Template

Proposal Content Document

Table 1: General proposal content description

Proposal Title:	**Boskalis Cambridge Gulf Marine Sand Proposal**
Proponent Name:	Boskalis Australia Pty Ltd - ACN 099 738 333
Short Description:	*Sourcing of marine sands from Cambridge Gulf north of Wyndham in northeast Western Australia for export to overseas construction projects.* Boskalis Australia Pty Ltd (BKA) is assessing the feasibility of developing a marine sand sourcing operation in Cambridge Gulf (CG) near Wyndham in the northeast of Western Australia (WA) (Figure 1). The sand in CG is derived from natural terrestrial sources via river inputs. The sand would be exported to Asian markets for use in construction projects. In proposing CG, BKA has screened alternatives as outlined in the covering EPA Form. The proposal is subject to the WA *Mining Act* including the comprehensive environmental assessment and management framework under that Act. BKA currently holds two exploration tenements in CG, E80/5655 (Block 4) and E80/6009 (Block 4A) (Figures 1 to 3). Subject to the outcome of the referral processes under the WA *Environmental Protection Act* (EP Act) and the Commonwealth *Environment Protection & Biodiversity Conservation Act* (EPBC Act), BKA plans to apply to the WA Department of Energy, Mines, Industry Regulation & Safety (DEMIRS) to convert the two Exploration Tenements to a single mining tenement, excluding the eastern half of Block 4 due to the lack of sand in that area, and covering the 'proposed operational area' (POA) only, as shown on Figures 1 and 2. To support its feasibility assessment BKA has undertaken a wide range of environmental, engineering, economic and other studies since 2018. These studies find that the proposal is feasible and viable and unlikely to cause significant environmental impacts, as defined under the WA EP Act and the Commonwealth EPBC Act. The findings of these studies are presented in the suite of Referral Reports submitted in support of this referral, as listed in Annex 1 to this Proposal Content Document (PCD). Despite the low likelihood of significant environmental impacts, as a responsible company with stringent environmental and social policies, BKA has committed to self-referring the proposal under section 38 of the WA EP Act, and to the Commonwealth under Part 7 of the EPBC Act, for determination of what further environmental assessments might be required, if any. If it is determined that assessment is required under both Acts, BKA will seek a joint process under the WA environmental assessment system, which is accredited by the Commonwealth. Key aspects of the proposal are as follows: 1. Project lifespan: Up to 15 years from commencement of operations. 2. Zero coastal or land-based development: The proposal does not involve the construction and operation of any shore-based facilities and does not involve the alteration of the coastline in any way. It will be a 100% vessel-based marine operation. 3. Marine area: The POA is located in the central part of the main body of CG where there is a significant seabed sand resource, covering an area of ~100 km^2 as shown on Figures 1 and 2. Water depths within the area average -25 m MSL. The seabed within and around the POA comprises highly-dynamic sand-waves (Figures 4 to 6) with very little biota and no significant benthic communities, due to the constantly moving substrate, strong tidal currents (>2 m/s), constantly high suspended sediments and permanent lack of benthic light (see Referral Report No. 2 - BKA 2024b). 4. Single vessel: The proposed operation will involve a Sand Production Vessel (SPV) based generally on the design of a large Trailer Suction Hopper Dredger (TSHD) (Figure 7). It will be an internationally-registered vessel subject to all relevant regulatory requirements of the International Maritime Organization (IMO) and the Australian Maritime Safety Authority (AMSA). While design is conceptual at this stage, indicative specifications are Length Overall (LoA) of ~350 m, draft of ~19 m, sand capacity 75K m^3 to 125K m^3 and crew of ~25. There will be no refuelling or waste discharges in CG.

5. Zero activity in CG for 86% of time: The SPV will self-load sand in CG for one to two days every two weeks. It will then sail to the sand delivery port in Asia and return to CG two weeks later to repeat the cycle. This means that the SPV will only operate in CG for 52 days per year, or 14% of the time. There will be zero operational activity in CG for 86% of the time during the project's lifespan of up to 15 years.

6. Sand volumes: Exploration surveys indicate that there is a minimum of 300 million m^3 of sand in the POA and likely several times more. There are several orders of magnitude higher volumes of sand throughout CG overall. It is proposed to export up to 70 million m^3 of sand. This is a maximum of only 23% of the minimum volume of 300 million m^3 of sand estimated to occur in the POA, and a much smaller % of the volume of sand that occurs throughout CG overall.

7. Low footprint each loading cycle: During each one- to two-day sand loading cycle, the SPV will work over an area of ~0.5 km^2 within the POA, with a drag-head width of ~6 m. The SPV will remove a layer of approximately 40 cm of sand from the seabed during each loading cycle.

8. End of project seabed condition: At the end of the 15-year project timeframe, if the proposed 70 million m^3 of sand is exported, the area within the POA will be on average <1m deeper than the pre-project seabed. It will still comprise sand with similar seabed morphology, dynamics and habitat features as before sand sourcing.

9. No significant environmental impacts: Overall, due to the above factors and other factors as assessed in suite of Referral Reports submitted in support of this referral (see Annex 1 of this PCD), and especially Referral Report No. 4 - *Impact Assessments* (BKA 2024d) and Referral Report No. 5 - *Metocean & Sediment Dynamics* (PCS 2024a), and with the implementation of best-practice impact avoidance, prevention, minimization, mitigation, management and monitoring measures, the proposal is unlikely to cause significant environmental impacts. If the proposal proceeds, BKA will seek to support research and monitoring initiatives to improve environmental protection and biodiversity conservation in the area, in cooperation with relevant stakeholders including TOs (see BKA 2024d).

10. Stakeholder engagement & consultation: BKA developed a stakeholder analysis and has undertaken and continues to undertake a comprehensive stakeholder engagement and consultation program. BKA is working with key stakeholders to ensure that all views and perspectives are addressed. If the proposal proceeds, BKA will seek to continue consultation as a key part of project oversight arrangements, including through the establishment of a stakeholder reference or advisory group or similar.

11. Economic benefits: The proposal will generate a range of economic benefits, including payment of State royalties, payment of voluntary royalties to TO groups, up to 40-50 local jobs, service contracts and business opportunities with priority focus on TOs, and support for local Indigenous Ranger groups and community development.

12. TO support: BKA has engaged and continues to engage closely with both TO groups in the area, Balanggarra and Miriuwung-Gajerrong, and they have both issued letters of support for the proposal (attached as annexes to Referral Report No. 3 - *Traditional Owner Matters*, BKA 2024c).

