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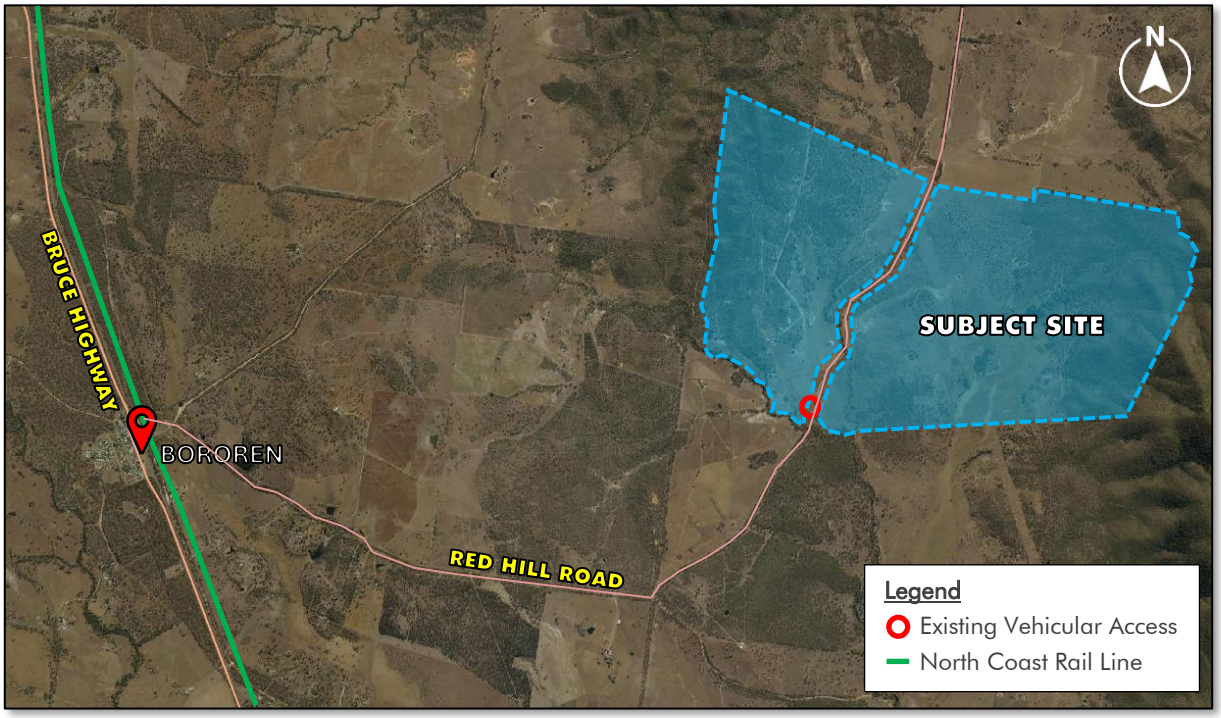
CENTRAL QUEENSLAND BESS
OSOM CONSTRUCTION CONCEPT STRATEGY

BACKGROUND

The subject site is located at 837 Red Hill Road, Bororen and is formally identified as Lot 132 on FD700. An aerial view of the site is shown in Figure 1. The project involves a reconfiguration of a lot (from one lot into three lots and an access easement), with a material change of use for the construction of a battery energy storage (BESS) facility and a substation (Gladstone Regional Council development application reference: DA/10/2026).

A traffic impact assessment (TIA) has been prepared in support of the development (PTT reference 240-510 Revision C and dated 13 January 2026) and this Oversize / Overmass (OSOM) Construction Concept Strategy should be read in conjunction with the submitted TIA.

Figure 1: SUBJECT SITE



The site is accessed via Red Hill Road which is a classified as a rural collector road according to Gladstone Regional Council. Red Hill Road meets the Bruce Highway at a four-way priority-controlled intersection where it forms the minor approach. Red Hill Road is subject to a default unposted rural speed limit of 100km/h. Red Hill Road is sealed for a distance of approximately 3.0km from the intersection with the Bruce Highway, after which it is an unsealed road. The sealed section of Red Hill Road has a pavement

width of approximately 5.0m wide with unsealed shoulders. The unsealed section of Red Hill Road is generally 6.0m wide on an 8.0m formation.

The Bruce Highway is a state-controlled road, which falls under the jurisdiction of the Department of Transport and Main Roads (TMR). It is a sealed, undivided road with one lane of traffic in each direction and has a posted speed limit of 60km/h in the vicinity of the town of Bororen and the intersection with Red Hill Road.

The North Coast rail line runs parallel to the Bruce Highway, which is used for long-distance passenger services and freight. A level crossing is located on Red Hill Road, approximately 55m east of the intersection with the Bruce Highway. The crossing is controlled with flashing lights and boom gates on both approaches. There is approximately 45m of storage space for a vehicle turning into Red Hill Road to queue between the level crossing stop line and the through traffic lanes on the Bruce Highway.

