

# Proposed Crib Point Gas Import Jetty & Pipeline Project

The following are responses to the questions raised by community members during Mornington Peninsula Shire's online community information session held on 19 August 2020.

In the interests of providing information to the community, Council has sought responses from AGL and APA Group (the project proponents) for questions regarding details of the proposed project and its associated potential impacts.

Please note, the views of these organisations have not been verified by Council, nor do they necessarily reflect the views of Council.

## Questions & Answers

***Does AGL have any plans for a gas fired power station in Tyabb or anywhere else on the Peninsula? And is a gas fired power station part of this project?***

AGL response:

In the Environment Effects Statement for the Gas Import Jetty Project, the Design Basis Manual references that a power station is expected to be located near Tyabb. A flanged take off was discussed in the early works with APA, to supply gas for domestic consumers or for a potential future power station.

However, the takeoff flange has not been included in the final design of the pipeline.

To confirm, AGL does not have any plans to build a power station. It is not part of this project in any way or being considered as an option.

***Does the project include any 'flaring towers' at the Crib Point Receiving Facility, Floating Storage Regasification Unit (FSRU), Jetty, pipeline works or any other part of the project?***

AGL response:

There will be no flaring towers in this project. Flaring towers are not required as the Project design includes the use of vent stacks for emergency situations. The detailed design of the vent stacks has not yet been completed but the stack heights would be less than 20m.

The EES, [Chapter 4 – Project Description](#) states in s.4.3.3, p.22:

*The Crib Point Receiving Facility's manually operated vent stack would service the facility as well as the jetty piping in the event of emergency situations and for maintenance. A separate vent would be required for venting of boil-off nitrogen as from the nitrogen storage tank to prevent overpressure of the tank.*

Design and controls to prevent emergency situations are described in the EES, [Chapter 16 - Safety, hazard and risk](#) and the EES, [Technical Report K: Safety, hazard and risk assessments](#).

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***The Marine Impact Assessment notes that the FSRU will produce 25 tonnes a month of toxic oily sludge / waste. How will this be disposed? Where will it be trucked to and how?***

AGL response:

Operation of the FSRU would generate wastes including sludge from various activities. It is expected that up to 25 tonnes of sludge would be generated per month from marine diesel oil and lube oil purifiers, as well as oil residue from drain, drip trays, oil separators and sludge units from ongoing operation of the FSRU.

The EES, [Chapter 6 – Marine Biodiversity](#) discusses the disposal of marine sludge in s.6.6.5, p.110 and states:

*This sludge and waste oil would be collected by a licensed contractor and disposed of at a licensed facility for treatment and reuse/disposal.*

*Waste management procedures would be developed and implemented for the operation of the FSRU to appropriately manage sludge. Sludge and other forms of waste generated by the FSRU would be managed in accordance with Environment Protection (Industrial Waste Resource) Regulations 2009 (see mitigation measure MM-C10 in Chapter 10 Contamination and acid sulfate soils). The risk of sludge and other waste streams impacting on the Ramsar site is considered low.*

***What alternative sites (to Crib Point) has AGL considered for this project? Why did it choose Crib Point?***

AGL response:

Crib Point Jetty (Victoria) was selected as the location for the gas import jetty. Victoria is the largest gas market by volume consumed in south-eastern Australia.

Eight sites were initially evaluated by AGL as potential locations to import LNG into south-eastern Australia, including Port of Newcastle, Port Botany and Port Kembla (New South Wales), Corio Quay Precinct, Port of Melbourne and Crib Point (Victoria), Port Adelaide (South Australia) and Bell Bay (Tasmania).

Initial screening criteria for the eight potential sites included:

- proximity to hazards, possible ignition sources and other safety considerations
- proximity to occupied buildings and consideration of nearby activities
- exclusive access to a berth capable of accommodating vessels with overall length up to 300 metres
- a deep-water swing basin/ship turning basin of 600 metres in diameter
- a deep-water approach channel of suitable width to accommodate double berthed vessels
- a berth of at least 13 metres deep at lowest astronomical tide
- separation from the shipping channel such that surge from passing ships does not impact the safe operations of side by side berthing of an FSRU and LNG carrier during unloading

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- existing mooring dolphins (marine structures), or ability to upgrade a berth, to accommodate the parallel length and deadweight tonnage (how much weight a ship can carry) of the FSRU.