Table 2: Proposal Content Elements

Table 2A: *Physical Elements*

Physical Elements	Location / Description	Maximum Extent, Capacity or Range
Only three physical elements:	The proposal involves only three physical elements: – Proposed Operational Area (POA): The POA is area of seabed within Cambridge Gulf (CG) that constitutes the proposed sand sourcing area where sand will be sourced from. – Sand Production Vessel (SPV): The SPV is the vessel that will be used to both source the sand from within the POA and to export the sand to the market destination(s) in Asia. The SPV constitutes the only 'plant and equipment' that will be used as part of the proposal and is therefore considered to be a 'Physical Element'. – Navigational Area: This is the area where the SPV will navigate in order to arrive at and depart CG and manoeuvre within CG, including but not limited to the POA. Each of these are described below. The proposal does not involve the construction and operation of any marine infrastructure or shore-based facilities, and does not involve the alteration of the coastline in any way. It will be a 100% vessel-based marine operation. A small support vessel may be based in the Port of Wyndham for use in environmental monitoring in CG and for transfers to/from the SPV if needed. The SPV will not enter the Port of Wyndham (it will be too large to do so).	
Proposed Operational Area (POA): (sand sourcing area)	See Figures 1 & 2 attached. A detailed description of the POA and CG overall is presented in Referral Report No. 2 - *Proposal Setting & Existing Environment Descriptions* (BKA 2024b). The SPV will only extract sand from within the POA, subject to approval of an aligned mining tenement under the WA *Mining Act*. The POA has an overall irregular rectangular shape with a longer north-south axis (~15 km) and a shorter east-west axis (~7 km) (see column on right for extent, areas etc). The POA is located in the central part of the main body of CG where there is a significant seabed sand resource. It is located south-west of Lacrosse Island, (which sits in the centre of the entrance to CG), south of Cape Dussejour on the western side of the entrance to CG and east of the mouths of the Helby and Lyne Rivers and Vancouver Point, which are the west coast of CG (Figure 1). Water depths within the POA average -25 m MSL. Approx. 75 km^2 (75%) of the POA comprises seabed sand habitat, which is the subject of BKA's sand-sourcing proposal. These areas comprise large mobile dunes with seabed sand waves, aligned SSW to NNE parallel with the flood and ebb tidal currents (Figures 4 to 6). The sand waves have vertical heights ranging from 1 to 8 m and horizontal wavelengths of between 50 and 200 m. Repeat hydrographic surveys measured horizontal migration of the sand waves over distances of up to 10 m in just 27-days over a lunar tidal cycle, from SSW to NNW (BKA 2024b).	See Figures 1 & 2 attached. Table 1 attached summarizes key data relating to the scale and duration of the proposal. The POA has an overall irregular rectangular shape with a longer north-south axis (~15 km) and a shorter east-west axis (~7 km). Because of the irregular boundaries with 'indents' as shown on Figures 1 and 2, its overall area is 100 km^2 rather than 105 km^2 if it had regular boundaries of 15 x 7 km. The sand resource within the POA is described in detail in Referral Report No. 2 (BKA 2024b). Approx. 75 km^2 (75%) of the POA comprises seabed sand habitat, which is the subject of BKA's sand-sourcing proposal, as described in the left-hand column. The maximum thickness (depth) of the sand in the POA may be up to ~15 m on top of the dunes. Towards the troughs of the dunes the thickness reduces, and the average depth of sand in the POA overall is estimated to be ~4 m. The SPV will only remove ~ 40 cm of sand over ~0.5 km^2 (0.5%) of the POA during each one- to two-day sand-loading cycle. Exploration surveys indicate that there is a minimum of 300 million m^3 of sand in the POA and likely several times more. There are several orders of magnitude higher volumes of sand throughout CG overall. It is proposed to export up to 70 million m^3 of sand. This is a maximum of only 23% of the minimum volume of 300 million m^3 of sand estimated to occur in the POA, and a much

Physical Elements	Location / Description	Maximum Extent, Capacity or Range
	This highly dynamic nature of the seabed sand habitat, along with aphotic seabed conditions, inhibits benthos. Most sand samples from BKA's comprehensive benthic grab sampling program returned no biota after sieving to 500 microns, and any biota that was found in sand substrate mainly comprised small amphipods, isopods and brachyurans (BKA 2024b). The remaining 25% of the POA (the deeper gullies between the sand dunes), comprises various mixtures of clay, sand, shell-grit, gravel and pebbles/small rocks. The main benthic biota in these areas comprises small hydroids and other small organisms attached to pebbles/small rocks (BKA 2024b). The POA and CG overall do not support any significant benthic biota or communities, due to the constantly moving substrate, strong tidal currents (>2 m/s), constantly high suspended sediment loads and turbidity, permanent lack of benthic light and major pulses of freshwater and terrestrial sediment inputs during the wet season (for details see Referral Report No. 2 - BKA 2024b). As shown on Figure 2, jurisdictionally, the POA is located within the State Internal Waters of WA (landward of the Territorial Sea Baseline), and is thus subject to the full jurisdiction of the State of WA. The area is also within the sovereign territory of Australia and subject to relevant Commonwealth laws. To seaward of CG is the State North Kimberly Marine Park, which extends from the Territorial Sea Baseline seaward to the 3 nm State limit. Seaward of the 3 nm State limit is the Commonwealth Joseph Bonaparte Gulf Marine Park. As shown on Figure 2, the coast and hinterland on the western side of CG are Native Title lands of the Balanggarra peoples, which includes marine areas of the State Marine Park out to 3 nm. The coast and hinterland on the eastern side of CG are Native Title lands of the Mirriuwung-Gajerrong peoples, which includes marine areas within the 'False Mouths of the Ord River'. There is no Native Title determination over marine waters within the main body of CG, including the POA. Both TO groups in the area, Balanggarra and Miriuwung-Gajerrong, have issued letters of support for the proposal (see also Referral Report No. 3 - *Traditional Owner Matters*) (BKA 2024c). The Port of Wyndham is located ~80 km upstream from the POA and is under the jurisdiction of the Kimberley Ports Authority (KPA). The POA is not within the declared port area. The local Government for the area is the Shire of Wyndham & East Kimberley (SWEK), with its main office in Kununurra.	smaller % of the volume of sand that occurs throughout CG overall. The sourcing of up to 70 million m^3 of sand over the total POA will equate to an average removal of <1 m below the existing seabed depth, over the 15-year project period.
Sand Production Vessel (SPV): The SPV constitutes the only 'plant and equipment' that will be used as part of the	The SPV will be based on a large Trailer Suction Hopper Dredger (TSHD) (Figure 7), designed and built specifically for this proposal. Key dimensions and specifications are listed in the right-hand column.	Table 1 attached summarizes key data relating to the scale and duration of the proposal. SPV key dimensions and specifications are: – Length Overall (LoA): Up to 350 m. – Draft: Up to 20 m. – Drag-head width: 6 m.

