due to waves and currents.

Entrance uses should not rely on this information, as conditions may have changed since the date of this survey.

Seabed contours show average depths in metres below the Lowest Astronomical Tide (approx ISLW), not clearance depths.



LEGEND

Average Depths in meters below the Lowest Astronomical Tide

- Less Than 1.0m
- 1.0 to 2.0m
- 2.0 to 3.0m
- 3.0 to 3.5m
- 3.5 to 4.0m
- 4.0 to 6.0m
- 6.0 to 8.0m
- More than 8.0m

NOTES:

1. Survey information collected by Michel Group Services on 14th APRIL 2021.
2. This plan prepared by Michel Group Services on 22nd APRIL 2021.
3. Surveys are undertaken for Tweed Sand Bypassing every three months to monitor entrance seabed levels.

NSW GOVERNMENT | Transport for NSW

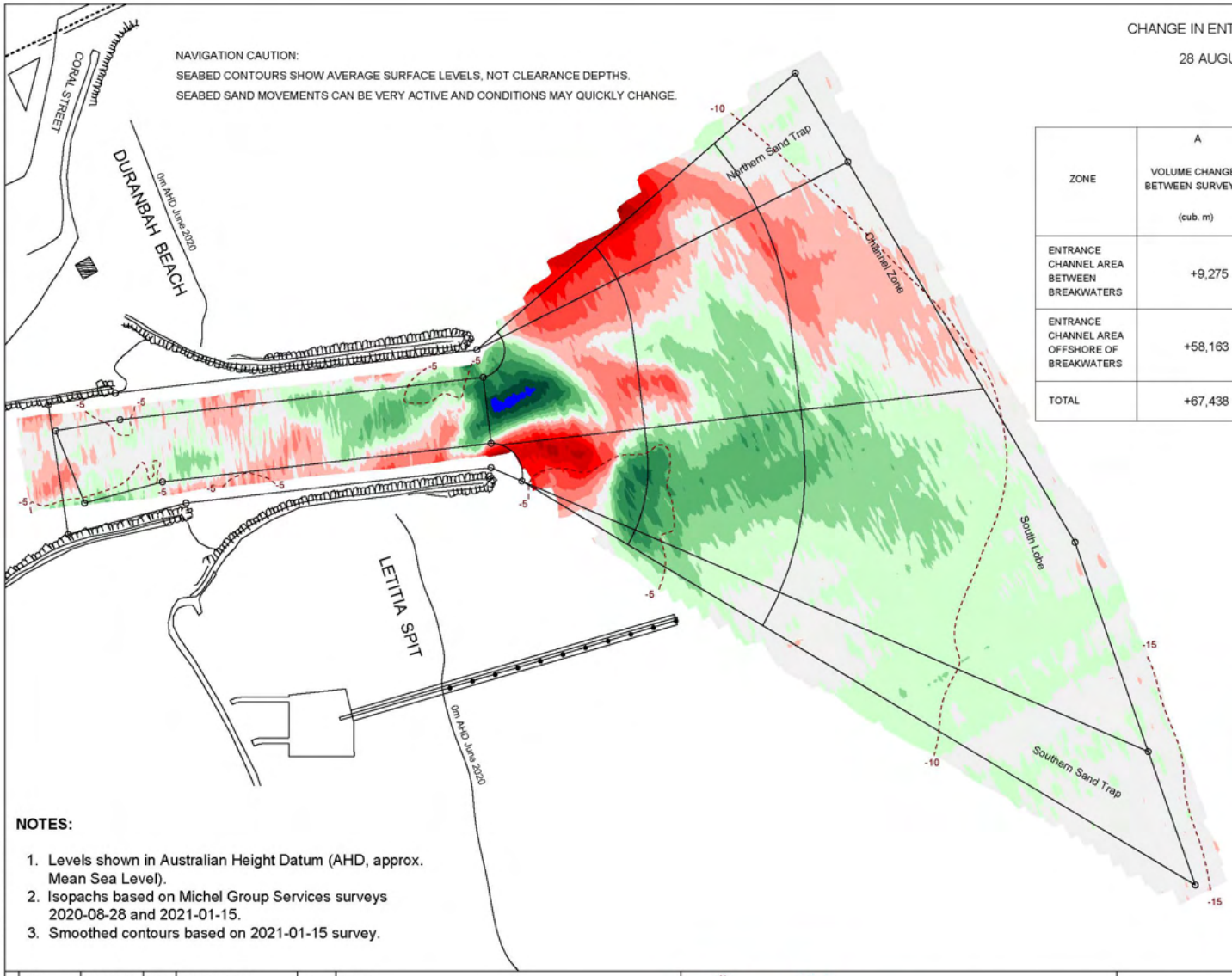
TWEED SAND BYPASSING

Tweed Sand bypassing is a joint project of the New South Wales and Queensland Governments, with the support of the Gold Coast City Council, and in conjunction with Tweed Shire Council.