The initial screening assessment resulted in the identification of three shortlisted options being Port Adelaide (South Australia), Port Kembla (New South Wales), and Crib Point (Victoria) that were subsequently considered in further detail.

A summary of the evaluation of the three shortlisted options is provided in Table 2-3 in the Project Rationale – Chapter 2.

Crib Point Jetty is an existing operational industrial jetty within Western Port that has been undertaking petroleum related activities for more than 50 years. Crib Point provides:

- An existing jetty with berth capacity and of a suitable size to accommodate the FSRU. At the time of initial screening, Western Port was receiving 167 ship calls annually, over 100 of which were oil and gas tankers.
- A deep-water shipping channel with a wide stretch of water between the Crib Point Jetty on the mainland and French Island (also known as the swing basin). These factors provide additional safety for vessels in an emergency.
- A naturally deep-water port within a sheltered bay (Western Port), with a maintained berth depth of approximately 13 metres at the lowest tide level, with an additional three metres during high tides.
- No capital dredging would be required for the Gas Import Jetty Works.
- An existing, dedicated berth (Berth 2) that is not currently being used.
- The capacity to double-berth an LNG carrier, around 300 metres in length, alongside the FSRU.
- A sheltered berthing location allowing safe ship-to-ship transfer when double berthed during changing wave conditions. The Crib Point Jetty has been previously used for ship-to-ship transfers of crude oil.
- An existing operational industrial marine facility, providing for the further development of maritime industry activities.
- Land use zoning provisions appropriate to the use of the jetty and adjacent landside area that has been reserved via planning schemes for port and related uses under the Mornington Peninsula Planning Scheme, providing ample safety buffers.
- Proximity to AGL's largest gas demand centre, Victoria, of which greater than 70 per cent of peak gas day demand is within the Melbourne metropolitan area.
- Use of existing gas transmissions networks without major pipeline modifications to supply the south-eastern gas markets.

Victoria was selected as the location for the Project because it has the largest gas market by volume consumed in south-eastern Australia.

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The gas import jetty would be located at the existing Crib Point Jetty within the Port of Hastings. The port is a commercial port within Western Port with an existing deep-water channel and berth developed to support international trade.

The Port of Hastings serves international shipping operations, with an average of 190 vessels a year for the past 20 years. Products imported and exported through the port include crude oil, ethanol, liquefied petroleum gas (LPG) and steel.

Industrial activities have occurred in the vicinity of the Crib Point Jetty for more than 50 years. The jetty is currently operating as a working industrial site with two berths for mooring vessels. Berth 1 is used by United Petroleum to transfer liquid fuel to its onshore storage facility located near Hastings. Berth 2 is currently decommissioned.

The Project proposed at Crib Point Jetty is compatible with the development and use of the port in the Port Zone (PZ) under the Mornington Peninsula Planning Scheme and State Planning Policy Framework. The jetty provides a large deep-water shipping port and a wide swing basin to enable the safe passage of vessels as well as exclusive access to a berth capable of accommodating vessels measuring up to 300 metres long, with separation from adjacent berths.

The Project location has been optimised to best benefit Victoria by minimising the distance that gas needs to be transported, reducing the cost of gas to market customers.

Locating the Project on the eastern side of Melbourne was considered optimal as it provides access to the Longford-to-Melbourne pipeline, which is the main gas transmission pipeline supplying Melbourne. The Project would help offset the decline in domestic production that has historically filled this pipeline and avoid bottlenecks on the smaller pipelines to the west of Melbourne, while facilitating diversion of gas supply towards the Eastern Gas Pipeline to supply gas to New South Wales.

Port locations in Victoria, South Australia and New South Wales were also investigated but lacked the required depth or infrastructure to accommodate a continuously moored FSRU. (2.5.3).