Physical Elements	Location / Description	Maximum Extent, Capacity or Range
proposal and is therefore considered to be a 'Physical Element'.	The SPV will be home-ported in an overseas port and will only enter CG for the sand loading operation for one- to two-days every two weeks over the 15-year project life-span (see 'Operational Elements' below).	– Sand capacity: 75K m^3 to 125K m^3. – Crew: Up to 25. The design, construction and operation of the SPV will comply in full with all relevant requirements of the international maritime regulatory regime, as administered by the International Maritime Organization (IMO) and implemented in Australia by the Australian Maritime Safety Authority (AMSA).
Navigational Area:	There are three physical areas that comprise the navigational area: – Arrival /departure route: See Figure 2 (dashed blue line). This is the route that the SPV will follow when arriving and departing CG at the start and end of each sand-loading cycle. It passes through both the Commonwealth Joseph Bonaparte Gulf Marne Park and the State North Kimberley Marine Park, through which normal transit shipping is permitted, and as per the commercial ships that routinely enter and depart the Port of Wyndham. The Management Plan for the North Kimberley Marine Park includes a specific provision that no restrictions will be placed on commercial vessel transits to, from or within CG. – Sand loading area: Equates to the POA. – Manoeuvring area: When operating within CG the SPV will need to navigate outside of the POA in order to turn and manoeuvre at the end of each sand-loading run. The drag-head will be lifted and inoperable during all navigation outside of the POA.	Arrival / departure route: The SPV will generally follow the indicative route marked by the dashed blue line on Figure 2, subject to normal freedom of navigation provisions the give the Master the responsibility to determine the safest and most efficient course given conditions at the time, subject to normal maritime regulatory requirements. The SPV will enter and depart CG via West Entrance, using the designated shipping channel used by ships entering and departing the Port of Wyndham, located upstream of CG. Sand loading area: As per the POA. Manoeuvring area: All navigable waters inside CG both within and outside of the POA, noting that the SPV will have a draft of ~20 m. BKA has consulted and continues to consult with DOT-Maritime, the Kimberley Ports Authority and the operator of the Port of Wyndham (Cambridge Gulf Ltd) on arrangements to ensure that there are no impacts on existing navigation of ships through CG. Referral Report No. 4 - *Impact Assessments* (BKA 2024d) includes a shipping risk assessment.

Table 2B: *Construction Elements*

Construction Elements	Location / Description	Maximum Extent, Capacity or Range
Nil.	There will be no construction activities associated with this proposal. The proposal does not require the construction of any marine or shore-based facilities, wharves, jetties or other infrastructure, land-reclamation, alteration of the coastline or clearing of mangroves or other vegetation. The Sand Production Vessel (SPV) will simply arrive from overseas to commence operations after (if) the proposal is approved.	N/a

Table 2C: *Operational Elements*

Operational Elements	Location / Description	Maximum Extent, Capacity or Range
Only three operational elements:	The proposal involves only three operational elements: – Arrival & departure of the SPV to/from CG. – Sand-loading and manoeuvring within CG. – Minor support operations from Wyndham. Each of these are described below.	
Arrival & departure of the SPV to/from CG:	Figure 2. The SPV will arrive and depart via the 'arrival / departure route' as described under 'Navigational Area' in the Physical Elements section above.	Figure 2. Spatial extent: – As per the 'arrival / departure route' described under 'Navigational Area' in the Physical Elements section above. Temporal extent: – At the beginning of each operational cycle the SPV will arrive at CG and enter the POA to commence sand loading operations. – Sand loading will take place over one- to two-days, whereafter the SPV will depart CG to sail to the sand delivery port in Asia to unload the sand. – The voyage time to and from the sand delivery port will be ~ 2 weeks. – This means that there will be an arrival and departure of the SPV to and from CG every two weeks, with one- to two days between arrival and departure as the SPV loads sand within CG (in the POA).
Sand-loading and manoeuvring within CG:	The SPV will only load sand within the POA / subject to approval as a mining tenement. The SPV will have a single 6 m wide drag-head. The SPV will follow 'runs' up and down or across the POA depending on site conditions on the day. The SPV will remove a layer of ~40 cm of sand from the seabed during each one- to two-day loading cycle. The sand will be pumped aboard the SPV as a sand-water mixture and the overflow water will be discharged back into CG. The SPV will be equipped with best-practice turbidity reduction measures including 'green valve' fitted to the water overflow. The SPV will load between 75K m^3 to 125K m^3 of sand during each operational cycle and up to 300M m^3 of sand over the project's 15-year life span. As outlined above, manoeuvring of the SPV will occur both within and outside the POA in all navigable parts of CG, as the SPV needs to turn at the end of each sand loading run. The drag-head will be lifted and inoperable when outside of the POA. There will not be any discharges of wastes or pollutants from the SPV in CG or Australian waters. All garbage will be kept on board and managed per	Spatial extent: – Sand loading will only occur within the POA / subject to approval as a mining tenement. – During each one- to two-day sand loading cycle, the SPV will work over an area of ~0.5 km^2 (0.5% of the POA), with a drag-head width of ~6 m. – As outlined above, manoeuvring of the SPV will occur both within the POA and outside the POA in all navigable parts of CG. Temporal extent: – As outlined above, sand-loading and manoeuvring within CG will take place over one- to two-days, until the SPV is fully loaded and departs for the sand delivery port in Asia, to return to CG two-weeks later. – This means that the SPV will only operate in CG for 52 days per year, or 14% of the time.

Operational Elements	Location / Description	Maximum Extent, Capacity or Range
	MARPOL Annex V, and discharged at MARPOL-compliant facilities at the sand-delivery port. There will not be any refuelling of the SPV in CG or in Australian waters, eliminating the potential risk of spills from this activity. The design, construction and operation of the SPV will comply in full with the international maritime regulatory regime, as administered by IMO and implemented in Australia by AMSA. The SPV will be permanently fitted with turtle-safe lighting as per Commonwealth guidelines, and best-practice marine fauna observation and avoidance systems will be implemented when it operates in CG. All aspects of the operation of the SPV, including its tracks and sand loading coverage and production, will be automatically monitored with data able to be transmitted in real-time to shore-based recipients. Up to 40 crew positions will be available on the SPV for locally-based persons and BKA is consulting with the local TO groups on providing training and development pathways for these positions.	– There will be zero operational activity in CG for 86% of the time during the project's lifespan of up to 15 years. – The SPV will operate continuously day and night during each one- to two-day loading cycle in CG.
Minor support operations from Wyndham:	The SPV will not enter the Port of Wyndham (it will be too large to do so), or any other Australian port (except in an emergency that requires port entry). All refuelling, provisioning, waste disposal, maintenance etc will be undertaken at the sand delivery port in Asia or other overseas ports. There is no requirement for major shore-based facilities or operations in CG or Wyndham to support the proposed operation, which eliminates potential impacts from such facilities or operations in the area. A small support vessel may be based in the Port of Wyndham for use in environmental monitoring in CG. BKA is looking to contract, train, equip and otherwise resource the local TO ranger groups to undertake environmental monitoring of the proposed operation. The support vessel could also do transfers to/from the SPV if needed, for example if a spare mechanical part is needed or if there is a medical situation where a crew-member on the SPV requires evacuation.	Any support vessel will be moored in the Port of Wyndham at a Kimberley Ports Authority approved mooring. The area of operation will be between Wyndham and CG for transfers and throughout CG for environmental monitoring.

