Environmental Protection Act 1986

Section 43A

NOTICE OF DECISION TO CONSENT TO CHANGE TO PROPOSAL DURING ASSESSMENT

PERSON TO WHOM THIS NOTICE IS GIVEN

(a) Mardie Minerals Pty Ltd (ACN: 152 574 457)
Level 1, 15 Rheola Street
WEST PERTH WA 6005

PROPOSAL TO WHICH THIS NOTICE RELATES:

Mardie Project
Assessment No. 2167

Pursuant to section 43A of the *Environmental Protection Act 1986* (EP Act), the Environmental Protection Authority (EPA) consents to the proponent making the following changes to the proposal during assessment without a revised proposal being referred:

- Revision of proposed development envelopes as described in Schedule 1 and Shown in Figure 1 of Attachment 1
- Change to project disturbance footprint as described in Schedule 1 and Shown in Figure 2 of Attachment 1
- Increase in total terrestrial disturbance footprint, including addition of port stockyard and small boat launching facility.
- Decrease in direct impacts to marine environment from marine jetty and bitterns infrastructure, and re-alignment of marine infrastructure.
- Changes to proposed dredging operations, including reduction in direct dredge area, increase in dredge volume, and re-alignment of dredge channel.
- Realignment and replacement of intertidal trestle jetty with a rock causeway.
- Additional lighting on coastal areas.

Table 1 presents the changes to the proposal. Figure 1 presents the changed development envelopes, and Figure 2 presents the changed conceptual footprint.

EFFECT OF THIS NOTICE:

1. The EPA considers that the change is unlikely to significantly increase any impact that the proposal may have on the environment. The proponent may change the proposal as provided for in this notice.

RIGHTS OF APPEAL:

There are no rights of appeal under the EP Act in respect of this decision.

Dr Tom Hatton
Delegate of the Environmental Protection Authority
CHAIRMAN

26 May 2020

Schedule 1

Change to Proposal

Element	Current Proposal	Changed Proposal
Development envelopes	• 16,937 ha • As shown in Figure 1	• 16,024 ha • As shown in Figure 1
Disturbance Footprint	• 9,551 ha • As shown in Figure 2	• 11,221 ha • As shown in Figure 2
Marine Infrastructure Disturbance	• 22 ha	• 7 ha
Dredging program	• 146 ha direct disturbance • 500,000 m^3 dredge volume	• 55 ha direct disturbance • 800,000 m^3 dredge volume
Intertidal crossing	• Trestle jetty • As shown in Figure 2	• Rock Causeway • As shown in Figure 2

Figure 1: Changes to referred Project Development Envelope
Figure 2: Change to referred Proposal Footprint