## ***Why hasn't Council's submission addressed the illegal removal of native vegetation from the site of the proposed Crib Point Receiving Facility?***

### Council response:

The removal of vegetation from this site without a planning permit is not part of Council's submission to the project's EES as this matter is subject to a separate enforcement investigation currently being undertaken by Council.

DELWP has confirmed that the EES and related assessment is to proceed as though the vegetation still exists on the site. As such, in the

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event the project is approved, any future offsets would need to take into account the vegetation that has now been removed from the land.

***Does Council have legal representation for the hearing and what specialist areas of expertise has Council commissioned to assist?***

Council response: Council is being represented in this matter by legal counsel including Harwood Andrews and barrister Rupert Watters.

Throughout the EES process, Council has engaged the services of a range of experts to consider and provide advice, including in relation to:

- Greenhouse Gas Emissions and climate change
- Terrestrial and marine ecology
- Ground water
- Economic and social impacts
- Traffic and transport
- Amenity impacts (including noise)

Selection of experts to provide evidence at the Crib Point Inquiry & Advisory Committee (IAC) public hearing will be determined closer to the hearing on the advice of Council's legal representatives.

***Has Council worked with the City of Casey, Cardinia Shire Council or Bass Coast Shire in responding to the project?***

Council response: Yes, Council has discussed the project with each of these Councils in formulating its response. Whilst each Council has determined its own position on the project independently, Mornington Peninsula Shire continues to explore options to share resources for the upcoming IAC hearing with those Councils that have reached an allied position.

***Woolleys Beach is currently used by locals for recreation and schools in environmental programs, in the EES the AGL Corporation want to take over this beach. Can't Council protect Woolley Beach as a mutual benefit site for education and biodiversity?***

Council response: In response to community concern about access to Woolleys Beach, Council's submission includes the following statement:

*Council is particularly concerned about the impact of the Project (construction and operation) on community use and enjoyment of Woolleys Beach and the inadequacy of the relevant identified mitigation measures in the EES.*

Council will pursue the matter further at the IAC public hearing.

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***If there are 20-40 LNG ships pa that will use the AGL facility, how does this compare with the number of oil and LPG ships that use the Exxon LIP facility each year?***

AGL response:

Chapter 4, Project description Section 4.3 page 6 states that the FSRU would receive LNG from ships known as LNG carriers. LNG carriers are vessels of a similar size and design as the FSRU. The FSRU would initially receive approximately 45 petajoules (PJ) of LNG per annum (approximately 12 LNG carriers). The amount of LNG could increase to 160 PJ per annum (approximately 40 LNG carriers) depending on demand. The number of LNG carriers would also depend on their storage capacity, which could vary from 140,000 to 170,000 m<sup>3</sup>.

The jetty at Long Island Point is a major loading facility for LPG and crude oil. It sees around 50 vessels a year from around Australia and the world.

The EES, Chapter 6 Marine Biodiversity s.6.3.13 also includes an overview of the current port operations within Western Port:

*The Port of Hastings is one of the four major commercial ports within Victoria. Port of Hastings is managed by the Port of Hastings Development Authority (PoHDA) established in 2004 (Port of Hastings Corporation, 2009).*

*In the 1960s the land around Hastings was reserved for port-related uses. The bay's naturally deep channels and close range to oil and gas fields means the port has played an important role in the energy sector. As the port was identified to be a potential area for larger-scale industrial processes in the 1970s, large areas were put aside and preserved to allow for future use.*

*HMAS Cerberus is located south of the Port of Hastings. HMAS Cerberus is used as a naval base primarily for training purposes. There are five jetties around the Port of Hastings which include the naval wharf at HMAS Cerberus, Stony Point Jetty, Crib Point Jetty, Long Island Point Jetty and BlueScope Steel Wharves.*

*There are approximately 150 commercial shipping movements per year along the main, 32-kilometre long shipping channel to loading and unloading facilities in North Arm at Stony Point, Crib Point, Long Island Point and the BlueScope Steel Wharves. Each year, the port is used by over 100 cargo ships, over 12,000 ferry trips (between Stony Point to French Island and Phillip Island), several cruise ships and numerous recreational vessels.*