Meters

0 50 100 150 200

Queensland Government



CHANGE IN ENTRANCE BATHYMETRIC CONDITIONS

28 AUGUST 2020 to 15 JANUARY 2021

(+ve gain / -ve loss)

ZONE	A VOLUME CHANGE BETWEEN SURVEYS (cub. m)	B QUANTITY DREDGED BETWEEN SURVEYS (cub. m)	(A-B) VOLUME CHANGE ADJUSTED FOR DREDGING (cub. m)	NET RESULT AFTER ADJUSTING FOR DREDGING
ENTRANCE CHANNEL AREA BETWEEN BREAKWATERS	+9,275	0	+9,275	ACCRETION
ENTRANCE CHANNEL AREA OFFSHORE OF BREAKWATERS	+58,163	0	+58,163	ACCRETION
TOTAL	+67,438	0	+67,438	ACCRETION

CHANGE IN BED ELEVATION (m)

>3.0	-0.15 to -0.5
2.5 to 3.0	-0.5 to -1.0
2.0 to 2.5	-1.0 to -1.5
1.5 to 2.0	-1.5 to -2.0
1.0 to 1.5	-2.0 to -2.5
0.5 to 1.0	-2.5 to -3.0
0.15 to 0.5	-3.0 to -5.0
-0.15 to 0.15	< -5.0

NOTES:

1. Levels shown in Australian Height Datum (AHD, approx. Mean Sea Level).
2. Isopachs based on Michel Group Services surveys 2020-08-28 and 2021-01-15.
3. Smoothed contours based on 2021-01-15 survey.

