



# Kariong Sand and Soil Supplies

Presentation to Independent Planning Commission

Applicant Meeting

1<sup>st</sup> November 2021



# Overview of presentation

- Introduction to the applicant's expert team
- Applicant's expert team response to the following key matters:
  - Volume management
  - Operational noise impacts
  - Air quality
  - Operational traffic and access
  - Stormwater management
  - Contamination
  - Visual impacts
  - Recommended conditions of consent
- Any final Q&As







# Volume management

## (a) Staging of construction and demolition waste limits

- Applicant has volunteered a staged increase in throughput of recycling operations with progression through the stages dependent on validation of the facility's environmental performance as follows (see Condition A7 and A8):
  - Stage 1: 0-100,000 tonnes per annum
  - Stage 2: 150,000 tonnes per annum
  - Stage 3: 200,000 tonnes per annum (limit of operations)
- This is to provide the community and agencies with confidence that the facility is operating within predictions of the EIS
- Opportunity to review performance and increase controls (if required)
- Construction and demolition waste quantities will be tracked (as per Condition B63) by:
  - All waste loads received at the site to be weighed and recorded over the weighbridge
  - All products leaving the site and residual waste sent off site to be weighed over the weighbridge
  - Regulatory requirement under Clause 36 of the *Protection of the Environment Operations (Waste) Regulation 2014*



# Volume management

## (a) Staging of construction and demolition waste limits (continued)

- A condition of EPA licence once site is operational is monthly reporting of waste in, waste/product out and stock held on site
- This data is reported to EPA through the Waste and Resource Reporting Portal (WARRP)
- This enables EPA to conduct the following regulatory functions:
  - Track compliance with annual waste receival limits
  - Track compliance with maximum stock (waste and product) that can be held on site at any one point in time (referred to as the 'Authorised Amount')
- Waste tracking system managed through the weighbridge office and weighbridge software
- Allows instantaneous reporting of waste receipts on a daily, weekly, monthly and annual basis
- If site reaches annual limits earlier than expected (less than 12 months), site will **cease accepting waste** in accordance with EPA licence requirements
- Procedures for waste tracking and reporting will be documented in the Waste Monitoring Program as per Condition B63





# Volume management

## (a) Project volume limits

- EIS and impact assessment has assumed site will receive a maximum of 200,000 tonnes per annum of waste materials (see Condition A6) plus 10,000 tonnes per annum of landscape materials for re-sale (Condition A10)
- Site cannot exceed this limit
- Tracking of limits through weighbridge software
- Monthly reporting to EPA enables regulatory monitoring of waste receipt
- Maximum of 40,000 tonnes to be stored on site at any one point in time (Condition A9)
- Waste Management Plan prepared as part of the EIS has modelled waste inputs and expected outputs based on projected operations and industry experience
- Scale up in operations to 200,000 tonnes expected over approx. 6 years (depending on market conditions)
- Procedures for waste tracking and reporting will be documented in the Waste Monitoring Program as per Condition B63





# Operational Noise Impacts

## (a) Changes made to the Project to address community concerns

- Additional 3m high concrete noise barriers around sides of the mulcher operation (as part of the construction of the storage bays)
- Placement of the mulcher inside a heavy duty fully closed building with 35 dB rated sound insulation lining for enhanced noise control
- Placement of concrete crusher behind noise wall of the mulching operation
- Concrete crusher plant placed inside a heavy duty fully closed building with 35 dB rated sound insulation lining for enhanced noise control
- Secondary sorting to be done in fully enclosed warehouse building with all doors and openings closed during processing activities with 35 dB sound insulation
- 3 sided enclosure of tip and spread area to minimise noise transmission
- 5 m noise wall along eastern boundary of site to protect amenity
- Operating hours restricted for waste processing 8am – 5pm Monday to Friday
- Adoption of highly conservative noise power levels in modelling
- Commitment to continuous noise monitoring at boundaries



# Operational Noise Impacts

## (a) Changes made to the Project to address community concerns

- Modelling has assumed worst case scenario at maximum throughput of 200,000 tpa and all plant and equipment operating
- Peer review of noise impact assessment by DPIE and EPA experts
- Commitment to continuous noise monitoring to confirm compliance with conditions
- Commitment to noise monitoring post commissioning (Condition B25) and validation post scale-up (Condition B26)

## (b) Proposed mitigation measures and how they would work in practice

- Noise mitigation measures comprise of built structures (concrete noise walls, concrete block bay walls, buildings to enclose operations)
- **ALL** measures will be constructed prior to commencing operations