***The residents of Coolart Road and Woolley Road Bittern will be subjected to up to 900 B-double trucks on their roads per year. Why has AGL made no direct public engagement, community consultation or contact via post or leaflet drop to alert residents and key stakeholders about this major disruption to their lives?***

AGL response:

Since the Project inception, AGL and APA have aimed to generate awareness and to engage with communities and stakeholders by

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informing, listening and acknowledging their concerns. As early as June 2017, AGL and APA asked for feedback on early concept designs for the Project.

As part of the EES Exhibition 15,560 EES Exhibition fliers were sent to residents in Balnarring, Bittern, Crib Point, Hastings, Pearcedale, Sommerville, Somers, and Tyabb. Flyers were also sent out to the same areas in August/September 2019 informing residents that the EES was in development and making them aware of the community drop-in sessions.

There have been 10 public community drop-in sessions with approximately 270 attendees, held at locations including Crib Point, Hastings, Balnarring, Blind Bight, Cowes, Cardinia, and Nar Nar Goon with both supporters and those who oppose the project.

Engagement and consultation activities and the feedback captured during preparation of the Environment Effects Statement is described in Chapter 26 of the EES Main Report.

Stakeholder consultation on transport changes is a proposed mitigation measure, described in Technical Report J: Traffic Impact Assessment. Mitigation measure TP03 pg 89 states:

*Prior to commencement of the construction works and any temporary road closures, stakeholder consultation should be carried out and advanced notice given to affected residents, businesses or industries. This includes measures such as letter notification to inform residents and businesses of upcoming works and road closures. Stakeholder engagement and communications strategies should be established in the TMP and the Stakeholder Engagement Management Plan (SEMP) to be prepared for the Project. Stakeholders may include Councils, road authorities, business operators and residents among others.*

*During operation, regular meetings should occur with Mornington Peninsula Shire and an agreement should be reached with the Council to confirm pavement upgrades of impacted local roads around Crib Point, subject to the pavement strength survey results.*

An estimated maximum of 900 trucks per year would be required to provide the liquid nitrogen for the preparation of a rich LNG shipment. However, like most of the studies in the EES, this is based on a worst-case scenario and for the purposes of an impact assessment.

Nitrogen deliveries would occur at frequent intervals throughout the year to the Crib Point Receiving Facility. During these periods, it is anticipated that up to five truck deliveries would occur daily (10 two-way movements) with the potential for two trucks to be located at the facility at one time.

There will also be odorant trucks, as explained in the EES, Chapter 15 – Transport, s.15.8.1:

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*Odorant deliveries originating from inner Melbourne would depend on the volume of gas vaporised by the FSRU and is not expected to be more frequent than every two months.*

The total anticipated vehicle movements for the Project's operating phase are summarised in the EES, Chapter 15 – Transport, Table 15-8. However, s15.8.1, p. 19 states:

*The number of movements is conservative as operational traffic is not expected to be travelling to and from the FSRU and/or the Crib Point Receiving Facility daily, but instead on intermittently, primarily to restock nitrogen and odorant and by the operational workforce.*

## **What will happen to the mangroves north of Crib Point?**

### AGL response:

The extent of combined seawater discharge impacts were explored the EES, Chapter 6 – Marine Biodiversity, s.6.6.4 P121 outlined:

*The worst-case predicted combined area above the chlorine and temperature Guideline Values would be localised to the Port of Hastings area around the Crib Point Jetty. There are no predicted effects on the shallow edges of North Arm, all seagrass and mangrove areas, all the northern area of Western Port and all areas used by wading birds.*

*In summary, in the worst-case scenario, the area of potential impact for residual chlorine and seawater temperature change extends over 20 hectares around the proposed FSRU location. Mangroves, saltmarsh, seagrasses, subtidal reefs and waterbirds (including wading birds) would not be impacted by the seawater discharge associated with the seawater usage of the FSRU.*

The nearest saltmarsh and mangrove habitat to the proposed FSRU and jetty facilities are to the north and south of Crib Point. The wave and current exposure at Crib Point is too high for the establishment of saltmarsh and mangroves. Saltmarsh and mangrove habitat occur near the HMAS Otama Lookout approximately one kilometres west–north-west from the proposed FSRU and to the south of Woolley's Beach around one kilometre west–south-west FSRU, as shown in Figure 6-28 of Chapter 6 and will not be disturbed as part of the construction or operation of the project.

