

Traffic Management Plan

Forest Wind

within

Fraser Coast Regional Council and Gympie Regional Council

for

Forest Wind Holdings Pty Limited

**Document Reference: 15-200-TMP
October 2019**

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Date	4 October 2019
Job Number	15-200
Document Name	15-200–Traffic Management Plan
Version	1.2

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STATEMENT OF LIMITATION

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1. Introduction

icubed was commissioned by Forest Wind Holdings Pty Limited to undertake a traffic management plan to be included with an application for a development approval under the provisions of the Queensland State Code 23 Wind Farm for a proposed Wind Farm called Forest Wind located within an actively managed and operational exotic pine plantation in Queensland Government owned Toolara, Tuan and Neerdie State Forests, situated between Gympie and Maryborough in the Wide Bay Region of Queensland. The Wind Farm is to be built by Forest Wind Holdings Pty Limited.

This report details the overarching vehicle movement planning requirements in accordance with the project requirements and relevant standards. An evaluation of public vehicular and pedestrian traffic, and construction worker hazard exposure will be conducted.

We note that this Traffic Management Plan should be read in conjunction with the Traffic Impact Assessment (TIA) and Transport Route Study prepared by *icubed consulting*, which can be found in the Appendices of this report.

This report is preliminary at this stage, and should be revised once the project reaches the detailed design stage of works and a Contractor has been engaged to re-assess the discussed outcomes.

For the purpose of this assessment, the worst-case intersection usage has been adopted for the Bruce Highway / Neerdie Road access. Once a contractor has been selected, we recommend this report be revised.

1.1 Limits of Report

The above tasks have been carried out based on information supplied by other members of the project team, a desktop review and information from relevant authorities. These are detailed in the report.

While icubed has taken care in the preparation of this report, it neither accepts liability nor responsibility whatsoever in respect of;

- Any use of this report by any third party; and
- Any third party whose interests may be affected by any decision made regarding the contents of this report.

2. Existing Conditions

2.1 Site Location

The subject site is located within an actively managed and operational exotic pine plantation in Queensland Government owned Toolara, Tuan and Neerdie State Forests, situated between Gympie and Maryborough in the Wide Bay Region of Queensland.

The Wind Farm, as shown in Figure 1, will be constructed over the following lots:

Lot 1004 FTY1659, Lot 1419 FTY 1697 and Lot 915 FTY1775.

The existing forestry site is accessible from multiple access points, some of which will be used to facilitate the Wind Farm.

The proposed site layout is attached in Appendix A.