Figure 1 – Changes to Development Envelopes

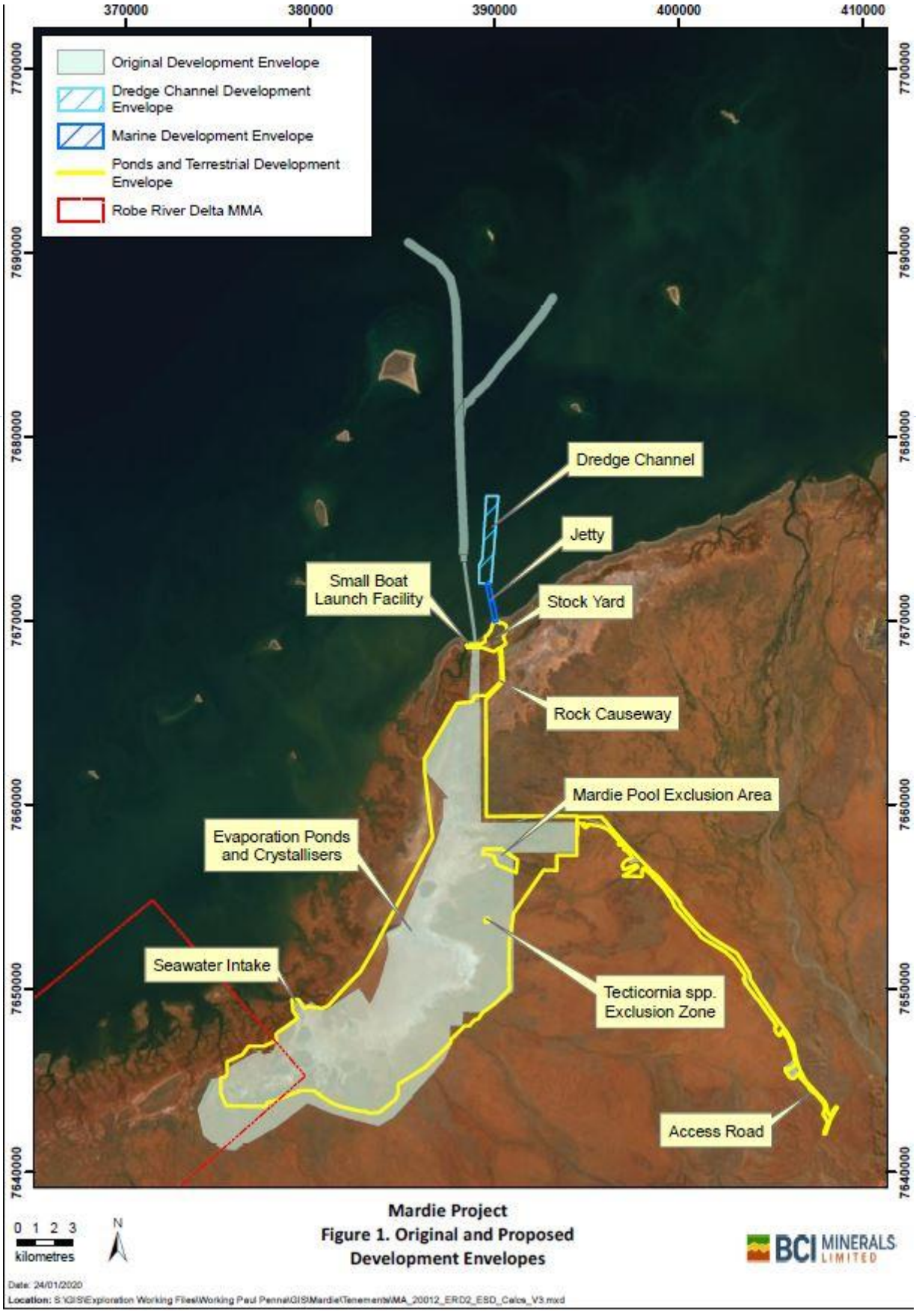
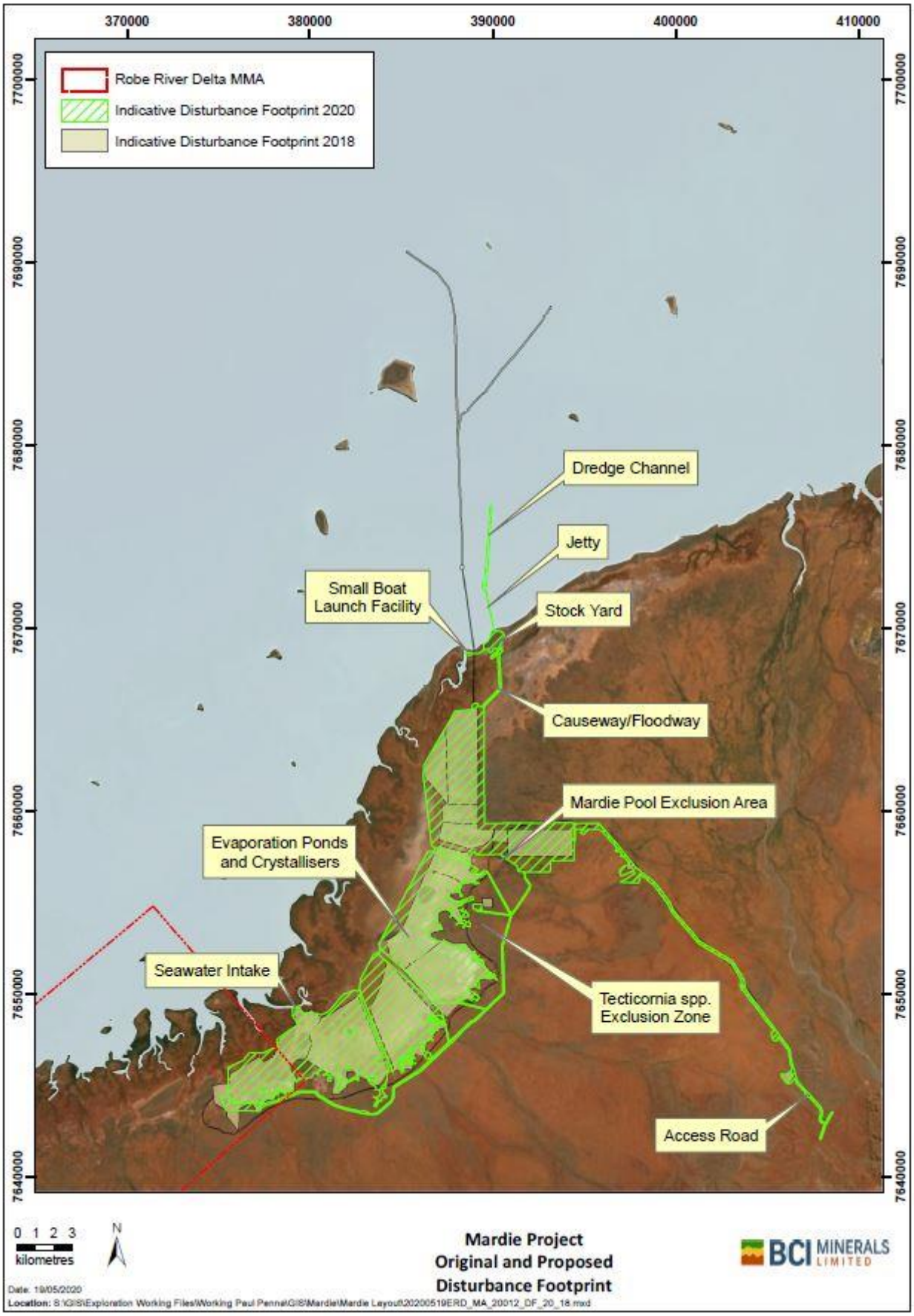


Figure 2 – Changes to Project disturbance footprint



Environmental Protection Act 1986

Section 43A

STATEMENT OF REASONS

CONSENT TO CHANGE PROPOSAL DURING ASSESSMENT

Proposal: Mardie Project (Assessment Number 2167)

Proponent: Mardie Minerals Pty Ltd (fully owned subsidiary of BCI Minerals Limited)

Decision

For the reasons outlined below, the EPA has determined to consent to the Proponent changing the Proposal outlined in Schedule 1 attached to this Statement of Reasons.

Background

On 17 April 2018, Mardie Minerals referred the Proposal to the Environmental Protection Authority (EPA) under section 38 of the *Environmental Protection Act 1986* (EP Act). The Proposal consisted of a greenfield salt and Sulphate of Potash project located at Mardie, 80 kilometres (km) south west of Karratha.

The proposal required the development of a seawater intake, 10,200 ha of evaporation (concentrator and crystalliser) ponds, processing plant, desalinisation plant, bitterns disposal, accommodation and other associated infrastructure.

On 2 May 2018, the proponent advised that the proposal had been amended to include a trestle jetty export facility and associated dredging channel. This amendment was accepted, subject to a second 7-day public comment period, which was conducted and additional comments received in relation to the changes to the proposal.

The EPA determined to assess the Proposal at the level of Environmental Review (10 week public review) on 18 June 2018.

In advance of the EPA preparing a report on the outcome of its assessment of the Proposal, the Proponent has sought the EPA's consent to the proponent changing the Proposal.

Relevant Statutory and Administrative Provisions

Section 3.8 of the Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2020 guides what information the EPA requires from a person wanting to change its proposal during assessment.

The proponent is required to provide:

- details of the proposed change

- statement of the significance of the change
- rationale for the change.