Table 2D: *Proposal Elements with Greenhouse Gas Emissions*

Proposal elements with greenhouse gas emissions	
Construction Elements:	
Scope 1	N/a: There will not be any construction activities in WA or Australian jurisdiction.
Scope 2	N/a: There will not be any construction activities in WA or Australian jurisdiction.
Scope 3	N/a: There will not be any construction activities in WA or Australian jurisdiction.
Operational Elements:	
Scope 1	The only operational element of the proposal that will produce greenhouse gas emissions is the operation of the SPV. The proposal does not involve any shore-based or other operations that are sources of GHG emissions. BKA has applied EPA 2023, *Environmental Factor Guideline - Greenhouse Gas Emissions* in assessing this issue. The geographical scope of the Guideline is defined as the State of WA and its environment (out to 3nm). The Guideline states that the EPA will consider GHG emissions from a proposal where they are reasonably likely to exceed: – 100,000 tonnes CO2-e of scope 1 emissions in any year; or – 100,000 tonnes CO2-e of scope 2 emissions in any year. Referral Report No. 4 - *Impact Assessments* (BKA 2024d) includes an assessment of GHG emissions from the SPV. The GHG emissions while the vessel is operating in WA waters are calculated to be in the order of 13,000 metric tonnes/year of CO2-e, or 13% of the EPA trigger value of 100,000 tonnes per year. This Environmental Factor is therefore not triggered for the proposal in terms of the EP Act referral. The SPV will comply with Annex VI (Air Pollution) of the *International Convention for the Prevention of Pollution form Ships* (MARPOL) and the implementing Australian regulations (AMSA Marine Order 97). These regulations set strict standards and limits on emissions of GHG from ships, and require ships to implement a range of on-board energy efficiency and emissions reduction strategies and plans, including having an IMO-compliant ship-specific Energy Efficiency Design Index (EEDI) and Shipboard Energy Efficiency Management Plan (SEEMP). As part of BKA's fleet decarbonisation program, the SPV will be designed for dual-fuel use, allowing adoption of alternative cleaner fuels such as methanol as they become viable in future. The vessel could also potentially be fitted with Rotor Sails which can cut fuel consumption and this emissions on large ships by up to 30%. Through these measures the SPV will emit the lowest GHG emissions that are feasible. The SPV will be a 'new-build' vessel and thus able to incorporate relevant best practice GHG reduction measures from the design-phase, as per MARPOL Annex VI requirements.
Scope 2	N/a – all GHG emissions will be directly from the operation itself under Scope 1. The operation will not involve shore-based facilities or infrastructure that require consumption of energy to supply them with electricity or other emissions-generating operations.
Scope 3	N/a – as per Scope 2.

Table 2E: *Rehabilitation, Commissioning & Decommissioning*

Rehabilitation
The proposed operation will not remove, damage, destroy or degrade any important or sensitive benthic communities or habitats, marine primary producer communities or inter-tidal and coastal communities or habitats, so there will not be a need for rehabilitation of such areas. Assessment of sediment and seabed dynamics in the POA as outlined above indicates that due to strong tidal currents (up to >2 m/s) the sand areas are highly dynamic, with seabed sand forms migrating between 5 and 10 meters horizontally over a four-week period during spring tide. This indicates that natural sand forms are likely to reform rapidly after sand extraction, and that the pre-extraction seabed morphology will likely re-establish possibly within a matter of weeks – just slightly deeper (<1 m). This process will be aided by the fact that during the operation there will be two-week breaks between each sand loading cycle. This process will also be aided by the fact that the SPV will only operate over a very small part (0.5 km^2 or 0.5%) of the overall POA during each sand loading cycle, allowing that area to naturally reform as the SPV moves on to a different area in the next cycle. It is therefore likely that at the end of the 15-year project timeframe, there will be no need for active rehabilitation of the seabed back to pre-extraction morphology – this will likely occur naturally relatively rapidly. Please see: – Referral Report No. 2 - *Proposal Setting & Existing Environment Descriptions* (BKA 2024b). – Referral Report No. 4 - *Impact Assessments* (BKA 2024d). – Referral Report No. 5 - *Metocean & Sediment Dynamics (PCS 2024a, b & c*).
Commissioning
There are no commissioning elements with this proposal. As outlined in Table 2B the proposal does not require the construction of any marine or shore-based facilities, wharves, jetties or other infrastructure, land-reclamation or any other plant and equipment that will require commissioning. The SPV will simply arrive from overseas to commence operations after (if) the proposal is approved. It will be necessary to ensure that all required environmental baseline surveys have been completed, and that all necessary arrangements for ongoing environmental monitoring are commissioned and operational before sand-sourcing operations commence.
Decommissioning
Decommissioning will simply involve the permanent departure of the SPV after the final sand-loading operation is completed in CG. Post-project environmental monitoring could continue. Because the proposal does not require the construction of any marine or shore-based facilities, wharves, jetties or other infrastructure, there are no requirements to decommission such facilities.

Table 2F: *Other Elements*

Other elements which affect extent of effects on the environment		
Proposal time*	Maximum project life:	Up to 15 years. Note – in terms of temporal extent of potential impacts: As outlined above, the SPV will only be present in CG for one- to two-days very two weeks, or 52 days per year, or only 14% of the time per year. For 86% of the time there will be zero operational activity in CG.
	Construction phase:	There is no construction phase. The Sand Production Vessel (SPV) will simply arrive from overseas to commence operations after (if) the proposal is approved.
	Operations phase:	Up to 15 years. Note – in terms of temporal extent of potential impacts: As outlined above, the SPV will only be present in CG for one- to two-days very two weeks, or 52 days per year, or only 14% of the time per year. For 86% of the time there will be zero operational activity in CG.
	Decommissioning phase:	There is no decommissioning phase. Decommissioning of CG operations will be immediate when the SPV departs for the last time. Post-project environmental monitoring could continue.