REVISION	DATE	DESCRIPTION	DRAWN
	2021-02-11	REV 0	MH

DRAWING NUMBER: 2021-003

SHEET: 1

SCALES: 0 200 400 Metres

DRAWING PRODUCED BY: HYDROSPHERE CONSULTING WWW.HYDROSPHERE.COM.AU

Queensland Government

NSW GOVERNMENT

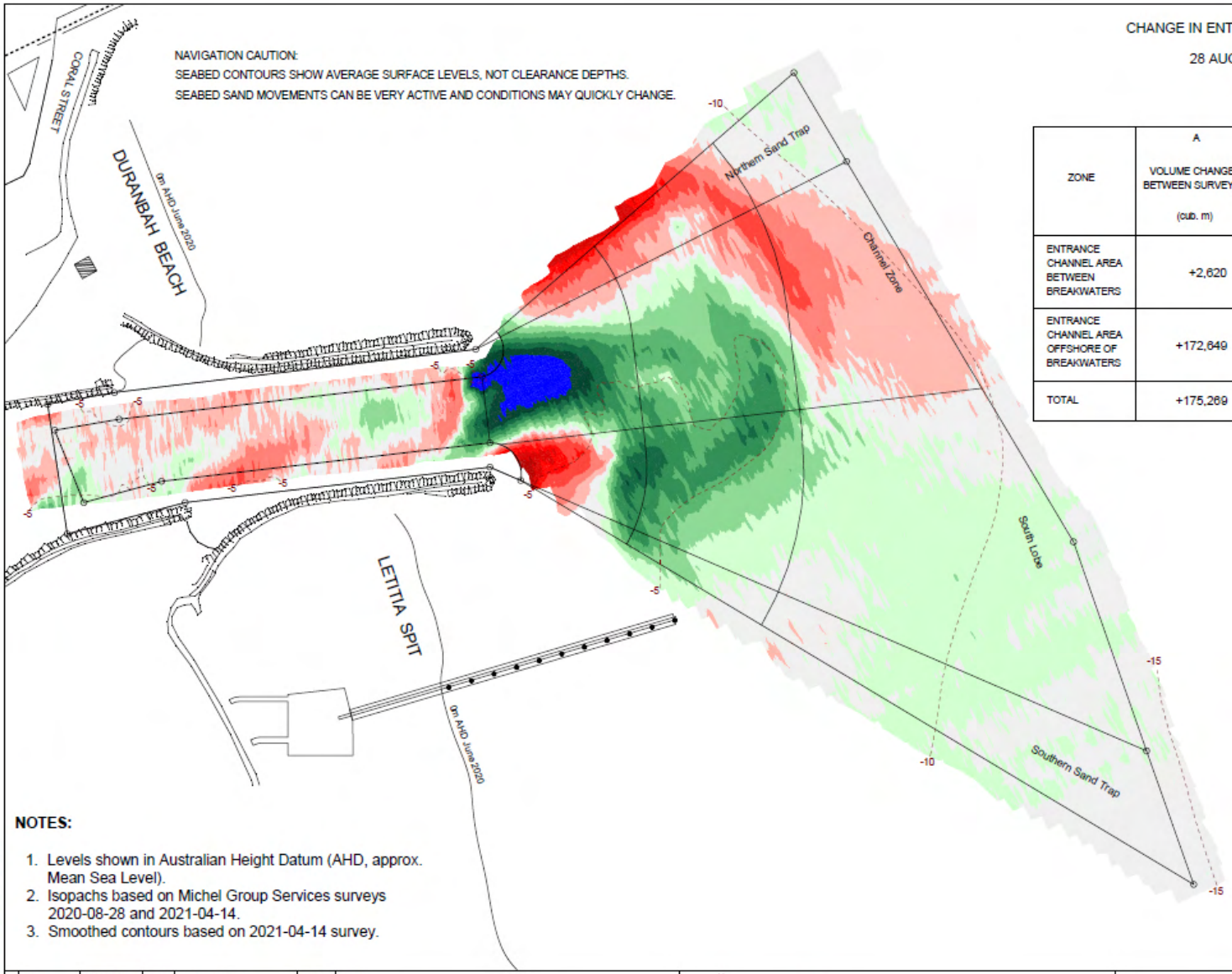
TRANSPORT FOR NSW

DEPARTMENT OF ENVIRONMENT AND SCIENCE (QLD)

TWEED RIVER ENTRANCE SAND BYPASSING PROJECT

TWEED RIVER ENTRANCE BED LEVEL CHANGE AUGUST 2020 TO JANUARY 2021

T:\Drawings\Entrance\Ent ISO 2020-08-28 to 2021-01-15.dwg



CHANGE IN ENTRANCE BATHYMETRIC CONDITIONS

28 AUGUST 2020 to 14 APRIL 2021

(+ve gain / -ve loss)

ZONE	A VOLUME CHANGE BETWEEN SURVEYS (cub. m)	B QUANTITY DREDGED BETWEEN SURVEYS (cub. m)	(A-B) VOLUME CHANGE ADJUSTED FOR DREDGING (cub. m)	NET RESULT AFTER ADJUSTING FOR DREDGING
ENTRANCE CHANNEL AREA BETWEEN BREAKWATERS	+2,620	0	+2,620	ACCRETION
ENTRANCE CHANNEL AREA OFFSHORE OF BREAKWATERS	+172,649	0	+172,649	ACCRETION
TOTAL	+175,269	0	+175,269	ACCRETION

CHANGE IN BED ELEVATION (m)

>3.0	-0.15 to -0.5
2.5 to 3.0	-0.5 to -1.0
2.0 to 2.5	-1.0 to -1.5
1.5 to 2.0	-1.5 to -2.0
1.0 to 1.5	-2.0 to -2.5
0.5 to 1.0	-2.5 to -3.0
0.15 to 0.5	-3.0 to -5.0
-0.15 to 0.15	< -5.0

NOTES:

1. Levels shown in Australian Height Datum (AHD, approx. Mean Sea Level).
2. Isopachs based on Michel Group Services surveys 2020-08-28 and 2021-04-14.
3. Smoothed contours based on 2021-04-14 survey.