Materials considered in making this decision

In determining whether to consent to the proponent changing the proposal the EPA has considered the following:

1. The proponent's referral document – 17 April 2020 – 2018-1523940599760
2. The Environmental Scoping Document (ESD) as endorsed by the EPA on 30 November 2018 – 2018-1543534567772
3. Mardie Project first Draft ERD – 13 June 2019 – A1796904
4. Revised application to change proposal under S43A of the EPA Act – from BCI – 23 April 2020 – DWERDT-275276
5. Mardie Project Environmental Review Document (ERD) (Second Draft) – 28 April 2020 – DWERDT-229667
6. Advice from Marine Ecosystems Branch regarding proposed changes to proposal – 04 May 2020 – DWERDT-279388
7. S43A change to proposal quantification table – 12 May 2020 – DWERDT-286642
8. Revised S43A quantification table and maps – 20 May 2020 – DWERDT-286658
9. EPA Guidance and Procedures

Consideration

1. Nature of the proposed change

   The change to the proposal includes the following aspects:

   - Increase in total terrestrial disturbance footprint, including addition of port stockyard and small boat launching facility.
   - Decrease in direct impacts to marine environment from marine jetty and bitterns infrastructure, and re-alignment of marine infrastructure.
   - Changes to proposed dredging operations, including reduction in direct dredge area, increase in dredge volume, and re-alignment of dredge channel.
   - Realignment and replacement of intertidal trestle jetty with a rock causeway.
   - Additional lighting on coastal areas.
   - Revision of proposed development envelopes.

Increase in total disturbance footprint, including addition of port stockyard and small boat launching facility.

The original proposal included direct disturbance of up to 9,551 ha, including direct disturbance for ponds, terrestrial infrastructure, marine infrastructure and dredging. The revised proposal includes up to 11,221 ha of direct disturbance (additional indirect disturbances are addressed below). This is an increase of 913 ha (17.5%) (Figure 1).

Noted changes to direct impacts for individual vegetation types and benthic communities include:

- Decrease in impacts to mangroves from 25.2 ha to 17 ha.
- Additional disturbance to the Algal mat from 457 ha to 880 ha (92%). Most of this change is related to an increase in the disturbance associated with evaporation ponds.
- Increase in direct impacts to coastal vegetation from 4.4 ha to 96 ha as a result of the inclusion of the port stockyard and boat launching facility.
- Increase in impacts to the AcAjTe Soak (locally significant) vegetation type from 0 to 0.6 ha, representing the entirety of the currently mapped extent of this vegetation type. The proponent notes that this vegetation type is likely to be identified elsewhere with further study, and will be avoided until additional areas can be mapped outside of the development envelope (Figure 2).

Direct impacts to marine and intertidal BCH associated with changes to marine and intertidal infrastructure are addressed below.

In general, **these changes are unlikely to significantly increase any impact the proposal may have on the environment** primarily because:

- The total increase in disturbance of 17.5% is considered to be relatively small.
- The addition of the port stockyard and boat launching facility, totalling 96 ha, is relatively small in the context of the proposal.
- The AcAjTe Soak vegetation type would be avoided unless identified outside the development envelope.

Realignment and reduction of marine jetty and bitterns infrastructure.

The direct footprint of the marine jetty and bitterns outfall infrastructure would be reduced from 22 ha to 7 ha. Note that the jetty and marine infrastructure areas are represented by the thinner, landward portions of the respective envelopes shown in Figure 3.

The re-alignment of the infrastructure could change the composition of BCH types that would be impacted. No quantification of impacts to individual BCH types is available, however Figure 3 indicates minimal change to significant BCH types.

These changes are unlikely to significantly increase any impact the proposal may have on the environment because the change to direct disturbance is reduced, and the change to the composition of BCH types that would be impacted does not appear to be significantly different, based on habitat mapping provided in Figure 3.

Changes to proposed dredging operations, including realignment of dredge channel, reduction in direct dredge area, and increase in dredge volume.

Changes to the proposed dredging operations include the following:

- There would be a decrease in direct impacts to marine BCH associated with the dredge channel from 146 ha to 55 ha. (Figure 3).
- There would be an increase in dredging volume from 500,000 m^3 to 800,000 m^3 (60%). The proponent has indicated that this change is the result of improved knowledge of bathymetry and sub-sea geology, and should be considered in conjunction with the reduced dredging footprint.
- Re-alignment of the dredge channel could change the composition of BCH types directly impacted. As BCH mapping was not conducted for the entirety of the original proposal (Figure 3), it is not possible to quantify this change to the proposal, however it is reasonable to consider that the impacts to significant BCH types would be reduced in this instance, given the size of the original footprint.
- There is likely to be a change to the Zone of High Impact (ZoHI) associated with dredging. In this area, impacts to BCH are predicted to be irreversible. The expected ZoHI for the revised proposal would be 183 ha, however, as the ZoHI was not calculated for the original proposal, it is not possible to quantify this change. Given the decrease in the area of direct dredging disturbance from 146 ha to 55 ha, it may be considered that the ZoHI would also be reduced. Further, given the movement of the ZoHI away from islands known to be associated with significant BCH types (coral), it may also be considered that there would be a reduction in impacts to significant BCH types.

Changes to the dredging program are unlikely to significantly increase any impact the proposal may have on the environment primarily because the dredging envelope would be significantly reduced, and re-aligned away from island known to be associated with significant BCH types.

Realignment and replacement of intertidal trestle jetty with a rock causeway.

Realignment and replacement of the intertidal trestle jetty with a rock causeway would result in the following changes to impacts:

- An increase in direct impacts to intertidal BCH from 11 ha to 16.5 ha (59%). This quantification is based on the assumption that a construction/maintenance track was included with the trestle jetty for the original proposal.
- A change to the composition of benthic habitat directly impacted by the crossing structure. While direct impacts to different BCH types have not been quantified by the proponent, Figure 4 indicates that the re-alignment would result in a positive change, reducing the direct impacts to mangrove communities.
- An increase in indirect impacts to BCH (mostly algal mat) due to ponding or diversion of tidal flows caused by the rock causeway. The proponent has provided modelling (Figure 5) which demonstrates that the causeway would result in minimal changes to tidal flows, compared to a base case of no development.

These changes to impacts are unlikely to significantly increase any impact the proposal may have on the environment primarily because, because:

- 59% (5.5 ha) increase in direct impact associated with the change is considered to be relatively low,
- the change to indirect impacts has been demonstrated to be minimal, and
- the re-alignment of the crossing would result in a decreased impact to significant mangrove populations.

Additional lighting on coastal areas.