CONSULTATION

Consultation for the BESS project is underway with the following key stakeholder groups identified:

- Gladstone Regional Council:
- Department of Transport and Main Roads
- National Heavy Vehicle Regulator
- Gladstone Ports Corporation
- Queensland Rail
- Local community

The purpose of the consultation strategy with respect to traffic impacts is to:

- Inform stakeholders and the local community about the proposed BESS facility
- Identify potential concerns early in the planning process
- Identify specific construction traffic impacts in terms of:
  - Anticipated construction vehicle types and volumes
  - Delivery of large components and potential requirements for OSOM transport
  - Temporary traffic management measures during construction
- Provide an opportunity for feedback to inform the detailed design of upgrade / mitigation works and assessment of the project

OSOM COMPONENTS

The OSOM requirements of the project are expected to be limited to the delivery of transformers. The project will require two 250MVA transformers, which step the voltage from 33kV to 275kV. It is understood that the transformers will be shipped and transported as separate components that would be assembled on site. It is expected that there will be one OSOM vehicle return trip per transformer, associated with the delivery of the main transformer unit, with around 6-8 semi-trailer deliveries of sub-assemblies and components. Each main transformer unit is anticipated to have dimensions of 13.8m long by 4.1m wide and 4.5m high, with a weight of up to 174 tonnes.

It is understood that battery modules are dimensioned roughly 6.1m long by 2.4m wide and 2.9m high, which is roughly the same as a 20-food shipping container. Therefore, it is expected that these modules would be transported on a typical 19m long articulated semi-trailer flatbed truck.

OSOM VEHICLE TYPES

It is expected that the transformer components will be transported (empty of oil) utilising a 48m long drop-bed platform trailer, with an 8-tyre axle group. This vehicle types has a width of 4.5m, with a travel height in the order of 5.5m and a maximum turning radius of 37m.

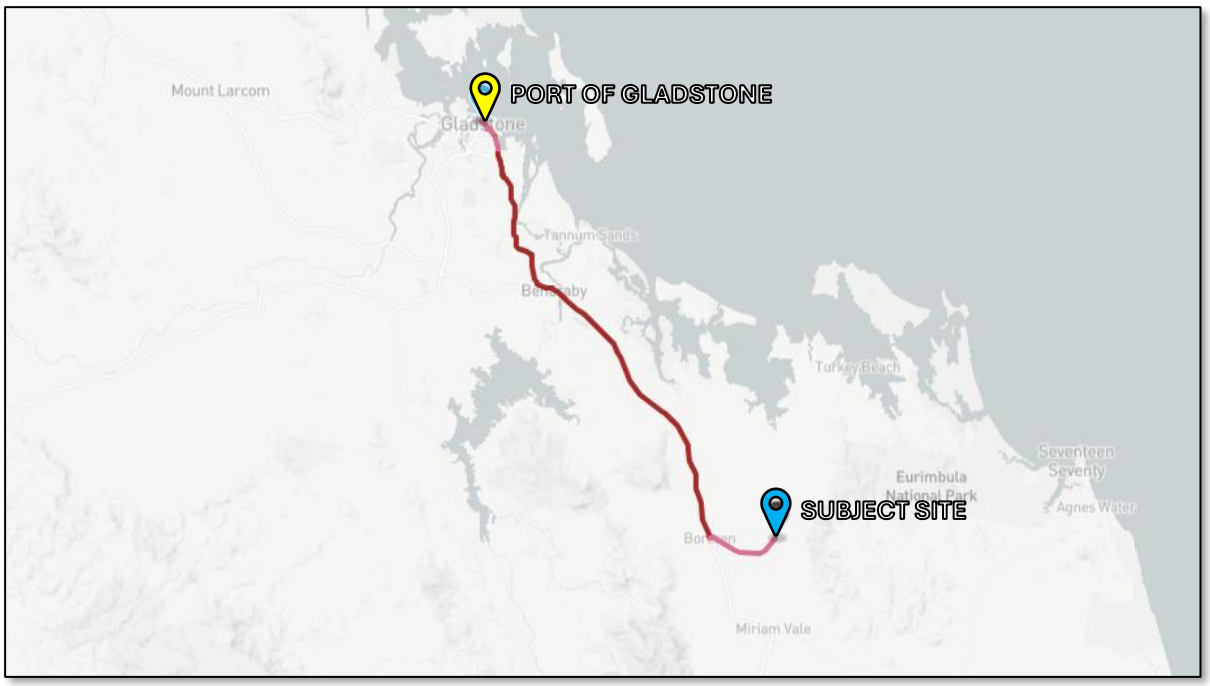
OSOM VEHICLE ROUTE

The subject site is accessed via Red Hill Road which in turn is accessed off the Bruce Highway, which forms part of the national highway network. The site is linked to the Port of Gladstone via the following established OSOM routes:

- Gladstone Port Access Road
- Gladstone Benaraby Road
- Bruce Highway (Gin Gin – Benaraby section)

These roads are highlighted in Figure 2.