REVISION	DATE	DESCRIPTION	DRAWN
	2021-05-10	REV 0	MH

DRAWING NUMBER: 2021-007

SHEET: 1

DRAWING PRODUCED BY:
HYDROSPHERE CONSULTING
WWW.HYDROSPHERE.COM.AU

SCALES

0 200 400

Metres

Queensland Government

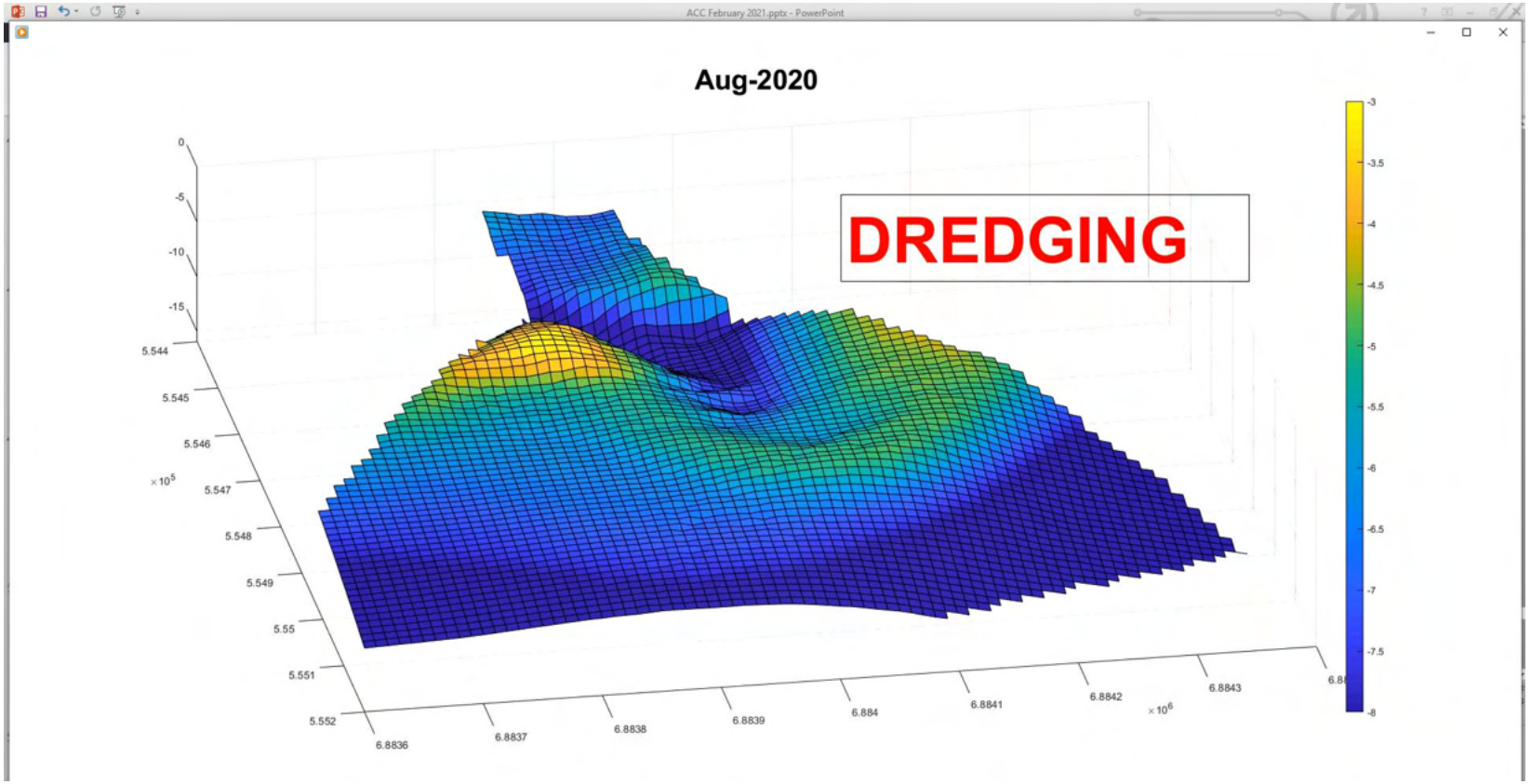
NSW GOVERNMENT

TRANSPORT FOR NSW

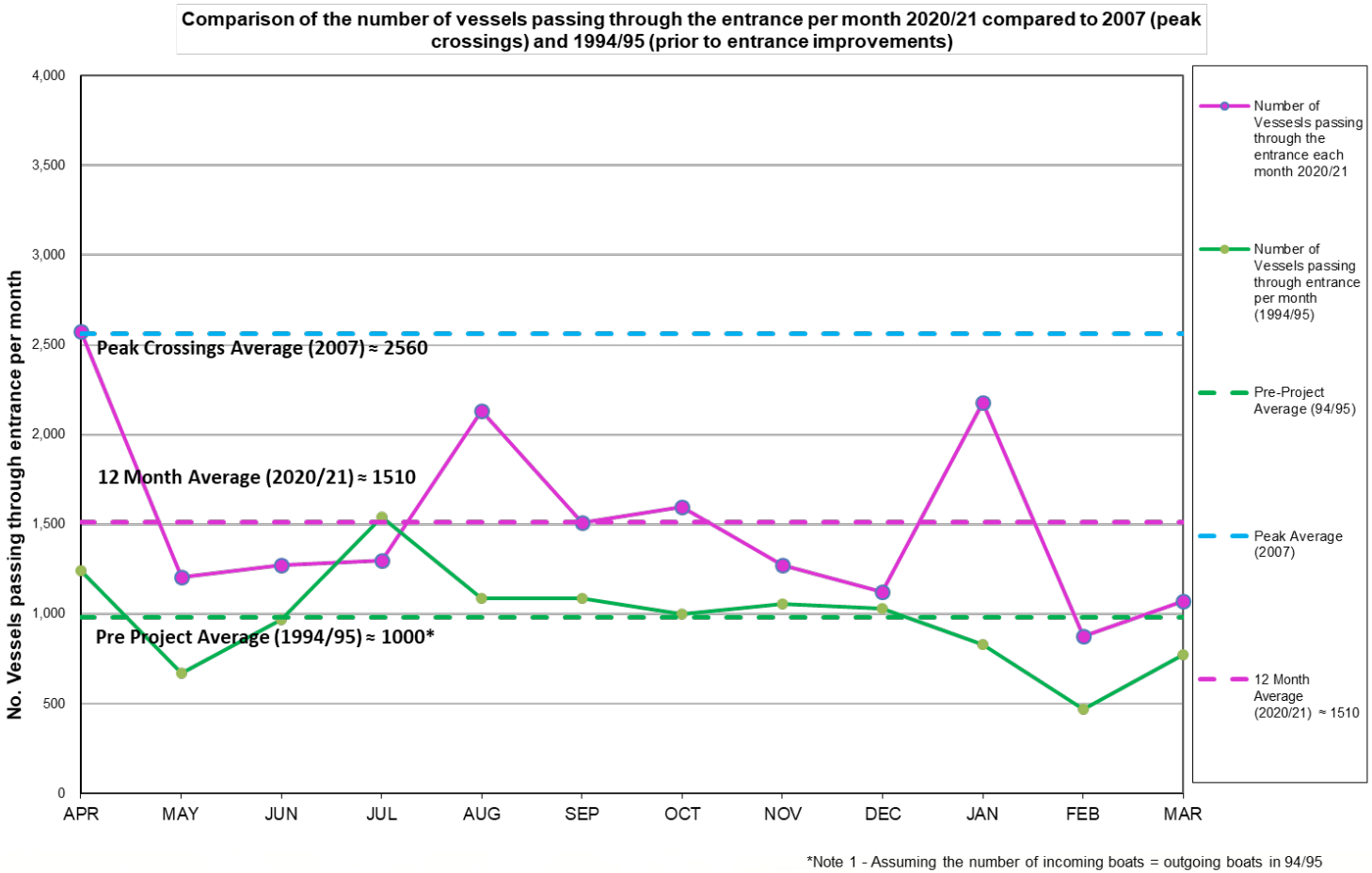
DEPARTMENT OF ENVIRONMENT AND SCIENCE (QLD)