The original proposal included lighting of the trestle jetty. The revised proposal would require additional lighting in the vicinity of the beach for the port stockyard and boat launching facilities. This increase is difficult to quantify, but **is unlikely to significantly increase any impact the proposal may have on the environment** as nearby beaches are not considered to be critical turtle nesting habitat.

Revision of proposed development envelopes.

The proponent has revised the development envelopes for the proposal, resulting in a total reduction of the development envelopes by 913 hectares (ha) from 16,937 ha to 16,024 ha.

The changes to the development envelopes include:

- Realignment of the intertidal crossing further to the east. As discussed previously, this change would result in a reduction in impacts to significant mangrove communities.
- Exclusion of environmentally sensitive areas including Mardie Pool and significant flora species from the development envelopes. This change would result in a reduction in impacts to significant species and cultural areas.
- Moving some intertidal areas from the marine envelope to the ponds and terrestrial envelope. This change would not result in any changes to the location or extent of the disturbance footprint.
- Expanding areas in the north of the project area to include port and boat launching areas. This change has the potential to impact different vegetation types to that of the original proposal, including the locally significant AcAjTe Soak vegetation type. As discussed previously, this vegetation type would be avoided until it can be identified outside the development envelopes.
- The re-alignment and reduction of the marine infrastructure and dredge envelopes. This change has the potential to impact different BCH types to that of the original proposal. As discussed previously, the re-alignment away from islands known to be associated with significant BCH types has the potential to reduce impacts to significant BCH.

In general, **these changes are unlikely to significantly increase any impact the proposal may have on the environment** because they are likely to result in a reduction in impacts to sensitive species, vegetation communities or areas.

2. Stage of the assessment process

    - The ESD, prepared by the proponent in consultation with EPA Services, was endorsed by the EPA on 30 November 2018.
    - The proponent provided a second draft Environmental Review Document, based on the revised proposal described above, and the document is being reviewed in light of its suitability for public review.
    - The proponent has not yet been released for Public Review.

3. Currency, relevance and reliability of the information, including submissions

    The EPA considers that the currency, relevance and reliability of the information submitted is satisfactory. The proponent has provided relevant information, including maps and modelling to demonstrate the magnitude of the changes to impacts associated with the revised proposal.

4. Community engagement

    The proponent has undertaken some consultation with relevant stakeholders including station owners and native title groups. Further community engagement will be undertaken during the 10-week public review of the proponent's ERD.

5. Level of public concern

    Eight comments were received during the 7-day public consultation on the original referral, and a further four comments, including one comment from a new stakeholder, were received during a second 7-day public consultation period. The second consultation period was conducted as a result of changes to the proposal prior to setting of Level of Assessment. This indicates a moderate level of public interest in the proposal.

Consideration of Whether the Change is Unlikely to Significantly Increase Any Impact that the Proposal May Have on the Environment

The following were considered:

a) Values, sensitivity and the quality of the environment which is likely to be impacted

    The EPA's determination on level of assessment for the original proposal identified the following preliminary key environmental factors:

    - Benthic Communities and Habitat;
    - Marine Environmental Quality;
    - Marine Fauna;
    - Flora and Vegetation;
    - Terrestrial Fauna;
    - Inland Waters, and

- Social Surroundings.

These factors were also considered in the Environmental Scoping Document endorsed by the EPA on 30 November 2018. The changes to the proposal from level of assessment do not require any additional factors to be considered as preliminary key environmental factors.

b) Extent (intensity, duration, magnitude and geographic footprint) of the likely impacts

The extent of the likely impacts has been considered in the sections above, and is considered unlikely to be significantly increased by the proposed changes because:

- The total extent of the direct impacts associated with the change represents a 17.5% increase over the area of the original proposal, and is not considered to be a significant increase.
- There is unlikely to be any significant increase in impacts to any individual vegetation or BCH type as a result of the changes, with the exception of the AcAjTe Soak vegetation type, which would be avoided unless identified outside the development envelope.
- Indirect impacts including sedimentation from dredging in the ZoHI, and changes to tidal flows are unlikely to be significantly increased by the proposed changes.
- The duration of the impacts associated with the proposal would not be increased by the proposed changes.
- The geographic footprint of some impacts would be changed by the revised proposal, including the re-alignment of the dredge channel and intertidal crossing structures. However, consideration of the BCH types in the original and revised proposals indicate that this would result in a decrease in impacts to significant vegetation and habitat types.

c) Consequence of the likely impacts (or change)

The consequence of the likely impact or implementing the change is likely to be similar to or the same as that of implementing the original proposal.

d) Resilience of the environment to cope with the impacts or change

The EPA considers that the resilience of the environment to cope with the impacts from the change to proposal from referral remains unchanged from that of the original proposal, should it be implemented.

e) Cumulative impacts with other projects

The Change to the proposal could result in an increase to the cumulative impacts on Algal Mat in the region, in conjunction with other similar proposals in the region.

The acceptability of the proposed level of cumulative disturbance to Algal Mat would be considered by the EPA through further consultation with relevant agencies during the assessment of the proposal, however the increase in direct disturbance to Algal Mat is unlikely to significantly change the outcome of the assessment.

f) Connections and interactions between parts of the environment to inform holistic view of impacts of the whole environment

The change to the proposal would not result in any connections or interactions with the receiving environment that are different from the original proposal. A holistic assessment of the proposal's impacts to the whole environment will be undertaken during the EPA's assessment of the proposal.

g) Level of confidence in the prediction of impacts and the success of proposed mitigation

The revised development envelope is within the area in which the proponent's environmental investigations were undertaken. There is no change to the level of confidence in the predicted impacts and the success of the proposed mitigation.

h) Public interest about the likely effect of the proposal, if implemented, on the environment, and public information that informs the EPA's assessment

The EPA is of the opinion that public interest in the proposal is unlikely to change.