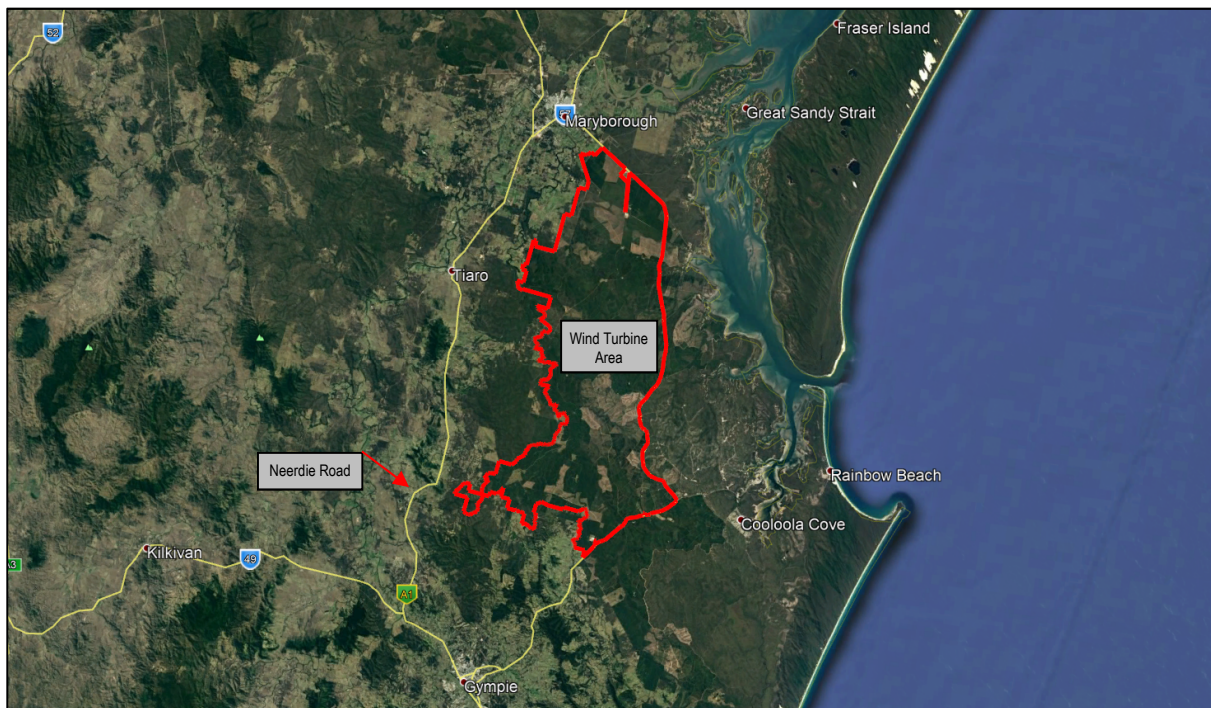


Figure 1 Site Locality Plan
Source Google Earth 2019

2.2 Existing Use

The primary existing land use for the site is currently as one of Australia's largest pine forestry plantations, with secondary usage for public access under recreational and commercial activities, including cattle grazing. The site is bounded by large forest areas and a number of arterial roads, including Maryborough-Tuan Forest Road (Boonaroo Road) to the north, Maryborough Cooloola Road to the east, Tin Can Bay Road to the south, and other forest and vegetated areas to the west.



2.3 Existing Road Network

Transport routes and access to the proposed Wind Farm has been identified as being from areas surrounding Brisbane, Gympie, Sunshine Coast, Noosa, Maryborough and surrounding Towns. The site will be serviced from these locations by a range of state controlled, local council and privately-owned roads.

The Transport Routes have been detailed in the TIA prepared by *icubed consulting*, which can be found in Appendix B. The road networks detailed in Table 1 have been extracted from the identified transport routes in the TIA.

Table 1 - Road Networks

Road Classification	Road Name
State controlled roads	Port of Brisbane Motorway Gateway Motorway Bruce Highway Maryborough-Tuan Forest Road (Boonooro Road) Maryborough-Cooloola Road Tin Can Bay Road
Local council roads (Authority)	Neerdie Road (Gympie Regional Council) Maryborough-Tuan Forest Road (Fraser Coast Regional Council)
Privately owned roads (Authority)	Bishop Drive (Port of Brisbane) Lucinda Drive (Port of Brisbane) Port Drive (Port of Brisbane) Gateway Motorway (Queensland Motorways Limited)

2.4 Existing Traffic Volumes

Existing traffic volumes for the state-controlled networks and regional council roads shown in Table 1 have been determined using Annual Average Daily Traffic (AADT) data provided by the Department of Transport and Main Roads. The AADT data records can be found in Appendix E with a summary of critical information required by the Traffic and Impact Assessments in Table 2.

Data along the Transport Route for Bishop Drive, Lucinda Drive, Port Drive and sections of the Gateway Motorway are unavailable, as they are privately owned.

Assumptions for the data analysis is as follows:

- Both directions of travel have been analysed, as traffic would need to arrive at the specific location and leave in the same direction of travel.
- For the state-controlled networks, annual growth rates were provided based on one, five- and ten-year data. For the purpose of this traffic volume assessment, the five-year growth rate has been adopted.
- Where the annual five-year growth rate was not available for a road section, the growth rate from the adjacent sections was adopted and averaged.
- Where the annual five-year growth rate indicated negative growth, the rate was taken to be zero.
- Where the percentage of heavy vehicles was not available for a road section, the percentage of heavy vehicles from the adjacent road section was adopted and averaged.
- The turn onto Neerdie Road from the Bruce Highway (Site ID 120873) has been taken separately for Transport Routes 1, 2, 3 and 4 in comparison to Transport Route 5, as they access Neerdie Road in a different direction.