Seawater taken into the FSRU for all purposes passes through an electrolysis cell that converts the dissolved chloride (Cl<sup>-</sup>) naturally present in seawater to chlorine gas (Cl<sub>2</sub>) which reacts rapidly in seawater to produce a range of oxidants known as chlorine produced oxidants (CPO).

The quantity of chlorine or CPO discharged is estimated to be 47 kg/d at peak open production, 32 kg/d at average open loop production and

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19 kg/d with closed loop production. On the days when there is an LNG carrier unloading LNG to the FSRU, there is an extra discharge of 0.6 kg/d from the fire management system and about 1 kg/d from the ballast water system (during an unloading period of approximately 36 hours up to 40 times per year).

A key outcome from the modelling and assessment of chlorine and seawater temperature risks for the marine environment is the extent of the predicted area above the chlorine Guideline Value and temperature Guideline Value. These comprise the area where exceedance of the combined Guideline Value for temperature and chlorine is predicted.

The 'worst-case' modelled scenario for temperature and chlorine is when the FSRU is operating in open loop at peak regasification (that is, all three regasification trains are operating with the largest seawater discharge rate) and an LNG carrier is berthed adjacent to the FSRU. The LNG carrier when berthed adjacent partially obstructs the discharge ports on the starboard side of the FSRU, decreasing the efficiency of mixing.

For all modelled scenarios, the predicted extent of the combined area above the temperature Guideline Value and the area above the chlorine Guideline Value is limited to the shipping basin and ship berthing areas within the Port of Hastings boundaries. This comprises seabed that has been previously dredged and is regularly subject to sediment resuspension by propeller wash from existing shipping activities at Crib Point Jetty.

## ***How can AGL offset decline in marine and terrestrial fauna?***

### AGL response:

The Project and proposed mitigation measures have been developed to avoid and minimise potential impacts on the marine environment and the terrestrial and freshwater environment, particularly in relation to flora, fauna and their habitats which are protected under State and Commonwealth legislation.

The consideration of environmental protection and biodiversity conservation is fundamental to the EES scope. Underpinning the EES is a body of work characterising the existing environment and identifying environmental sensitivities. This is then used to consider the potential Project impacts and to inform decision making processes about Project approval, design, construction and operation. Design changes were made to avoid potential adverse effects on biodiversity based on expert advice and stakeholder engagement. Mitigation measures were developed to avoid and minimise the potential impacts of the Project on the environment.

Chapter 6 Marine biodiversity and Chapter 7 Terrestrial and freshwater biodiversity demonstrate how this principle was put into practice. Section 24.7 of the Sustainability chapter summarises how the project aligns with ecologically sustainable development objectives with

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respect to marine, terrestrial and freshwater biodiversity. (Table 24-5 Summary of the Project's alignment with the relevant ESD principles).

## **What has AGL done to address bushfire risk for this project?**

AGL response: The potential for bushfires is taken very seriously. Many parts of the Mornington Peninsula are designated as bushfire prone areas under the State Bushfire Management Overlay (BMO), including the area around the current Crib Point Jetty.

BMO provisions require that development in areas affected by a significant bushfire hazard will only take place after full consideration of bushfire issues. If risk to life and property from bushfire cannot be reduced to an acceptable level the development will not proceed.

Technical Report technical Report K: Safety, Hazards and Risk Assessments considers bushfire risk in relation to the Gas Import Jetty Works in Section 7.5 pg 58.