Conclusion

In conclusion, the EPA considers that the change is unlikely to significantly increase any impact the proposal may have on the environment primarily because:

a) The total increase in direct disturbance of 17.5 % is not considered to be significant in the context of the entire proposal.
b) The increase in impacts to Algal Mat from 457 ha to 880 ha is not considered to represent a significant increase in impacts to this BCH type within a Regional context.
c) The The AcAjTe Soak vegetation type can be avoided until it is identified outside the development envelope.
d) The re-alignment of the jetty, bitterns infrastructure and dredge channel is likely to result in a reduced impact to significant BCH types, given the proximity of the original footprint to islands with known significant BCH types.

e) The increase of 5.5 ha direct impacts to BCH associated with changing the intertidal crossing infrastructure is not considered to be significant.

f) Modelling has demonstrated that the change to indirect impacts associated with the rock causeway would be minimal.

g) Changes to the development envelope, including re-alignment of the intertidal crossing and dredge envelopes and exclusion of significant species and sites including Mardie Pool, are likely to result in a reduction in impacts to relevant environmental values.

Figure 1 – Overview of proposed changes

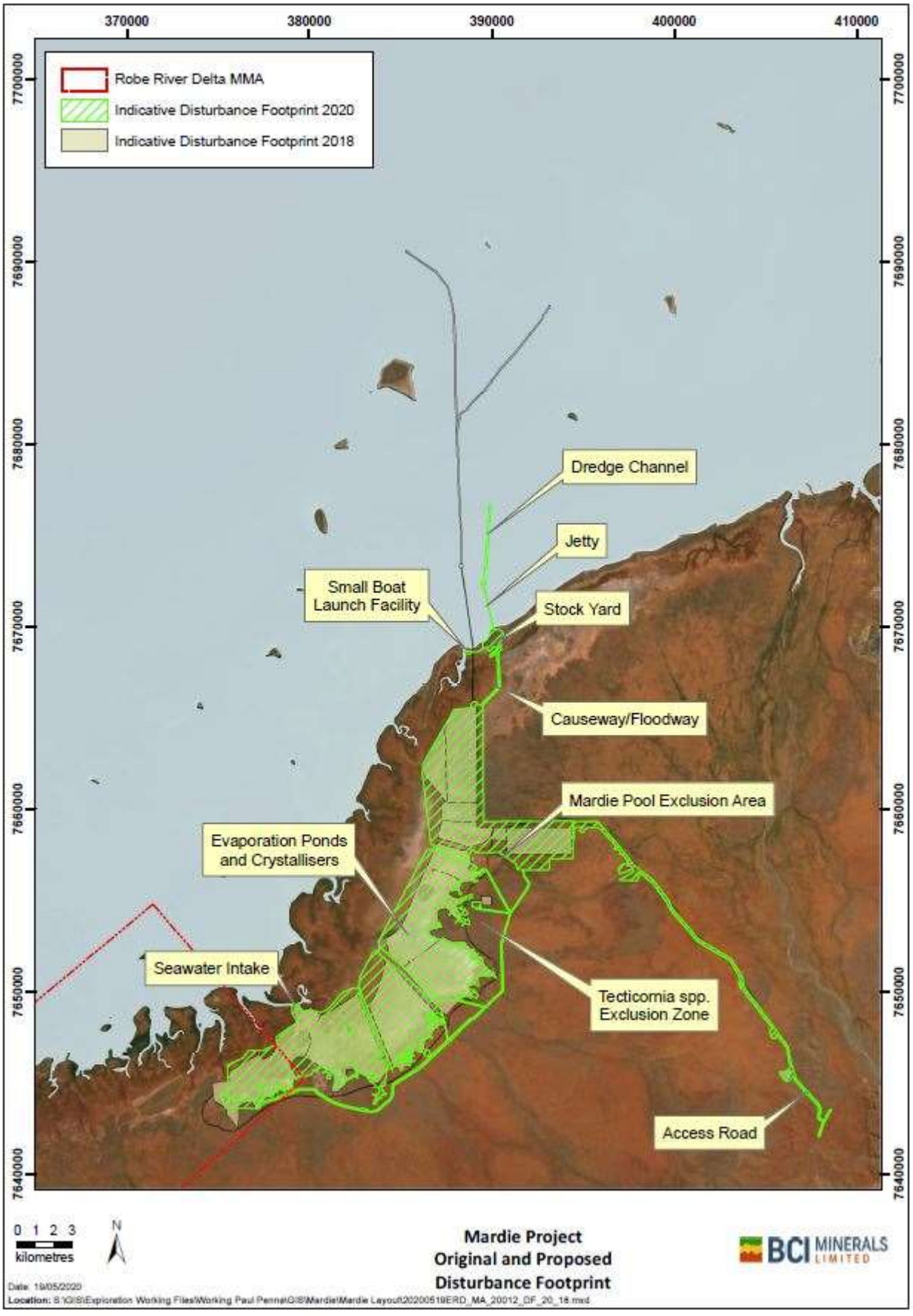


Figure 2 – proposed additional port areas and AcAjTe (Soak) vegetation type

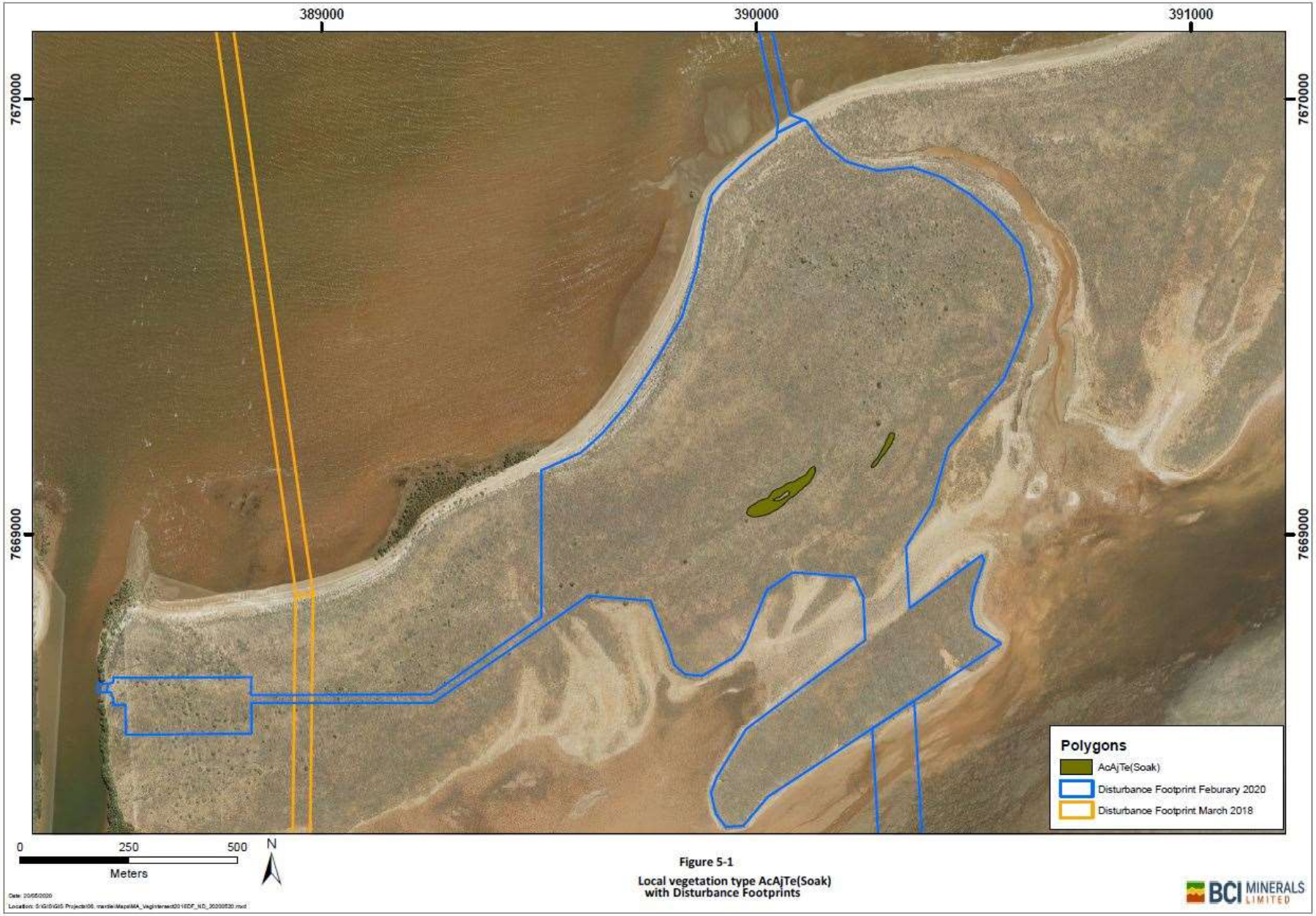


Figure 3 – Changes to impacts on BCH (Marine)

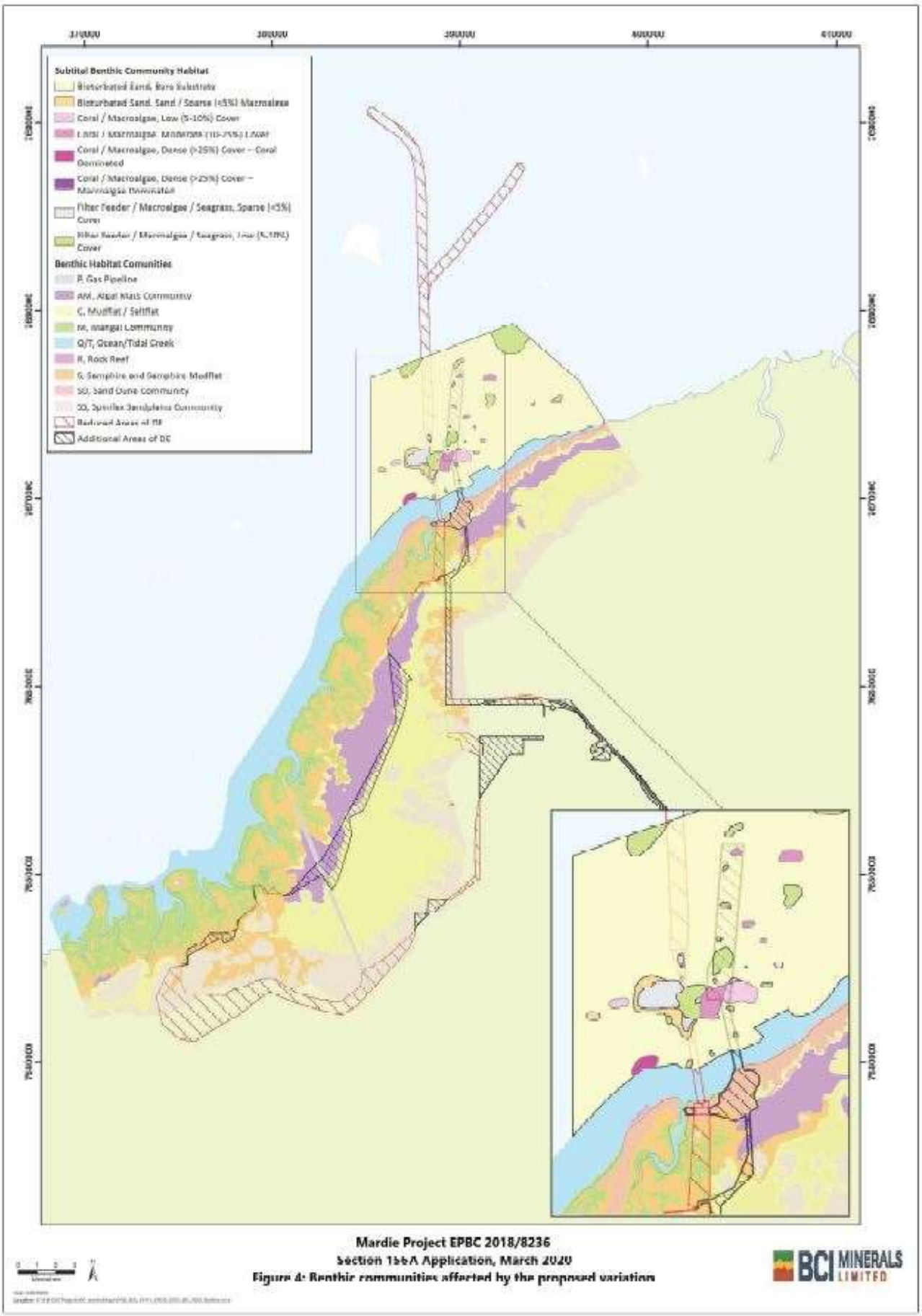


Figure 4 – Changes to impacts on BCH (Intertidal)