Table 2 - Summary of "Actual" traffic data

Road section ID	Site ID	Road section name	Combined bi-directional traffic data				
			Historic AADT	Data year	% Heavy Vehicles	Annual Growth Rate	AADT ("Actual")
Data for Port Drive unavailable							
U27	136238	Port of Brisbane Motorway	10860	2016	42.21%	0.00% ₂	10860
Data for Gateway Motorway unavailable							
U13C	131830	Gateway Arterial Road (Gateway Motorway - North)	74217	2018	17.82%	0.00% ₁	74217
	130067	Gateway Arterial Road (Gateway Motorway - North)	72715	2018	14.61% ₃	2.85%	74787
U14	135970	Gympie Arterial Road	155916	2018	11.39%	2.45%	159736
10A	135995	Bruce Highway (Brisbane - Gympie)	155602	2018	11.40%	2.21%	159041
	130050	Bruce Highway (Brisbane - Gympie)	129278	2018	10.66%	2.20%	132122
	135790	Bruce Highway (Brisbane - Gympie)	117823	2018	11.76%	2.62%	120910
	20854	Bruce Highway (Brisbane - Gympie)	108284	2018	12.34% ₃	2.04%	110493
	20206	Bruce Highway (Brisbane - Gympie)	117622	2018	12.34% ₃	3.91%	122221
	20797	Bruce Highway (Brisbane - Gympie)	108325	2018	12.34% ₃	3.65% ₂	112279
	21084	Bruce Highway (Brisbane - Gympie)	111360	2018	12.34% ₃	3.38%	115124
	20948	Bruce Highway (Brisbane - Gympie)	65198	2016	12.92%	3.58% ₂	67532
	20221	Bruce Highway (Brisbane - Gympie)	67653	2018	12.57%	3.78%	70210
	20353	Bruce Highway (Brisbane - Gympie)	57523	2016	12.67%	2.66% ₂	59053
	23931	Bruce Highway (Brisbane - Gympie)	62996	2018	13.66%	2.66% ₂	64672
	21082	Bruce Highway (Brisbane - Gympie)	61409	2015	11.06%	1.54%	62355
	20222	Bruce Highway (Brisbane - Gympie)	63618	2017	11.67% ₃	1.30%	64445
	21083	Bruce Highway (Brisbane - Gympie)	45699	2016	12.27%	4.34%	47682
	21085	Bruce Highway (Brisbane - Gympie)	51629	2018	14.61%	2.60%	52971
	20230	Bruce Highway (Brisbane - Gympie)	39544	2018	16.93%	4.44%	41300
	21086	Bruce Highway (Brisbane - Gympie)	37379	2018	17.30%	4.76%	39158
	20739	Bruce Highway (Brisbane - Gympie)	32461	2018	15.49%	3.32%	33539
	20911	Bruce Highway (Brisbane - Gympie)	31539	2016	12.06%	3.82%	32744
	20006	Bruce Highway (Brisbane - Gympie)	20861	2018	16.64%	2.00%	21278
	20212	Bruce Highway (Brisbane - Gympie)	25074	2018	16.36%	3.34%	25911
	20007	Bruce Highway (Brisbane - Gympie)	19044	2018	22.26%	3.87%	19781
	20944	Bruce Highway (Brisbane - Gympie)	18588	2018	18.56%	2.07%	18973
	20521	Bruce Highway (Brisbane - Gympie)	16911	2018	19.85%	2.69%	17366
	20204	Bruce Highway (Brisbane - Gympie)	17487	2018	17.07%	1.83%	17807
	20834	Bruce Highway (Brisbane - Gympie)	20131	2018	14.50%	7.93%	21727
	20261	Bruce Highway (Brisbane - Gympie)	20830	2018	14.29%	4.52%	21772
	23736	Bruce Highway (Brisbane - Gympie)	21273	2018	13.60% ₃	0.68%	21418
21090	Bruce Highway (Brisbane - Gympie)	21549	2018	12.91%	3.15%	22228	
10B	21926	Bruce Highway (Gympie - Maryborough)	26826	2018	14.45% ₃	1.29%	27172
	20986	Bruce Highway (Gympie - Maryborough)	20799	2018	14.45%	0.00% ₁	20799
	20355	Bruce Highway (Gympie - Maryborough)	17585	2018	15.99%	1.42%	17835
	20988	Bruce Highway (Gympie - Maryborough)	14239	2018	15.96%	1.98%	14521
	20719	Bruce Highway (Gympie - Maryborough)	13530	2018	18.77%	1.68%	13757
	20201	Bruce Highway (Gympie - Maryborough)	12294	2018	18.21% ₃	4.84%	12889
	120883	Bruce Highway (Gympie - Maryborough)	11109	2018	17.65%	3.24%	11469
	120873	Bruce Highway (Gympie - Maryborough)	9854	2018	20.54%	2.51%	10101
Continue onto site access points							
136	21119	Maroochydore Road	32140	2018	8.20% ₃	2.00%	32783
	23787	Maroochydore Road	23156	2018	8.20% ₃	2.55%	23746
Continue onto Site ID Route 20230 (Bruce Highway)							
142	20760	Cooroy - Noosa Road	11697	2017	7.11%	2.41%	11979