Figure 2: HEAVY VEHICLE ACCESS ROUTE



OSOM VEHICLE ROUTE ASSESSMENT

The Gladstone Port Access Road, Gladstone Benaraby Road and the Bruce Highway are established OSOM routes and have not been considered further. Therefore, the assessment of the proposed OSOM route has focused on the section of road between the Bruce Highway and the site access on Red Hill Road.

The following "pinch points" on the OSOM route have been identified:

1. Bruce Highway / Red Hill Road Intersection



OSOM vehicles will turn left from the Bruce Highway into Red Hill Road and subsequently turn right from Red Hill Road onto the Bruce Highway. Due to the size and turning characteristics of the OSOM vehicles, temporary traffic management measures are expected to be required to facilitate these movements, including short-duration traffic holds to allow the vehicles to utilise the full width of the Bruce Highway during the turning manoeuvres. In addition, minor temporary works may be required at the intersection, such as localised widening and the temporary removal or relocation of street furniture. Detailed swept path analysis using the specific OSOM vehicle configuration will be undertaken to confirm the turning requirements and identify the precise nature of any intersection modifications required.

2. Red Hill Road Level Crossing (Chainage 0.05km)



A level rail crossing is located on Red Hill Road, approximately 55m east of the intersection with the Bruce Highway. At this stage, no specific mitigation measures are expected to be required for OSOM movements over the crossing. However, coordination will be required at the permitting stage to ensure that OSOM vehicle movements do not conflict with scheduled rail services.

3. Red Hill Road Culvert Crossing (Chainage 0.5km)



There is a large culvert on Red Hill Road, immediately to the west of Bates Road. An assessment will be undertaken to confirm the culvert has sufficient load carrying capacity for the proposed OSOM vehicle configuration and axle loads. Where required, mitigation measures such as temporary load distribution or culvert strengthening / replacing will be implemented.

4. Red Hill Road Sealed Section (Chainage 0km to 3.0km)



The sealed section of Red Hill Road has a pavement width of approximately 5.0m wide with unsealed shoulders. Localised road widening maybe required to accommodate OSOM movements, particularly on bends. In addition, minor vegetation clearing may be required to provide adequate lateral clearance for OSOM vehicles.

5. Red Hill Road Culvert Crossing (Chainage 1.4km)

There is a large culvert on Red Hill Road located at approximately chainage 1.5km. An assessment will be undertaken to confirm the culvert has sufficient load carrying capacity for the proposed OSOM vehicle configuration and axle loads. Where required, mitigation measures such as temporary load distribution or culvert strengthening / replacing will be implemented.



6. Red Hill Road Unsealed Section (Chainage 3.00km to 10.1km)

The unsealed section of Red Hill Road is generally approximately 6.0 m wide, although some narrower sections are present. Accordingly, localised widening may be required to accommodate OSOM movements, particularly on bends. In addition, vegetation adjacent to and overhanging the carriageway will need to be trimmed or removed to provide sufficient clearance for the OSOM vehicles.



7. Red Hill Road 90-degree bend (Chainage 5.9km)

There is a 90-dgree bend in the horizontal alignment of Red Hill Road where it meets Smallcombs Road. Subject to a detailed swept path assessment, it is expected that road widening will be required in the vicinity of the Red Hill Road / Smallcombs Road intersection to accommodate OSOM vehicle movements. Vegetation clearing will also be required to improve sight distance around the 90-degree bend.



8. Red Hill Road Cattle Grid and Creek Crossing (Chainage 8.2km)

There is an existing cattle grid and creek crossing (Killarney Creek) located where Red Hill Road meets the southern boundary of the subject site. To facilitate construction access and accommodate OSOM vehicle movements, the cattle grid will need to be removed and the creek crossing upgraded through the installation of an appropriately designed culvert structure.



9. Red Hill Road Floodway (Chainage 9.1km)

There is an existing floodway / creek crossing on Red Hill Road located at approximately chainage 9.1km. To accommodate OSOM vehicle movements, the creek crossing will need to be upgraded through the installation of an appropriately designed culvert structure.



10. Red Hill Road Cattle Grid (Chainage 9.4km)

There is an existing cattle grid on Red Hill Road located at approximately chainage 9.4km. To accommodate OSOM vehicle movements, the cattle grid will need to be removed and the pavement reinstated.



CONCLUSION

Based on a review of the proposed OSOM route, it is considered that construction haulage can be feasibly achieved subject to the upgrade / mitigation works identified on Red Hill Road. It is recommended that a Traffic Management Plan be conditioned, including a detailed OSOM route assessment, which will confirm the suitability of the route, identify any additional infrastructure constraints, and specify the mitigation measures and temporary works required to safely accommodate OSOM vehicle movements.