Example noise wall along eastern boundary – with additional landscaping to soften interface



Noisy activities to occur in enclosed buildings



Concrete bay walls in processing and storage area for further noise mitigation



# Air Quality

## (a) Changes made to the Project to address community concerns

- Sealed surfaces across the site
- All processing activities in enclosed buildings
- Membrane filtration plant to supply water from pond for dust control
- Mobile water tank to keep roads damp to suppress dust
- Water sprays on storage bunkers
- Misting systems inside buildings and Tip and spread building
- Enclosure of conveyors from mulcher and crusher buildings
- No putrescible waste received at the site
- Ceasing operations during unfavourable conditions
- Drivers instructed to cover loads
- On-site weather station
- Continuous air quality monitoring





# Air Quality

(b) Applicant's assessment including proposed mitigation measures and how they would work in practice

- Modelling by Northstar Air Quality using AERMOD dispersion modelling in accordance with EPA requirements
- Modelling considered cumulative (proposal + background) impacts from a worst case scenario – site operating at maximum capacity - vehicles, plant and equipment operating at maximum simultaneously
- Key pollutants modelled included Total Suspended Particles (TSP), deposited dust, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and silica
- 24-hour maximum concentrations for PM<sub>10</sub> and PM<sub>2.5</sub> well below EPA criteria
- Annual cumulative for PM<sub>10</sub> and PM<sub>2.5</sub> and TSP all below required criteria at all receivers







# Air Quality

## (c) Management of silica and concrete contaminants

- An assessment of silica dust has been done in relation to community concerns
- Silica is a common name for sand (or silica dioxide,  $\text{SiO}_2$ ) which is used as an ingredient in concrete (~25% by weight) – it is also natural component of sandstone
- Northstar air quality modelling indicated that Respirable Crystalline Silica (RCS) at maximum site capacity would be low, with incremental average annual concentrations between  $0.1\text{-}0.3 \mu\text{g}/\text{m}^3$  at residential receivers and  $0.1 \mu\text{g}/\text{m}^3$  at industrial receivers
- Cumulative (including background) RCS concentrations were low too, between  $0.8\text{-}1 \mu\text{g}/\text{m}^3$  at residential receivers and  $0.8 \mu\text{g}/\text{m}^3$  at industrial receivers
- Incremental and cumulative RCS levels are well below the Victorian EPA criteria of  $3 \mu\text{g}/\text{m}^3$  (this same criterion has been adopted by California EPA in the absence of a NSW criterion)
- Conservative assessment – based on a silica (sand) content of processed materials being 67% (by weight) - this is for natural sandstone (high in silica)
- Study concluded the project would not have an adverse silica dust impact
- Good dust management strategies adopted for the site will ensure that silica impacts are adequately managed