	20482	Cooroy - Noosa Road	10341	2018	6.92%	1.27%	10472
	20740	Cooroy - Noosa Road	10588	2017	8.59%	3.30%	10937
145	21130	Cooroy Connection Road	9491	2018	8.82% ₃	0.79%	9566
	20050	Cooroy Connection Road	7874	2018	9.04%	3.48%	8148
	21266	Cooroy Connection Road	3954	2018	8.17%	8.65%	4296
Continue onto Site ID Route 20944 (Bruce Highway)							
163	120865	Maryborough - Hervey Bay Road	15425	2018	8.56%	0.52%	15505
	120991	Maryborough - Hervey Bay Road	8661	2018	10.01%	0.00% ₁	8661
	120871	Maryborough - Hervey Bay Road	5228	2018	16.81%	0.00% ₁	5228
10B	120876	Bruce Highway (Gympie - Maryborough)	8992	2018	18.99%	2.45%	9212
	120872	Bruce Highway (Gympie - Maryborough)	11275	2018	18.00%	2.18%	11521
	120875	Bruce Highway (Gympie - Maryborough)	10708	2018	18.66%	2.13%	10936
	120017	Bruce Highway (Gympie - Maryborough)	9413	2018	14.43%	0.00% ₁	9413
	120400	Bruce Highway (Gympie - Maryborough)	9936	2018	18.79%	2.49%	10183
	120873	Bruce Highway (Gympie - Maryborough)	9854	2018	20.54%	2.51%	10101
Continue onto site access points							

₁ The published growth rates for the road section was negative. A zero-growth rate was adopted.

₂ The annual five-year growth rate was not available for this section. The growth rate from the adjacent sections were adopted and averaged.

₃ Percentage heavy vehicles not available for this section. The percent heavy vehicles from the adjacent sections were adopted and averaged.



3. Proposed Development

3.1 Description of Proposed Development

The proposed development will comprise of a Wind Farm which has been assumed, for the purpose of this assessment, to be built in a single stage, with the project execution to be over approximately 4 years. It is anticipated that the Wind Farm will comprise of up to 226 wind turbine generators (WTG) spread across the subject site, with each having a maximum ground to tip height of up to 295m, and being approximately 6MW (+/- 3MW) which will generate a maximum of 1200MW collectively. Each WTG tower base final configuration is still to be finalised, but the WTG blade configuration is expected to be up to 84m in length.

The Construction compound (Primary) and substation areas are located approximately 35km from the Neerdie Road / Bruce Highway intersection. The access to this site office and substation will be from a new internal road that is accessed from Neerdie Road. The new internal access road will be subject to daily traffic as part of the ongoing operations and maintenance of the Wind Farm.

The proposed site layout is attached in Appendix A.

3.2 Proposed Access Arrangements

Access to the Construction compounds for the project shall be from existing forestry tracks, upgraded where necessary, which will connect to either Neerdie Road, Maryborough-Tuan Forest Road (Boonooroo Road), Maryborough-Cooloola Road and Tin Can Bay Road adjacent to the Wind Farm site boundary. Neerdie Road access will form the primary access to the internal tracks that will access site facilities and the WTG within the development, while Maryborough-Tuan Forest Road (Boonooroo Road), Maryborough-Cooloola Road and Tin Can Bay Road will form the secondary accesses.

The proposed site access locations are as follows:

- Intersection 1 (west) – Bruce Highway / Neerdie Road (-25.982534, 152.576089)
- Intersection 2 (north) – Maryborough-Tuan Forest Road (Boonooroo Road) / Maryborough-Tuan Forest Road / site access point (-25.590908, 152.790654)
- Intersection 3 (east) – Maryborough-Cooloola Road / site access point (-25.808699, 152.864606)
- Intersection 4 (south) – Tin Can Bay Road / site access point (-25.988735, 152.841481)

A construction phase Traffic Management Plan (TMP) is proposed to implement appropriate signage and controls to create an appropriate level of awareness of increased vehicle movements in the area.