The Jetty Infrastructure and the Crib Point Receiving Facility works are located on cleared land, but some vegetation is present in surrounding areas. In particular, there are areas of Crown land managed by the State Government, which is responsible for its management, including managing bushfire risk. The safety case for the Jetty Infrastructure and the Crib Point Receiving Facility would include bushfire mitigation strategies. The FSRU and LNG Carriers will be provided with their own onboard fire protection and suppression systems. Mitigation measure MM-HR04, and section 7.5.4 in Technical Report K: Safety, Hazard and Risk Assessments, provides information on fire protection and suppression at the Gas Import Jetty Works.

In addition, the Incorporated Document that is to be applied to the Gas Import Jetty Works under the proposed Planning Scheme Amendment requires a Bushfire Management Plan be prepared prior to the commencement of use and development of the Project (excluding some preparatory buildings and works).

Chapter 16: Safety, Hazard and Risk Section 16.1.2 outlines the pipeline works safety regulations:

*The Pipelines Act requires licensed pipelines to be constructed and operated safely in accordance with Australian Standard 2885: Pipelines – Gas and liquid petroleum. The pipeline licensee is required to implement a range of safety measures to reduce foreseeable risks associated with operating a pipeline and to minimise, as far as is reasonably practicable, hazards and risks to the safety of the public.*

Section 8.5 p. 75 of the Technical Report K: Safety, Hazards and Risk Assessments outlines the requirement for a Safety Management Plan (SMP) for the Pipeline Works. A Safety Management Plan (SMP) for the pipeline has been prepared in accordance with the Pipelines Act 2005 and Regulations. This plan is on display with the Pipeline Licence

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Application. Fire Prevention and Control for the Pipeline Works is addressed in Section 10.3.

## **How will AGL's trucks get from Coolart Road to Woolleys Road?**

### AGL response:

Chapter 15: Transport and Technical Report J: Transport Impact Assessment, consider the potential traffic impacts of the Project's operation, including traffic volumes, intersection capacity and possible routes.

The most direct truck route identified for B-double truck movements is via the Mornington Peninsula Freeway and Frankston–Flinders Road. However, two alternative routes were investigated - via Coolart Road; and via Western Port Highway/Dandenong–Hastings Road and Coolart Road. These routes are shown in Figure 15-3 of Chapter 15.

In the EES, Technical Report J: Transport Impact Assessment, the most direct truck route via the Mornington Peninsula Freeway and Frankston–Flinders Road, along with the two alternative routes identified (via Coolart Road and via Western Port Highway/Dandenong–Hastings Road and Coolart Road) are shown in Figure 13.

Assessing these alternate routes identified in s15.8.4, p.20:

*Both routes minimise potential social, economic and amenity impacts by avoiding Hastings and Somerville. Both routes are also approved for B-doubles and would provide additional benefits relative to the Frankston–Flinders Road route:*

- *reducing social impacts by avoiding Hastings and Somerville*
- *reducing traffic delays by avoiding industrial and activity centres (Hastings and Somerville)*
- *minimising impact on public and school bus routes*
- *reducing cyclist and pedestrian crash risk by avoiding areas of activity*
- *reducing vehicular crash risk by avoiding multiple black spots.*

*However, it should be noted that while the second alternative via Western Port Highway and Coolart Road provides comparable benefits, there are a number of roundabouts along its length that could result in increased delays and risks. Comparatively, the first alternative via only Coolart Road accommodates less traffic and is therefore safer while decreasing potential delays.*

The EES, Chapter 15, s. 15.8.4 found:

*Nitrogen transportation is therefore recommended via Coolart Road away from the Hastings town centre to mitigate potential safety impacts.*

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This is addressed in further detail s15.11 under MM-TP07 and MM-TP01.

Once routes have been identified and confirmed as part of the Traffic Management Plan (TMP) (see mitigation measure MM TP01), a road safety audit would review intersection design and safety requirements on the existing road network and access tracks (see mitigation measure MM-TP04).