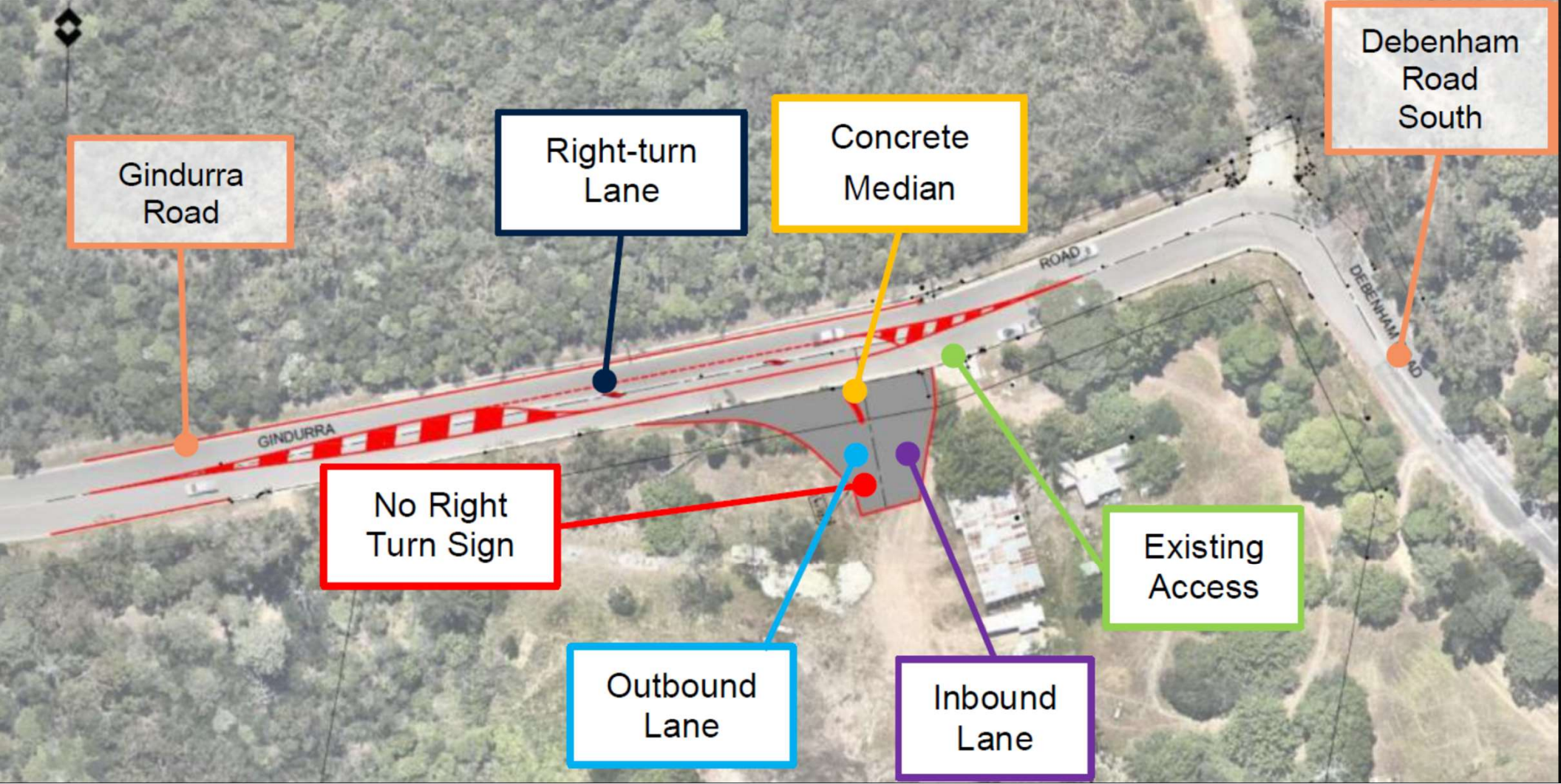
# Operational Traffic and Access

## (a) Heavy vehicle management of Kangoo Rd and Debenham Rd South

- The site is accessed via Gindurra Rd only through the Somersby Industrial Estate
- No trucks to use local roads (Debenham Rd South) and no trucks to pass any rural residential dwellings
- Inbound and outbound lanes to be separated by a concrete median to prevent trucks turning right onto Gindurra Rd then local roads near dwellings
- Recessed site gate to enable holding of a B-double within site when gate is closed
- Right turn lane to be provided from Gindurra Rd into site to enable smooth traffic flow on Gindurra Rd
- Vehicles to enter site from eastbound direction on Gindurra Rd and exit site in a westbound direction (Condition B33(i))
- Applicant has obtained a NHVR permit for B-double access to site
- Operational traffic management plan and driver training required (Condition B32)
- 164 average movements per day (82 in and 82 out): 20 staff vehicles, 77 small trucks (12 tonne tippers), 12 small landscaping trucks, 41 truck&dog/semi trucks and 14 B-doubles