3.3 Proposed Transport Routes

The Transport Routes, as identified in the TIA prepared by *icubed consulting*, have been adopted in this report to determine the preliminary daily project related traffic volumes. Figures 2 and 3 below show a visual representation of the Transport Route, while Table 3 shows the extracted data as identified in the Traffic Impact Assessment.

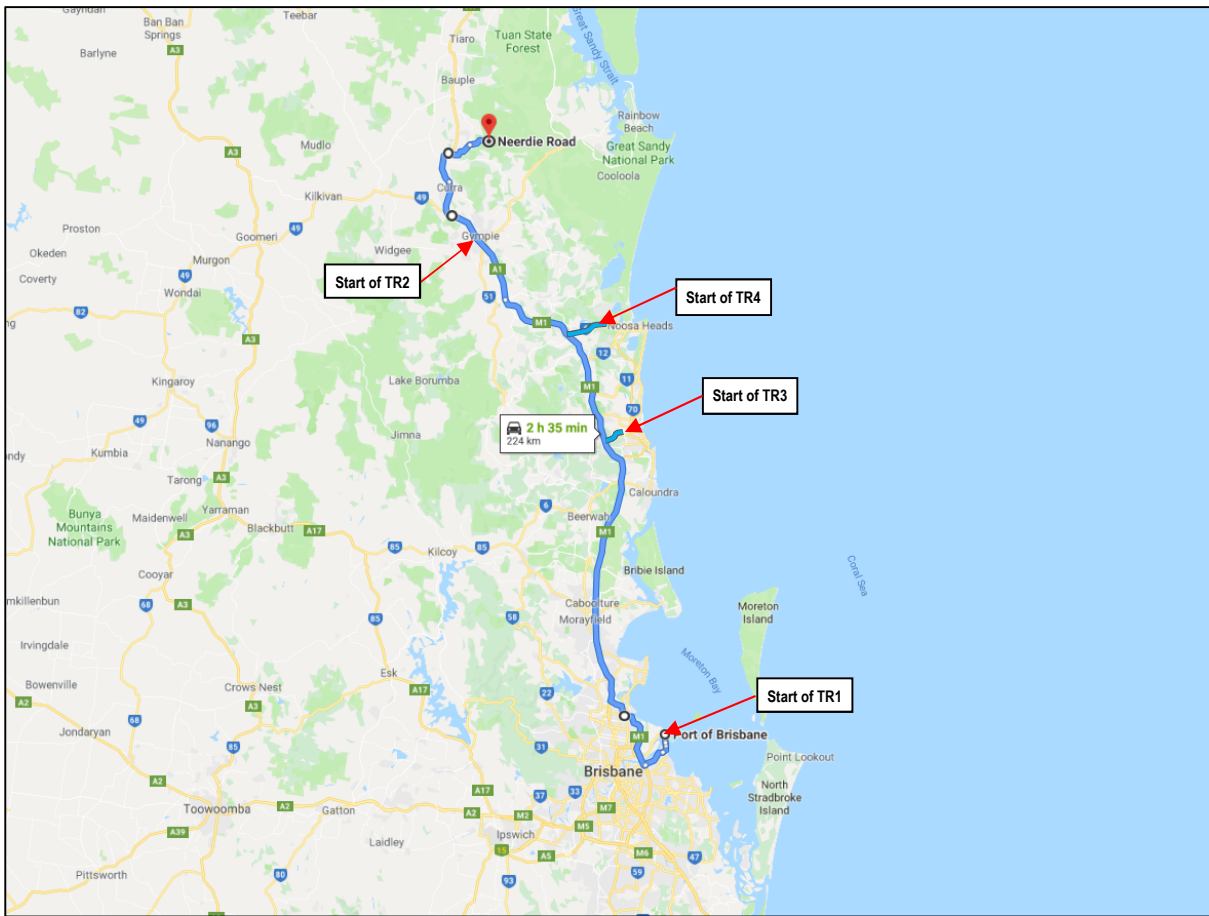


Figure 2 Transport Routes 1, 2, 3 and 4
Source Google Maps 2019

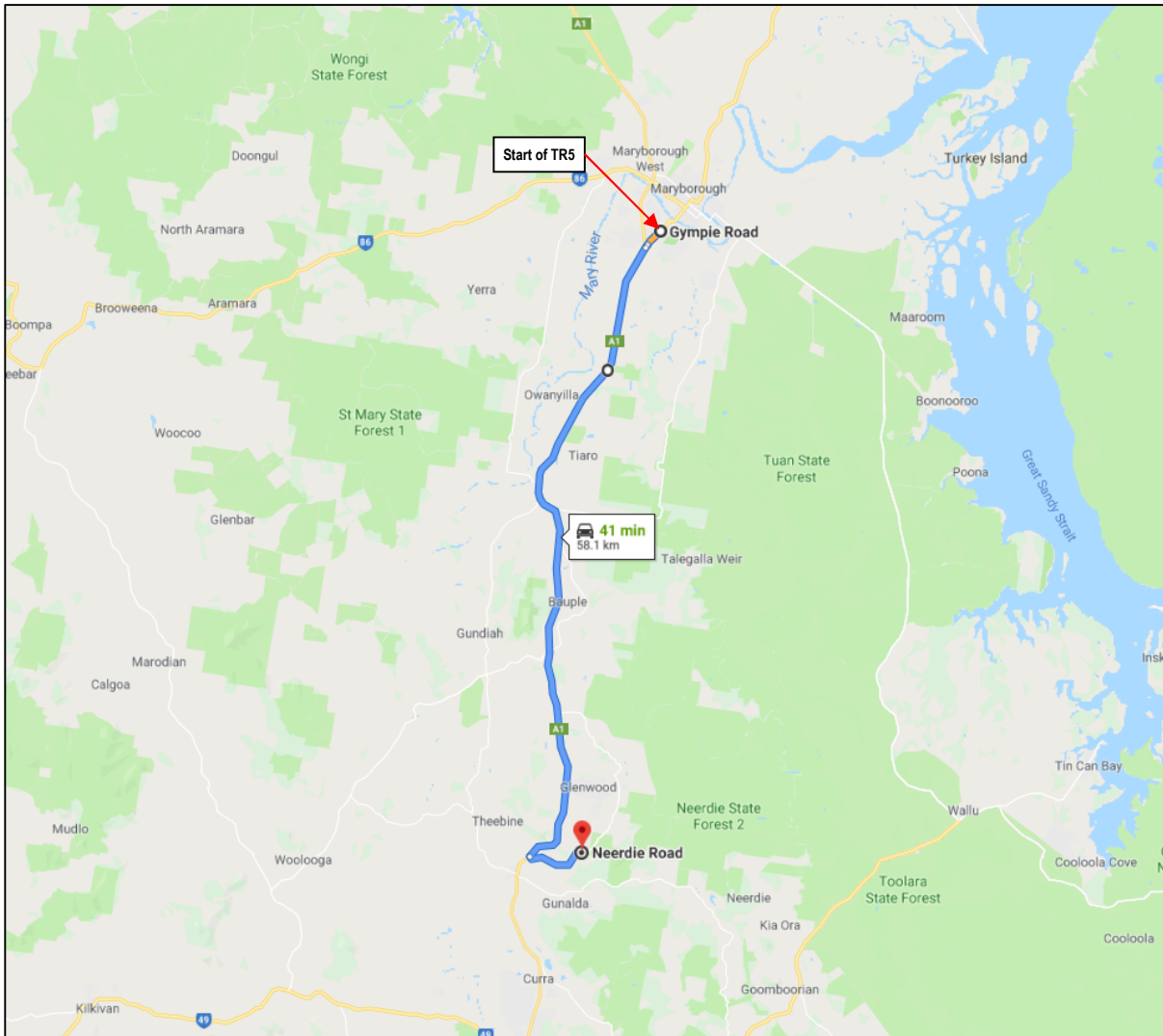


Figure 3 Transport Route 5
 Source Google Maps 2019

Table 3 - Transport Routes

Transport Route Identifier	Transport Route Description	Constituting Roads	Transport Purpose
TR1	Port of Brisbane to Forest Wind	Bishop Drive Lucinda Drive Port Drive Port of Brisbane Motorway Gateway Motorway Bruce Highway Neerdie Road	<ul style="list-style-type: none"> • Transport of equipment • Transport of materials • Transport of workers
TR2	Gympie (and surrounding Towns) to Forest Wind	- Continue on path from (Brisbane to Site) along Bruce Highway	<ul style="list-style-type: none"> • Transport of equipment • Transport of materials • Transport of workers
TR3	Sunshine Coast to Forest Wind	Maroochydore Road - Continue on path from (Brisbane to Site) along Bruce Highway	<ul style="list-style-type: none"> • Transport of equipment • Transport of materials • Transport of workers