## ***What thought has AGL given to the impact of truck movements on our local roads and surrounding land uses?***

### AGL response:

The EES Chapter 15: Transport and Technical Report J: Transport impact assessment considered the potential transport impacts associated with the construction and operation of the Project, including identifying and understanding the potential transport impacts that have a risk of adversely affecting road users, the community and businesses.

During operations, nitrogen deliveries would occur at frequent intervals throughout the year to the Crib Point Receiving Facility. During these periods, it is anticipated that up to five truck deliveries would occur daily (10 two-way movements) with the potential for two trucks to be located at the facility at one time.

There will also be odorant trucks, as explained in the EES, Chapter 15 – Transport, s.15.8.1:

*Odorant deliveries originating from inner Melbourne would depend on the volume of gas vaporised by the FSRU and is not expected to be more frequent than every two months.*

As stated in the EES, Chapter 15 – Transport, s.15.8.4, the most direct truck route identified for B-double truck movements is via the Mornington Peninsula Freeway and Frankston–Flinders Road. This route is part of the B-Double gazetted network except for Woolleys Road and The Esplanade, the last three kilometres for which B-Double access would be subject to heavy vehicle access permits. However, alternative routes (via Coolart Road and via Western Port Highway/Dandenong-Hastings Road and Coolart Road) were investigated with consideration of the following:

- road hierarchy and identification of routes suitable for heavy vehicles
- routes where physical constraints and sensitive land uses were identified
- environmental and traffic factors to minimise social, economic, amenity and land use impacts particularly in denser urban areas such as Hastings and Somerville.

Based on the environmental criteria in the EES, Technical Report J: Transport Impact Assessment, s2.2, these alternate routes minimise

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potential adverse social, economic, amenity and land use effects by going around Hastings and Somerville instead of travelling through the townships.

In addition, Frankston-Flinders involves multiple black spots as shown in the crash analysis in the EES, Technical Report J: Transport Impact Assessment, s5.5 whereas the investigated alternate routes via Coolart Road, involve only one black spot. This can be observed in Figure 12, which shows the crashes in the last five years (2013-2017).

Both alternate routes are approved for B-Doubles and would provide additional benefits relative to the Frankston-Flinders Road route on the following:

- reduction of social impacts by avoiding Hastings and Somerville
- reduced traffic delays by avoiding industrial and activity centres (Hastings and Somerville)
- minimised impact on public and school bus routes
- reduced cyclist and pedestrian crash risk by avoiding areas of activity; and
- reduced vehicular crash risk by avoiding multiple black spots.

While the second alternate route via Western Port Highway / Dandenong-Hastings Road and Coolart Road can be used and provides comparable benefits, there are a number of roundabouts along its length used as safe traffic control treatments. Though these roundabouts are designed to accommodate large vehicles, the curved geometry can be very compact for truck drivers and can lead to increased delays and risks. In comparison with the Western Port Highway alternate route, the proposed alternate route via Coolart Road accommodates less traffic therefore safer while decreasing the risks of delays.

Once routes are identified and confirmed as part of the Traffic Management Plan, a Road Safety Audit would be undertaken to review intersection design and safety requirements on the existing road network and access tracks.

In addition, an assessment of the need for upgrading or improving the intersection identified as a black spot in Coolart Road / Hunts Road intersection would be carried out as part of the development of the Traffic Management Plan.

Signage improvements and speed reduction measures would be implemented at Hunts Road. Further information can be found in the EES, Technical Report J: Transport Impact Assessment.

Prior to construction, a Traffic Management Plan (TMP) will be prepared to minimise/mitigate potential impacts of transport related to construction.

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As stated in the EES, Chapter 15 – Transport, s.15.11:

*The TMP will include specific measures for discrete components or stages of the works having the potential to impact on roads, shared use paths, bicycle paths, footpaths or public transport infrastructure. The TMP will include a number of sub-plans including:*

- *Public Transport Disruption Management sub-plan*
- *Pedestrian and cyclist connectivity*

This also includes, as stated in the EES, Chapter 15 – Transport, s.15.7.7:

*... providing adequate notice to affected residents and ensuring continuous alternative detour routes are in place.*