# Proposed site access and Gindurra Rd treatment







Bioswale to be installed along western boundary of site for treatment of runoff

# Stormwater Management

## (a) On site management and mitigation measures

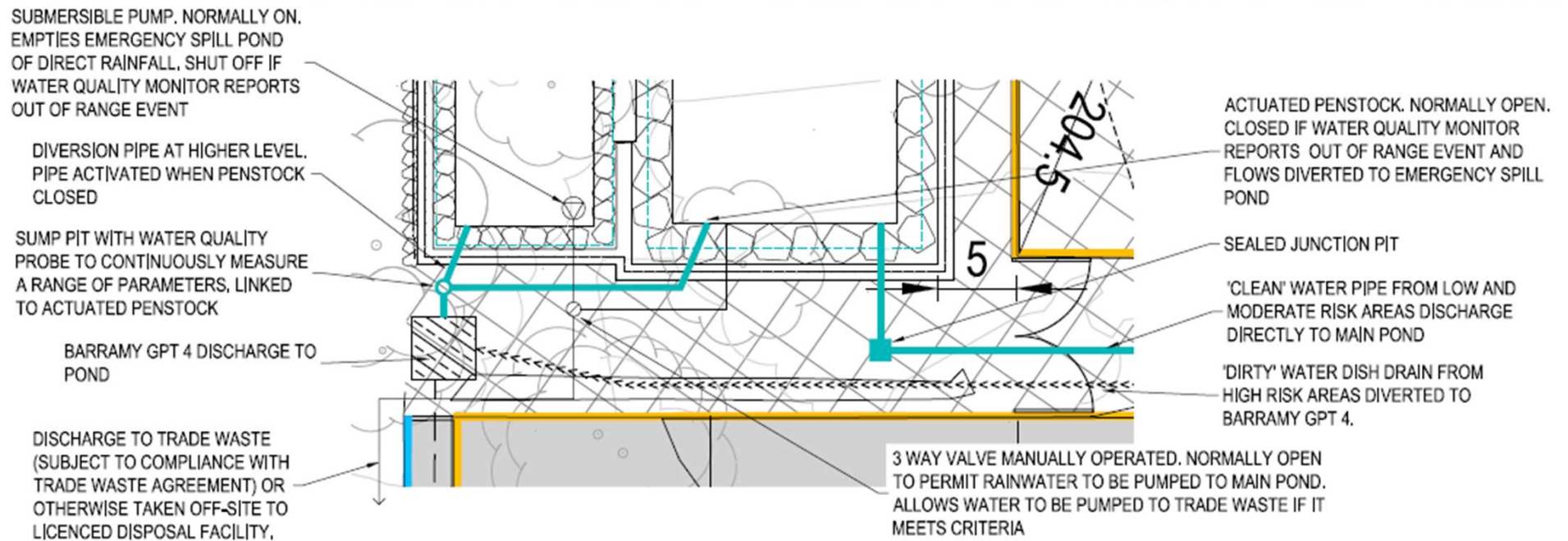
- Best practice water management system proposed to collect, treat, recycle and reuse water within the site
- Strategy is based on maximising water reuse and recycling for operational uses (e.g. dust prevention) and ensure only high quality water leaves the site to support growth and development of bushland to the south and the Melaleuca bioconvexa community to the west
- All feasible water sensitive urban design practices have been considered
- Water is separated into 6 sub-catchments to isolate, treat and manage water depending on the contaminant risk rating
- Treatment train designed for each risk rating including measures such as: filter socks; GPTs; bioswales; 5 ML water quality pond; 0.5 ML emergency spill pond; membrane filtration plant; and a rock level spreader
- Additional mitigation measures include sealed surfaces on trafficked and storage areas; crushed concrete handstand; geomembrane to protect groundwater; extensive rainwater tank storages and tank storage for water from membrane filtration plant; oil/water separator and sewer discharge of treated water from truck wash
- Online continuous water quality monitoring of emergency spill pond and option for sewer discharge of water not meeting criteria for on-site treatment and reuse
- Testing of water in pond to meet ANZECC water quality criteria prior to discharge to enable watering of bushland to the south
- High quality water from membrane filtration plant for dust suppression and watering of Melaleuca bioconvexa community







# Stormwater plan - inset



INSET  
SCALE 1:250





Bioswale to be installed along western boundary of site for treatment of runoff

# Stormwater Management

## (b) Water discharge process

- A large 5ML water quality pond is proposed to capture, detain and treat stormwater through sedimentation
- System designed to cater to a 1 in 100 year event
- Pond contains an additional 2.5 ML freeboard for firewater containment
- Water discharge process (from the water quality pond):
  - Pond to be operated as a Type D sedimentation basin
  - Trigger for discharge of water over a 5 day period following a rainfall event
  - Only quality water that has been tested and validated in accordance with ANZECC criteria will be permitted for discharge
  - Pond has been sized to reduce overflow events to 3 times per year, simulating pre-European conditions (predicted to be 5 times per year)
  - Water to be discharged through a 50m rock level spreader to enable gentle infiltration and watering of bushland to the south
  - Water quality improved compared to predeveloped conditions (meeting the most stringent NorBE test in NSW)
- Water management system to be managed in accordance with a Soil and Water Management Plan (Condition B41), post-commissioning monitoring (Condition B43), water quality verification prior to scale up (Condition B44) and supported by groundwater monitoring (Condition B45)





# Contamination

(b) How existing on-site contamination will be dealt with under the recommended conditions

- A site investigation has been done to assess site for contamination given previous use of site as a recycling facility
- Study noted three areas of concern:
  - Fill of unknown origin (AEC 1)
  - Asbestos containing material near old buildings to NE and in central section of site (AEC 2)
  - Hazardous building materials (lead paint) associated with old buildings to NE of site (AEC 3)
- Asbestos Management Plan prepared and areas around NE of site have been decontaminated and validated by an occupational hygienist as part of the Central Coast Council DA for the warehouse under DA52541/2017
- Asbestos Management Plan (Condition B73 and B74) to be updated and Unexpected Finds Protocol (Condition B72) to be implemented during construction to ensure site is made suitable and avoid any impacts
- Occupation hygienist to certify site is clear after removal of contamination