TWEED RIVER ENTRANCE SAND BYPASSING PROJECT

TWEED RIVER ENTRANCE BED LEVEL CHANGE AUGUST 2020 TO APRIL 2021


ACC February 2021.pptx - PowerPoint
Aug-2020
DREDGING
0
-5
-10
-15
5.544
5.545
5.546
×10^5
5.547
5.548
5.549
5.55
5.551
5.552
6.8836
6.8837
6.8838
6.8839
6.884
6.8841
6.8842
6.8843
×10^6
-3
-3.5
-4
-4.5
-5
-5.5
-6
-6.5
-7
-7.5
-8

Tweed River Entrance Usage up to March 2021



*Note 1 - Assuming the number of incoming boats = outgoing boats in 94/95

Projects and Enhancements

TWEED SAND BYPASSING

Projects

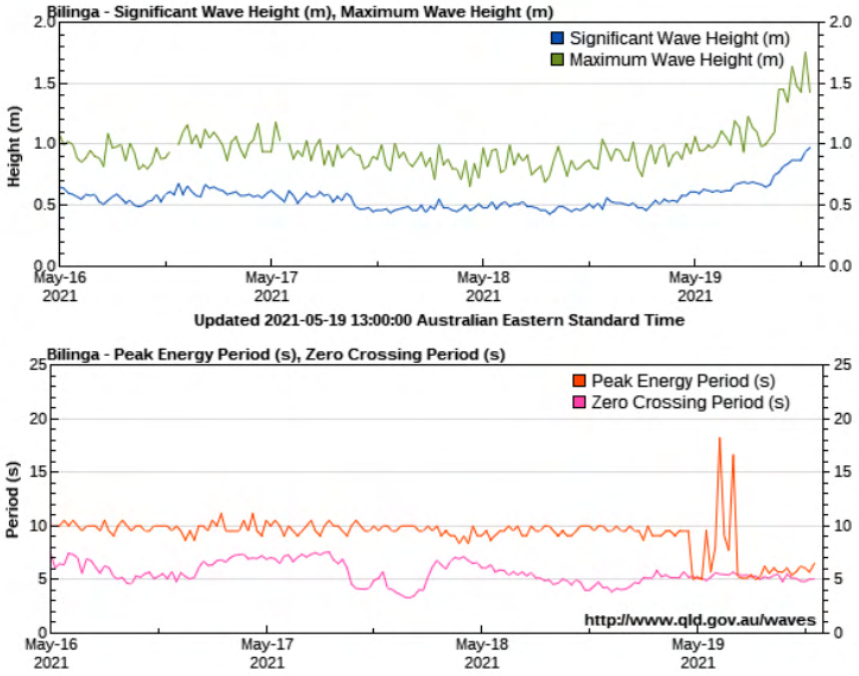
- TSB Transition - Phase 1 investigations complete, Phase 2 options evaluation complete.
- Reef Monitoring 2021 – fieldwork scheduled for mid-May
- Letitia Coastal Processes Study – RFQ sent to 4 consultants, responses due by 26th May
- Kirra pipeline detailed design
- VP2 safety upgrade