* *Proponents should only provide realistic timeframes to avoid unnecessary change to proposal applications at referral (section 38C), assessment (section 43A) or post assessment (section 45C).*

FIGURES & TABLES:

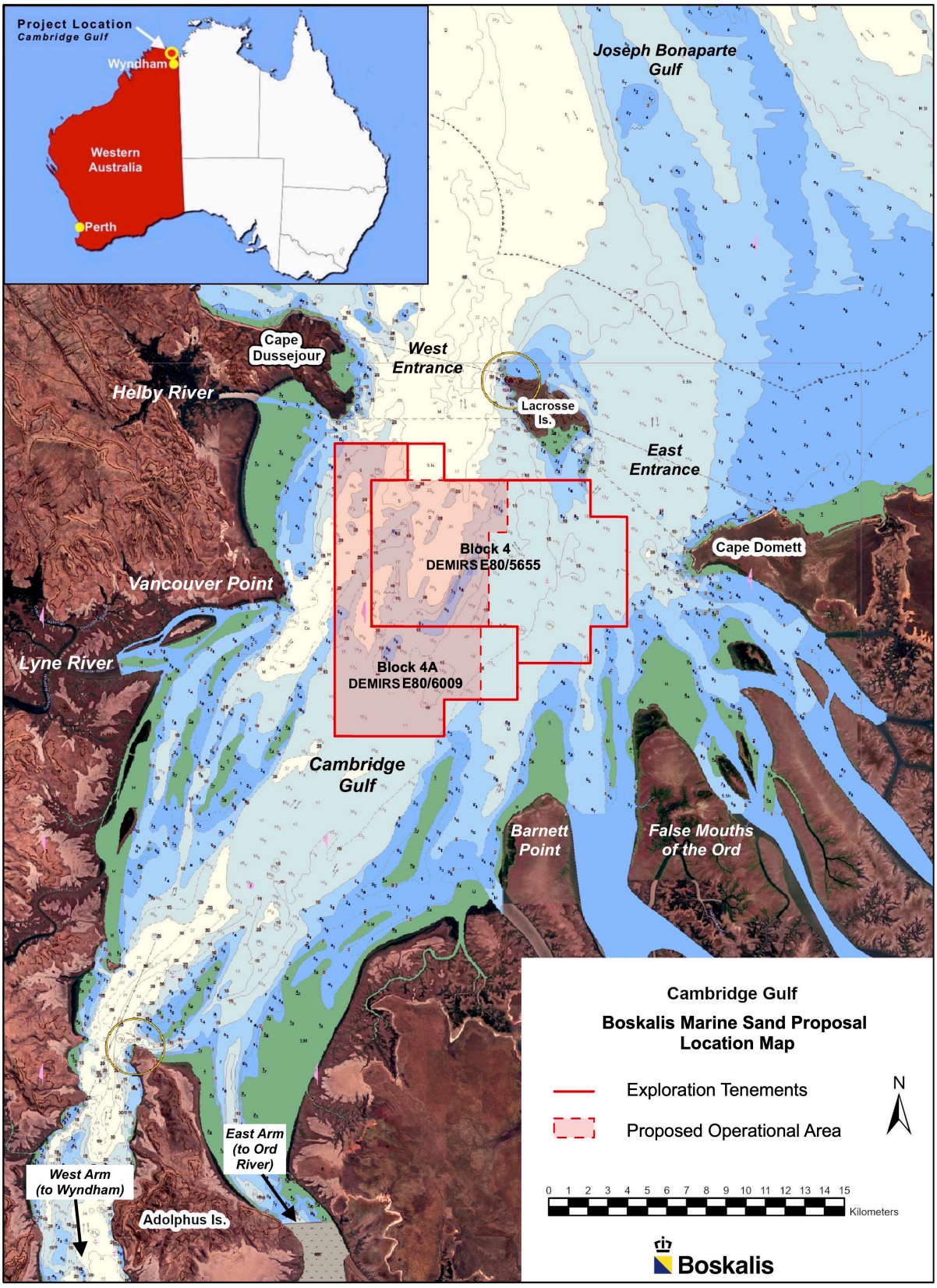

FIGURE 1: *Location of the proposal in Cambridge Gulf near Wyndham in the northeast of Western Australia.*