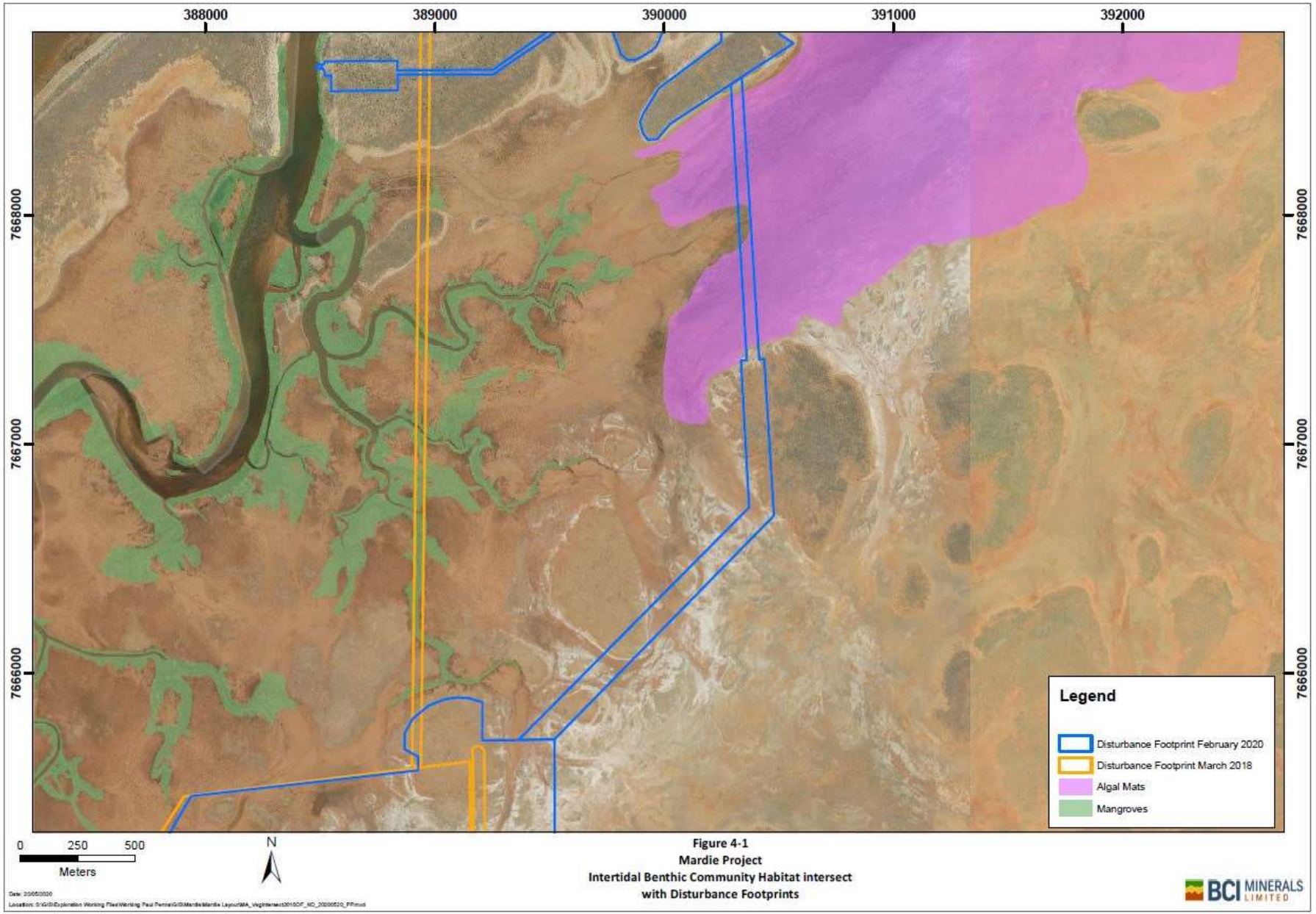


Figure 5 – Intertidal modelling (Causeway)