QGHL – Bilinga Physical and Numerical Modelling

- Physical testing – round 2
- Deployment of wave buoy at Bilinga

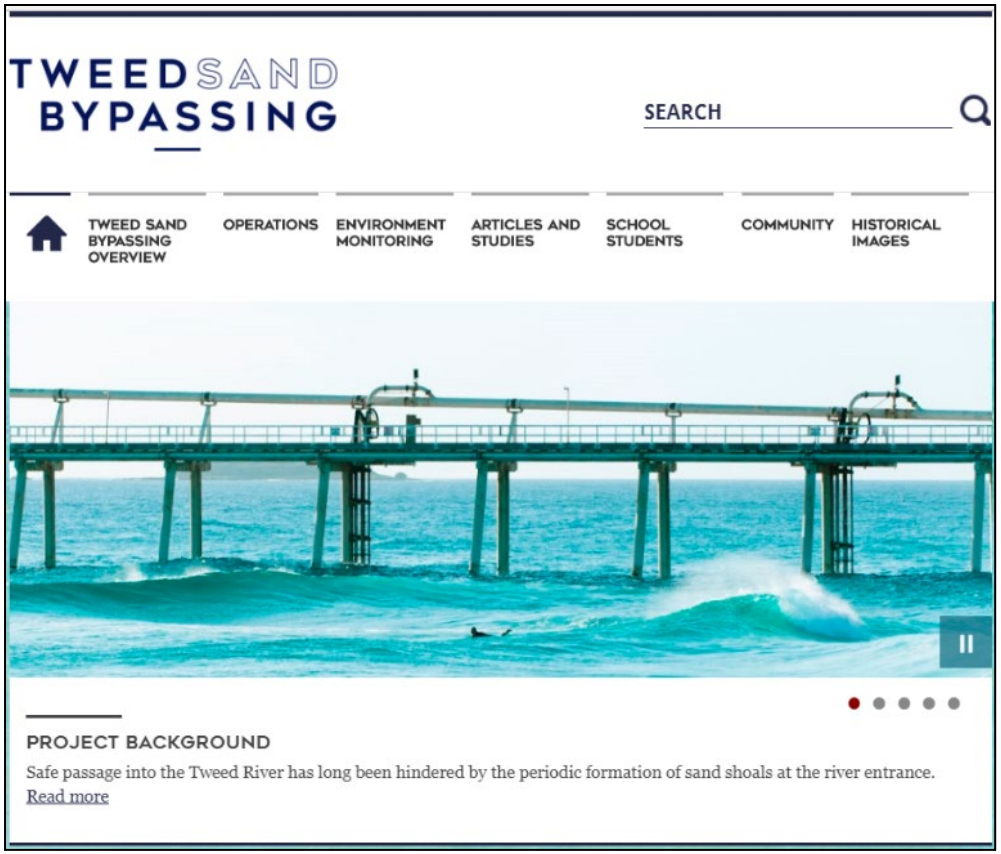
https://www.linkedin.com/posts/alexander-atkinson-42a37939_tweedsandbypassing-qghl-coastalengineering-ugcPost-6792999258225291264-Jvm8

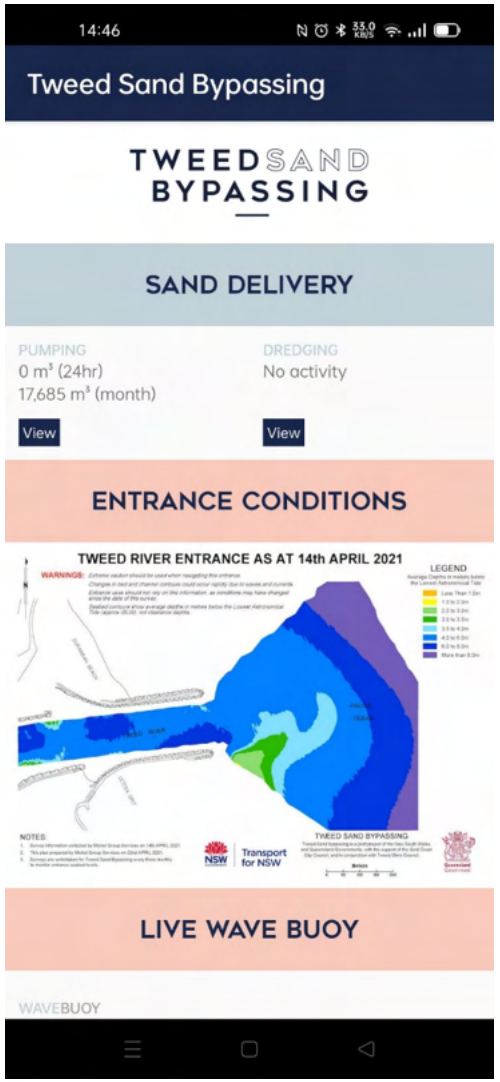
Wave height



Communications

TWEED SAND BYPASSING





- Preparation of a communications plan for dredging
- School visits / Griffith Uni Short Course
- New Project Video for website

- AC Nominations for NSW in May / June 2021