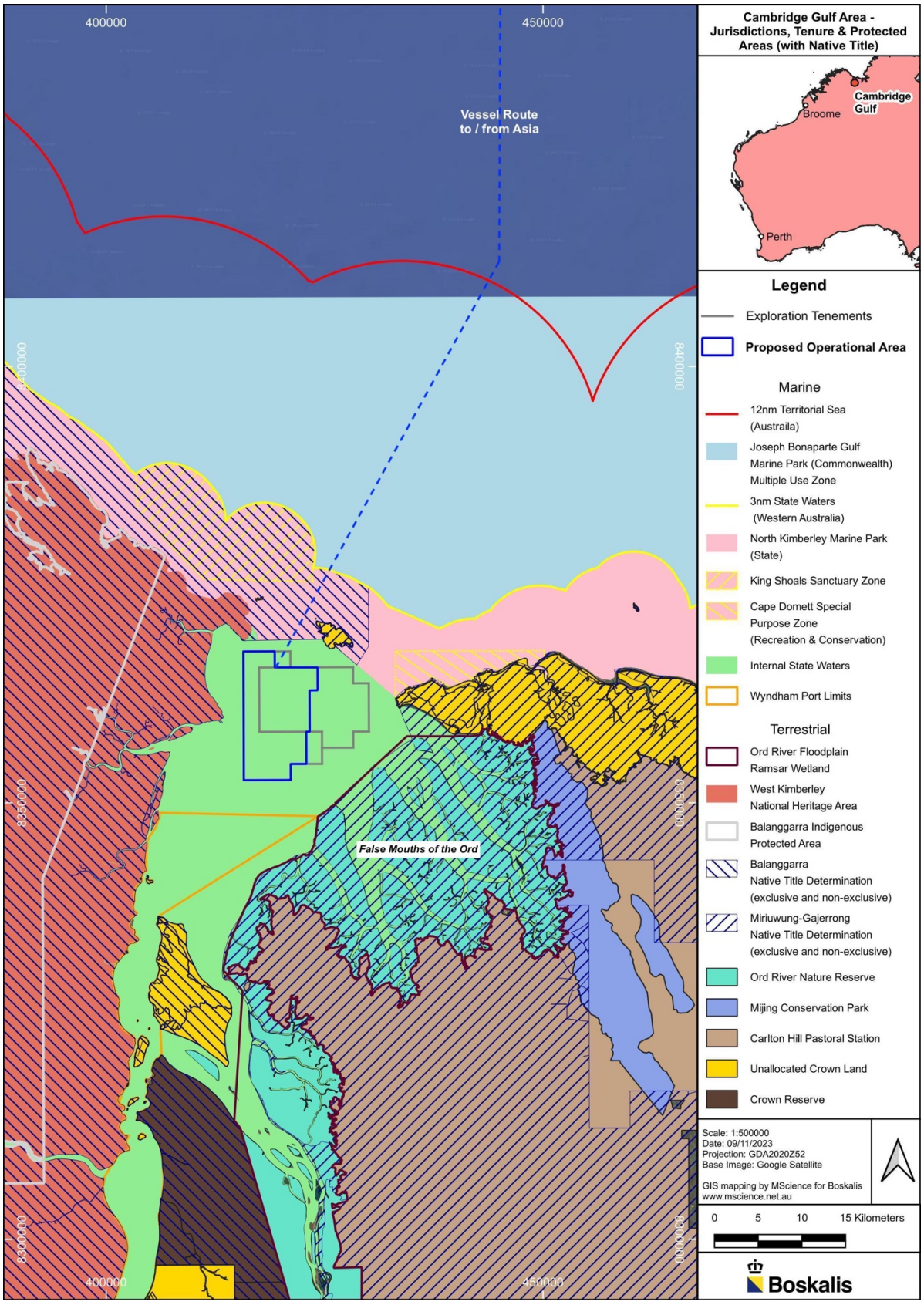

FIGURE 2: *Jurisdictions and tenure in the vicinity of the proposed operational area and the indicative route for the Sand Production Vessel (SPV) to/from Asia.*

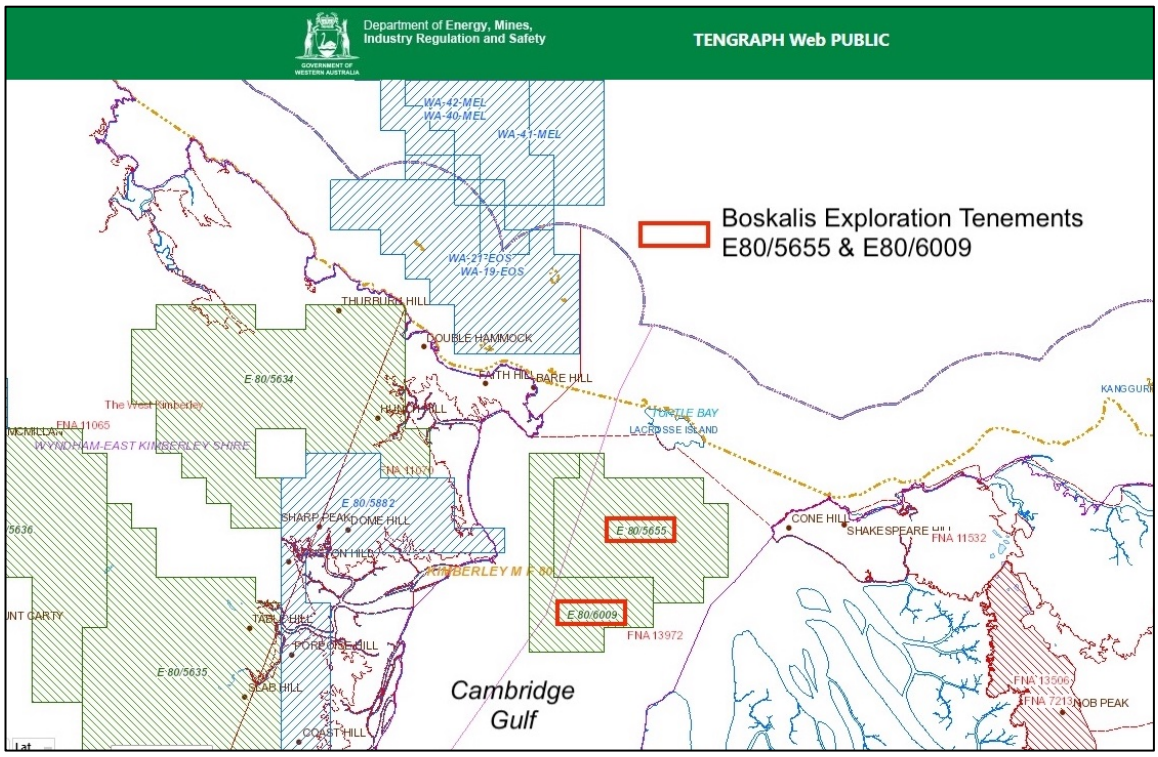

FIGURE 3: *DEMIRS Tengraph map of BKA's two exploration tenements in Cambridge Gulf.*

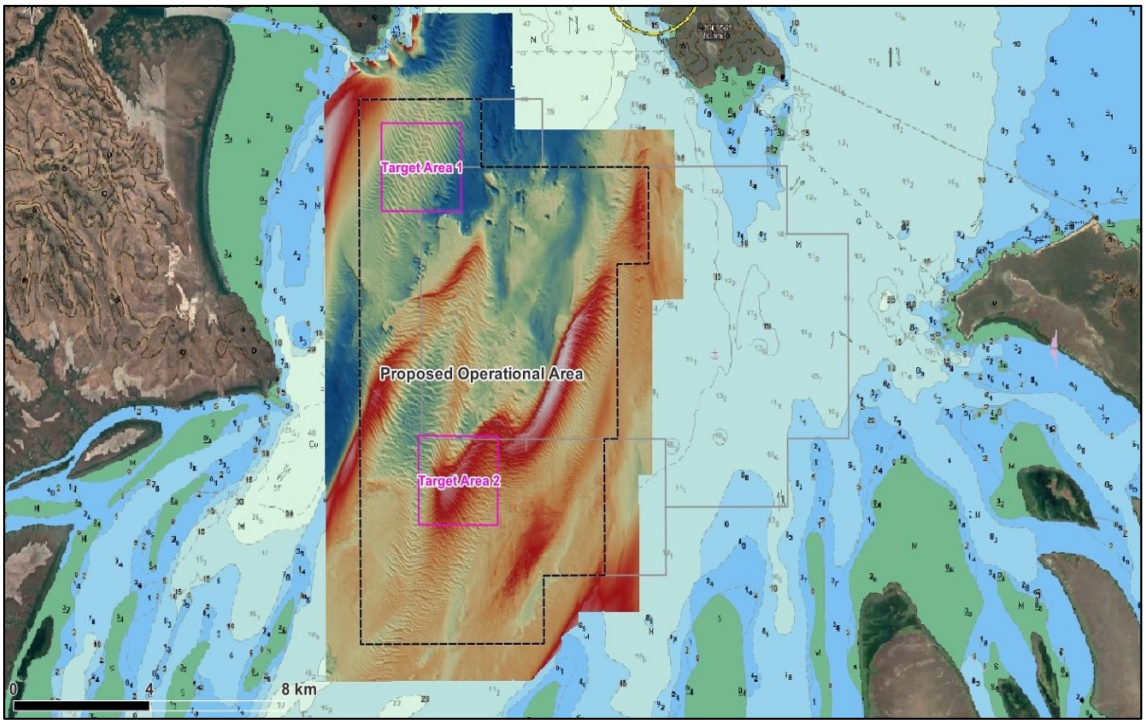

FIGURE 4: *High resolution Multi-beam Echo Sounder (MBES) survey of the POA area and 1 km buffer showing the seabed sand-forms in this area. Red indicates higher (shallower) bathymetry and thicker (deeper) bodies of sand. The two 'Target Areas' are where repeat MBES surveys were undertaken over a lunar tidal cycle in Feb-Mar 2024 to assess seabed sand-form dynamics, which showed they migrated horizontally by up to 10 m over 27 days.*