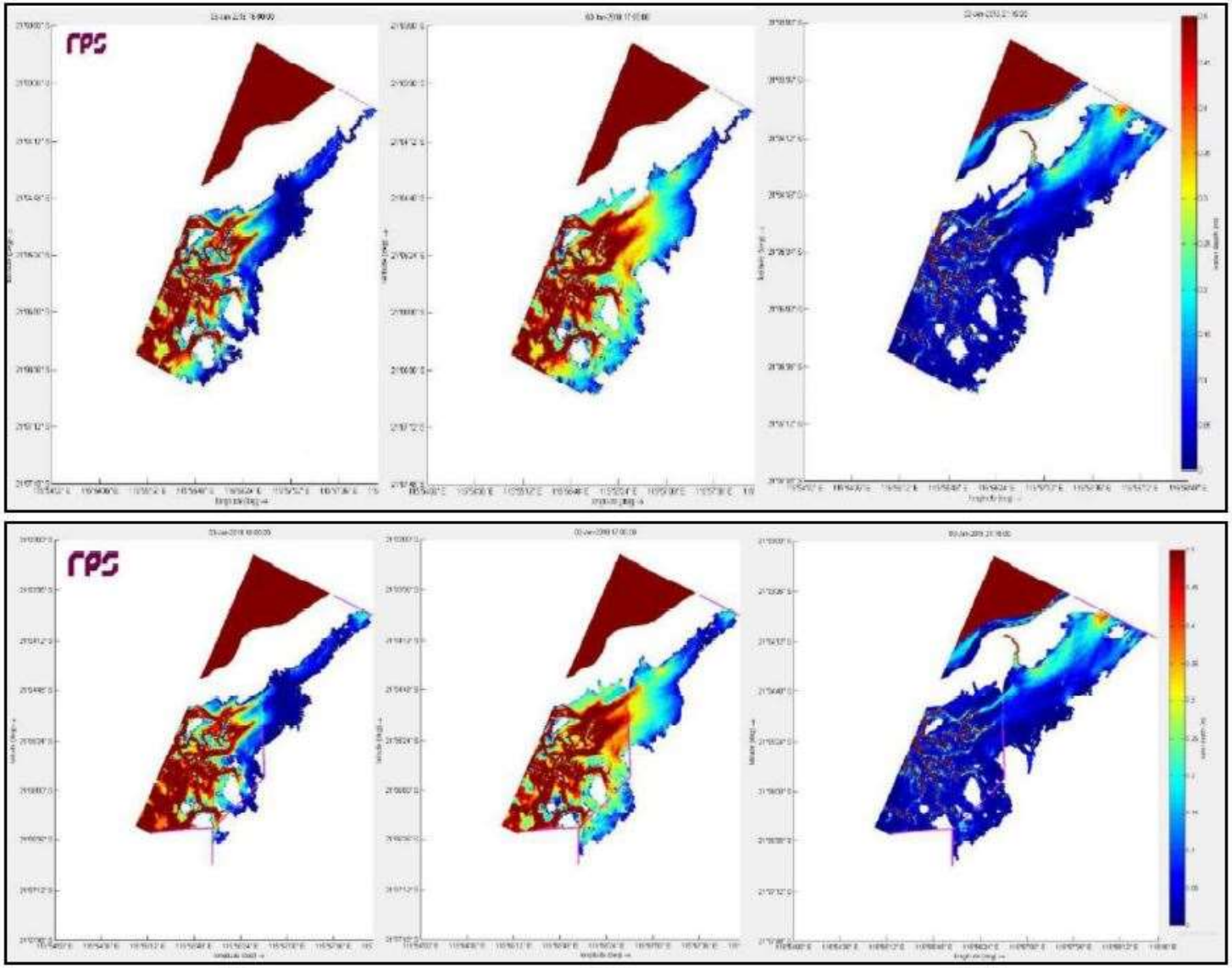


Figure 60: Comparison of water depth between the base case (top images) and the proposed floodway / causeway case (bottom images)

Schedule 1

Change to Proposal

Element	Current Proposal	Changed Proposal
Development envelopes	• 16,937 ha • As shown in Figure 1	• 16,024 ha • As shown in Figure 1
Disturbance Footprint	• 9,551 ha • As shown in Figure 2	• 11,221 ha • As shown in Figure 2
Marine Infrastructure Disturbance	• 22 ha	• 7 ha
Dredging program	• 146 ha direct disturbance • 500,000 m^3 dredge volume	• 55 ha direct disturbance • 800,000 m^3 dredge volume
Intertidal crossing	• Trestle jetty • As shown in Figure 2	• Rock Causeway • As shown in Figure 2

Figure 1: Changes to referred Project Development Envelope
Figure 2: Change to referred Proposal footprint

Figure 1 – Changes to Development Envelopes

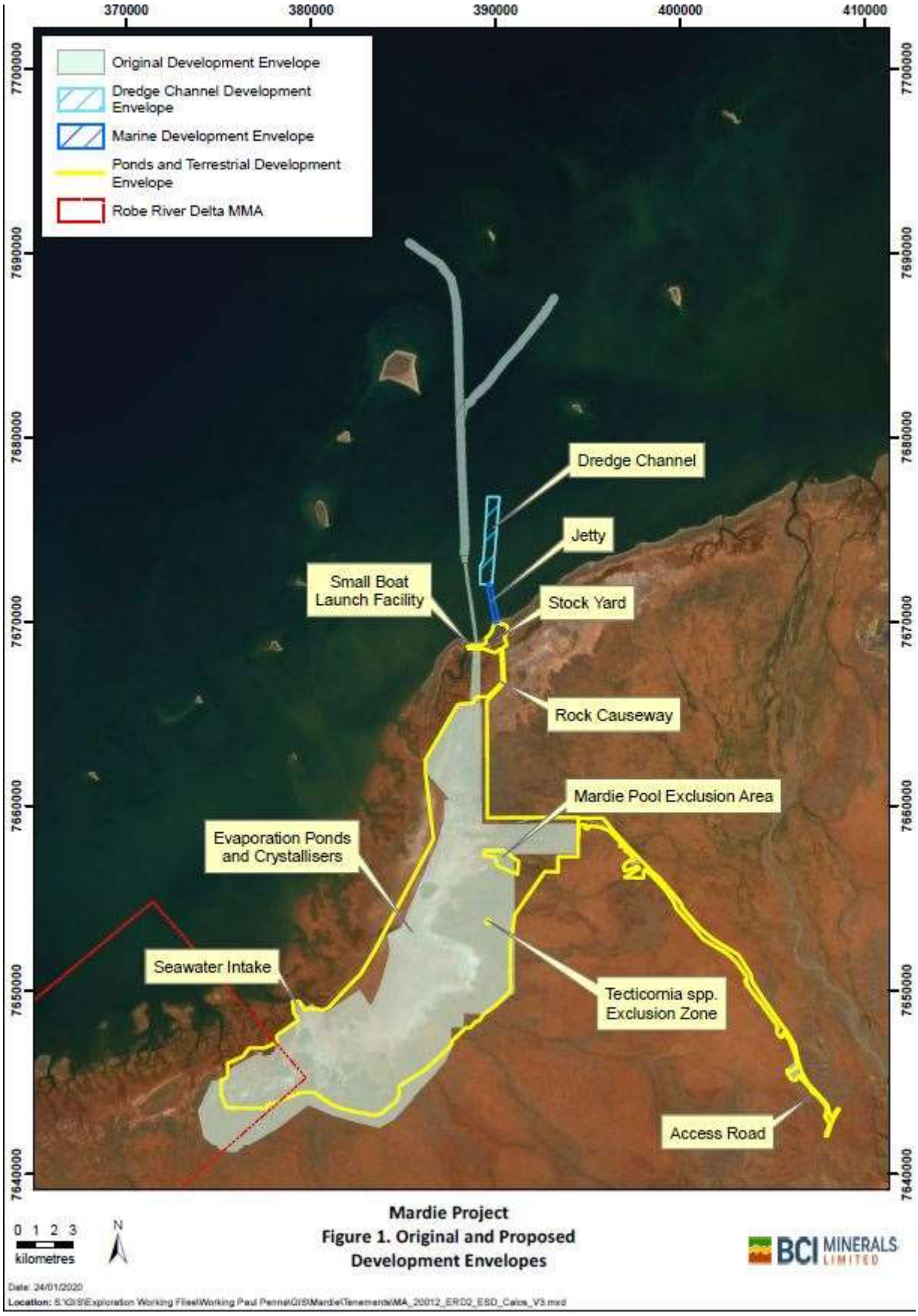


Figure 2 – Changes to Project disturbance footprint