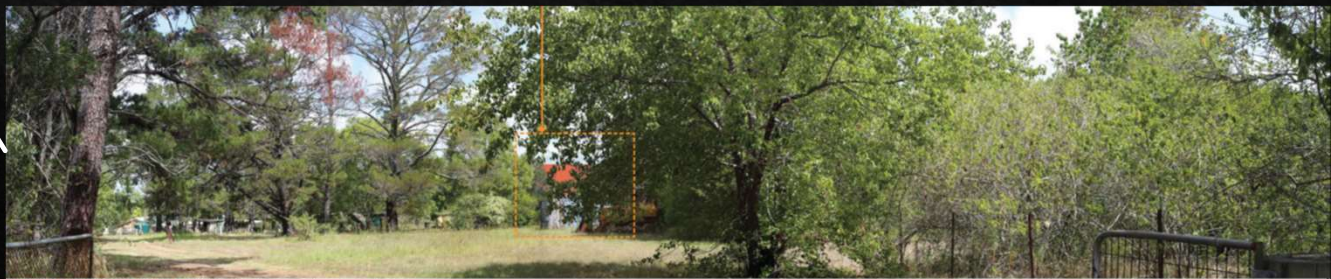
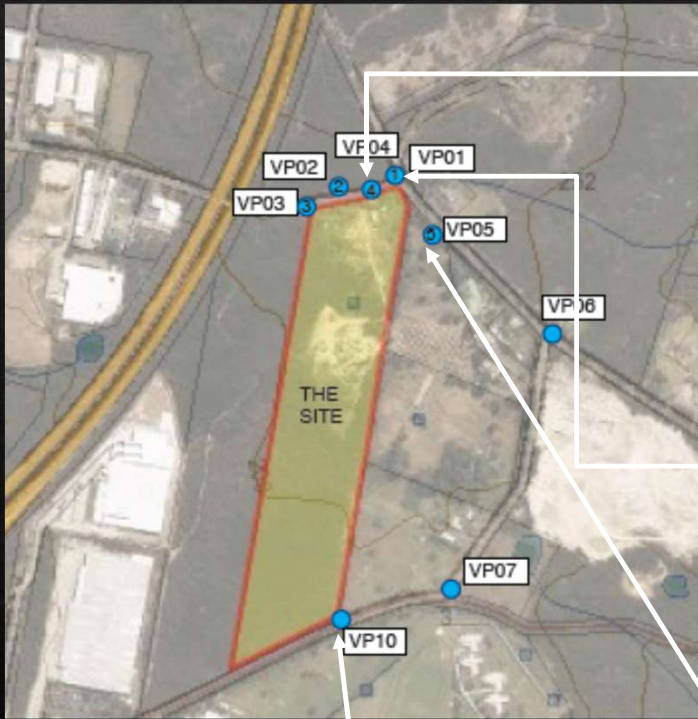
# Visual impacts

## (a) Impacts on public domain and private property

- Visual impact assessment done
- 10 viewpoints considered in the visual impact assessment
- VP01 most affected (corner of Gindurra Rd and Debenham Rd South)
- Gradation of noise wall from 2m above ground level to 5m within site to reduce visual impacts
- Colour of wall to blend with vegetation and further softening of interface between industrial estate and rural interface with screening planting
- Extensive landscaping proposed along Gindurra Rd behind black open type picket fence consistent with the character of the industrial estate and blending with rural interface to the NE



# Viewpoint analysis (updated)







# Visual impacts

## (b) Landscaping and mitigation measures

- Extensive landscaping of along road frontage of Gindurra Rd, including 5m landscaped zone along eastern noise wall and western boundary with native species:
  - Medium trees:
    - *Allocasuarina littoralis*
    - *Banksia serrata*
    - *Ceratopetalum gummiferum*
    - *Melaleuca decora*
  - Shrubs:
    - *Banksia ericifolia*
    - -*Bauera rubioides*
    - -*Doryanthes palmari*
    - -*Kunzea ambigua*
    - -*Leptospermum polygalifolium*
    - -*Hakea sericea*
- Retention of vegetation along eastern boundary to provide screening
- Landscape Management Plan to be prepared (Condition B76) and maintain landscaping for the life of the development (Condition B77)





## Recommended Conditions of Consent

- Proponent endorses all conditions of consent
- No changes requested to the conditions of consent





# Thank you

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