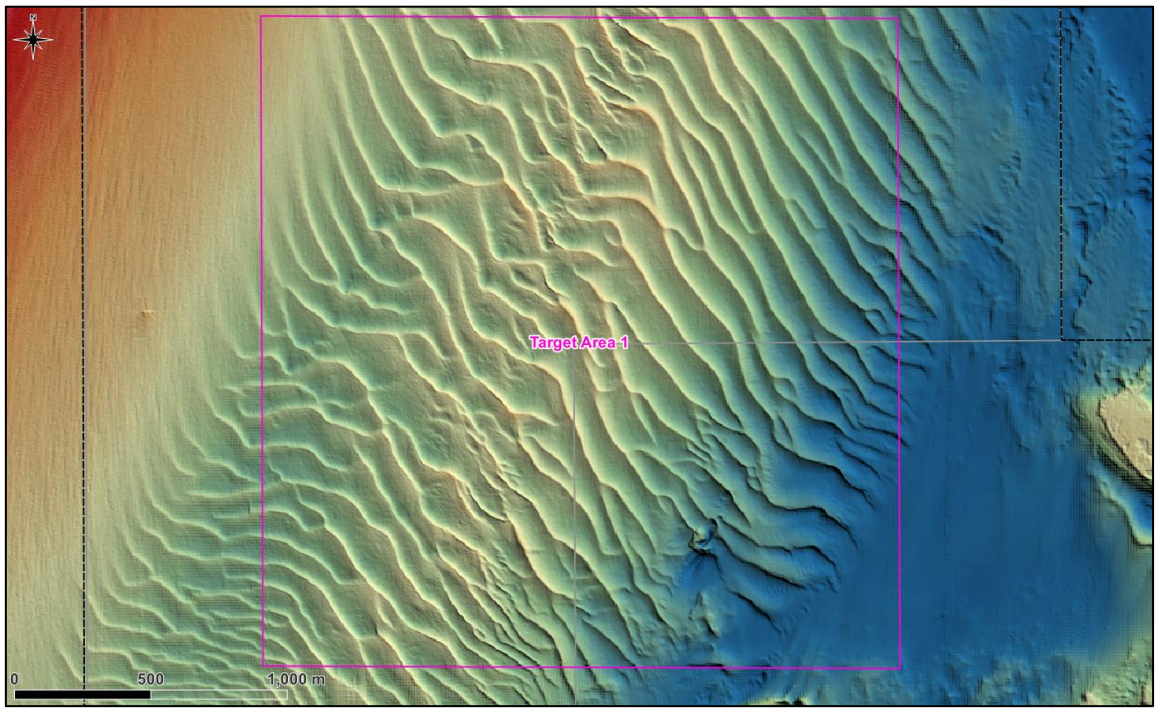

FIGURE 5: *Digital elevation model generated from the high-resolution MBES survey of Target Area 1 in the POA showing the seabed sand waves. The sand waves have vertical heights ranging from 1 to 8 m and horizontal wavelengths of between 50 and 200 m.*

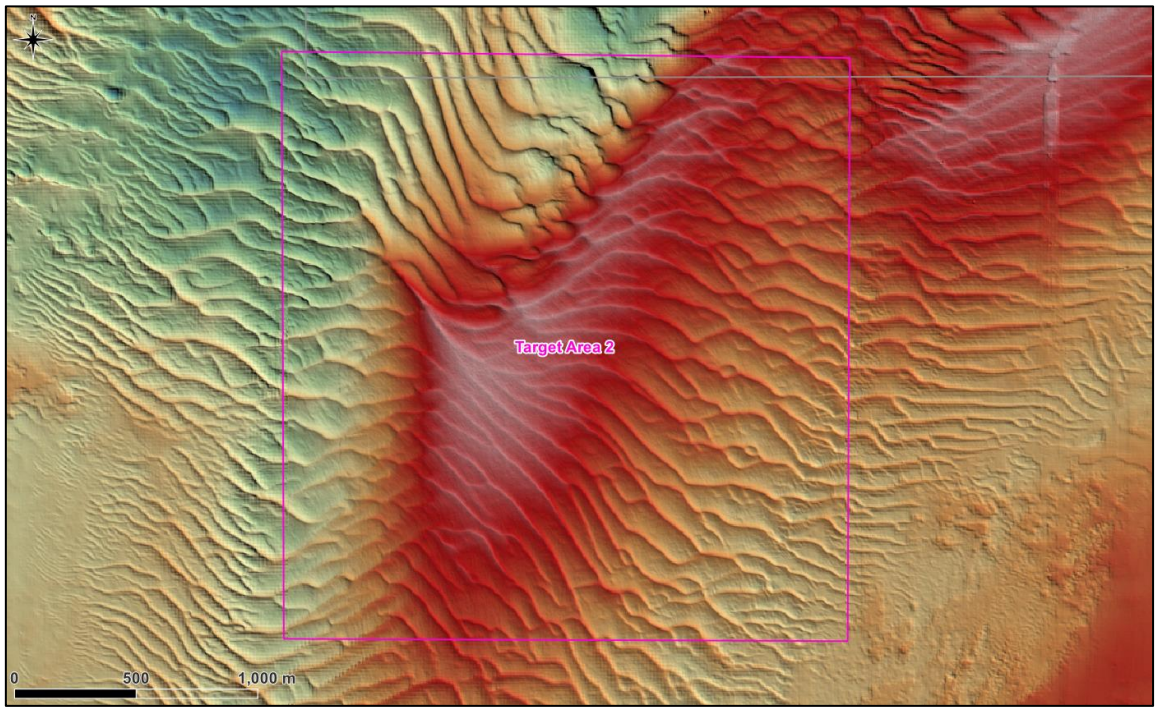

FIGURE 6: *As per Figure 4 but for Target Area 2. Red indicates higher (shallower) bathymetry and thicker (deeper) bodies of sand.*

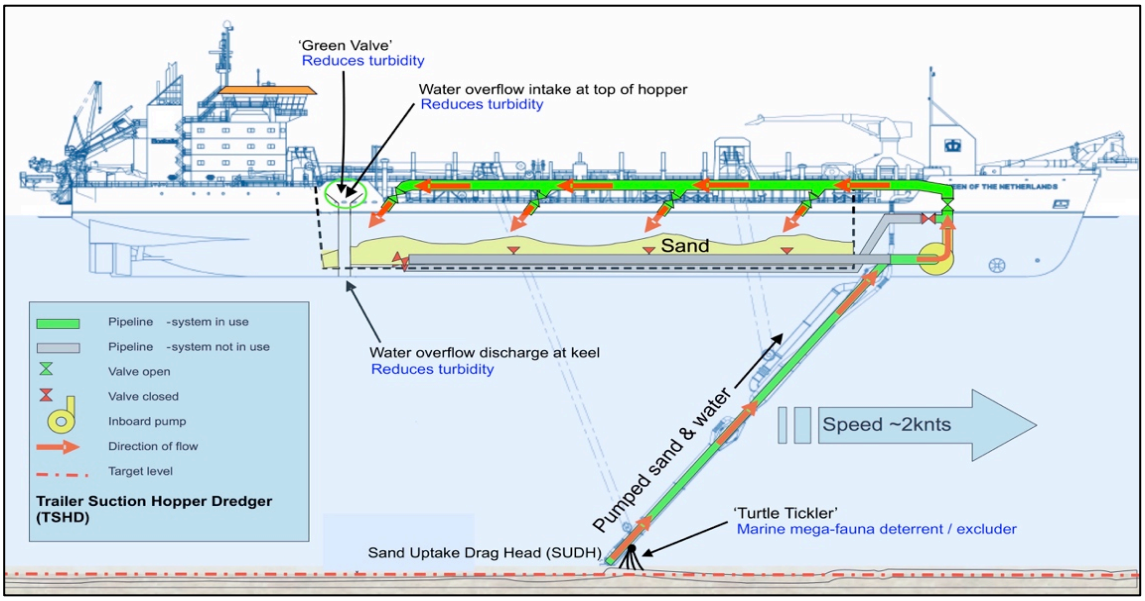

FIGURE 7: *The proposed operation will involve a single Sand Production Vessel (SPV) based generally on the design of a large Trailer Suction Hopper Dredger (TSHD), but designed and built specifically for the proposal.*

TABLE 1: *Key data relating to the scale and duration of the proposal.*

1. Cambridge Gulf total marine area (Lacrosse Is. to upper reaches of West & East Arms):	3,700 km^2
2. Cambridge Gulf main marine area (Lacrosse Is. to Adolphus Is.):	1,900 km^2
3. Proposed operational area (over approx. 15 years):	100 km^2 (5.3% of item 1) (2.8% of item 2)
4. Area of sand within proposed operational area:	75 km^2 (3.9% of item 1) (2.1% of item 2)
5. SPV length overall:	Up to 350 m
6. SPV draft:	Up to 20 m
7. SPV sand capacity:	Up to 125K m^3
8. SPV drag-head width:	6 m
9. Area of drag-head in contact with seabed during one loading cycle:	0.5 km^2 (0.5% of item 3)
10. Estimated sand volume in proposed operational area:	Minimum of 300M m^3
11. Sand volume to be exported (over 15 years):	Up to ~ 70M m^3 (23% of item 10)
12. Average depth of sand removal across operational area over 15 yrs:	< 1 m below current seabed
13. Operational life of the proposal:	Up to 15 years.
14: SPV sand-loading cycle in Cambridge Gulf:	1 to 2 days (24 to 48 hours) every 2 weeks
15. Voyage to / from Asian sand delivery port	10 to 14 days each cycle
16. No. of days / year SPV present in CG:	Up to 52 days (14% of time in a year)
17. Zero operational activity in CG:	86% of time each year / over project lifespan.

ANNEX: *Supporting WA EP Act Referral Reports – Boskalis Cambridge Gulf Marine Sand Proposal*

Documents submitted as part of this Referral package (August 2024):	
Short Title	**Full citation**
EPA Form: *Referral of a Proposal under s38 of EP Act.*	EPA Form (2024): Referral of a Proposal under s38 of EP Act - Boskalis Cambridge Gulf Marine Sand Proposal.
EPA Template: *Proposal Content Document.* [THIS DOCUMENT]	EPA Template (2024): Proposal Content Document - Boskalis Cambridge Gulf Marine Sand Proposal.
Referral Report No. 1: *Environmental Regulatory Framework.*	Boskalis Australia (BKA) (2024a), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 1: *Environmental Regulatory Framework.*
Referral Report No. 2: *Proposal Setting & Existing Environment Descriptions.*	Boskalis Australia (BKA) (2024b), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 2: *Proposal Setting & Existing Environment Descriptions.* Annexes include: – Sand resource assessment report - Boskalis. – BCH mapping methods statement - MScience – Coastal LiDAR report - Sensorem. – Sediment contamination assessment report. – eDNA report - University of Canberra. – Turtle nesting report - EcoStrategic / DBCA.
Referral Report No. 3: *Traditional Owner Matters.*	Boskalis Australia (BKA) (2024c), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 3: *Traditional Owners, Native Title & Aboriginal Cultural Heritage*. Annexes include: – Letters of support from the two TO groups.
Referral Report No. 4: *Impact Assessments.*	Boskalis Australia (BKA) (2024d), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 *Referral Report No. 4: Impact Assessments of Key Environmental Factors.*
Referral Report No. 5: *Metcocean & Sediment Dynamics.*	Port & Coastal Solutions (PCS) (2024a), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 5: *Metcocean & Sediment Dynamics - System Understanding, Conceptual Model & Initial Modelling.* – Annex 1: PCS (2024b) Supplementary Technical Note. – Annex 2: PCS (2024c) Factual Data Report.
Referral Report No. 6: *Consultation Report.*	Boskalis Australia (BKA) (2024e), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 6: *Stakeholder Engagement & Consultation Report.*
Referral Report No. 7: *Commonwealth Matters.*	Boskalis Australia (BKA) (2024f), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 7: *Commonwealth Protected Matters.*
Documents still being developed (to be submitted later).	
Referral Report No. 8: *Metcocean & Sediment Dynamics Full Modelling.*	Port & Coastal Solutions (PCS) (2024d), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 8: *Hydrodynamic, Coastal Processes & Sediment Plume Modelling.*
Referral Report No. 9: *IMSA Package.*	Boskalis Australia (BKA) (2024g), Cambridge Gulf Marine Sand Proposal - WA EP Act s38 Referral Report No. 9: *IMSA Metadata Package Statement.*