TR4	Noosa (and surrounding Towns) to Forest Wind	Beckmans Road Cooroy Noosa Road Elm Street - Continue on path from (Brisbane to Site) along Bruce Highway	<ul style="list-style-type: none"> Transport of workers
TR5	Maryborough (and surrounding Towns) to Forest Wind	Gympie Road Bruce Highway Neerdie Road	<ul style="list-style-type: none"> Transport of equipment Transport of materials Transport of workers

3.4 Construction Trip Generation and Distribution

The trip generation data has been extracted from the TIA prepared by *icubed consulting*, and can be found in Appendix B. This covers Construction and Operational Phases only, as these phases will produce the majority of impacts on traffic and pavements.

Table 4 shows the trip generation data that was summarised from the TIA. Additional details in this table shows a distribution of the percentage of the construction activity relative to the transport method and transport route (Refer Table 3).

Table 4 - Indicative Traffic Distribution for Construction Activities

Construction Activity	Percentage of total quantity transported	Transported Via	Transport Route
Workers	1%	Brisbane	TR1
	44%	Gympie	TR2
	4%	Sunshine Coast	TR3
	5%	Noosa	TR4
	46%	Maryborough	TR5
Water Truck	100%	Maryborough	TR5
Cement tanker	100%	Brisbane	TR1
Flyash Deliveries	50%	Brisbane	TR1
	50%	Maryborough	TR5
Silica Fume Deliveries	50%	Brisbane	TR1
	50%	Maryborough	TR5
20mm concrete aggregate	100%	Gympie / Quarry	TR2
10mm concrete aggregate	100%	Gympie / Quarry	TR2
Gravel	100%	Gympie / Quarry	TR2
14mm sealing aggregate	100%	Gympie / Quarry	TR2
7mm sealing aggregate	100%	Gympie / Quarry	TR2
Riversand Deliveries	100%	Gympie / Quarry	TR2
Crusher dust Deliveries	100%	Gympie / Quarry	TR2
RCP deliveries	50%	Gympie	TR2
	50%	Sunshine Coast	TR3
Formwork	50%	Gympie	TR2
	50%	Sunshine Coast	TR3
Steel embedments	100%	Port of Brisbane	TR1
Steel reinforcement	50%	Gympie	TR2
	50%	Sunshine Coast	TR3
Electrical Cable	100%	Brisbane	TR1
Electrical Overhead Lines (OHL)	50%	Gympie	TR2
	50%	Maryborough	TR5
Electrical OHL Equipment	50%	Gympie	TR2
	50%	Maryborough	TR5
Power Poles	50%	Gympie	TR2
	50%	Maryborough	TR5



Electrical - Transformers	100%	Port of Brisbane	TR1
Electrical - Switch Room	100%	Port of Brisbane	TR1
WTGs - Blade deliveries	100%	Port of Brisbane	TR1
WTGs - Nacelle deliveries	100%	Port of Brisbane	TR1
WTGs - Hub deliveries	100%	Port of Brisbane	TR1
WTGs - Tower (6 sections)	100%	Port of Brisbane	TR1
Cranes	30%	Brisbane	TR1
	70%	Gympie	TR2
Portable Buildings	100%	Brisbane	TR1

3.5 Construction Forecast project traffic volumes

The indicative traffic distribution results shown in Table 4 can be used to assess the forecasted traffic volumes. The forecasted traffic volumes for each Transport Route (Refer Table 3) have been compiled in condensed Table 5 to show the trip variation against the Transport Route and Construction Activity. For a full overview, refer to the TIA in Appendix B.

Table 5 - Daily Project related Traffic Volumes

Transport Route	Construction Activity	Total daily two-way vehicle trips			
		Light vehicle trips	Heavy vehicle trips	Over dimensional vehicle trips	Total trips
TR1	Workers	2	0	0	2
	Cement tanker	0	3	0	3
	Flyash Deliveries	0	1	0	1
	Silica Fume Deliveries	0	1	0	1
	Steel embedments	0	1	0	1
	Electrical Cable	0	3	0	3
	Electrical - Transformers	0	0	1	1
	Electrical - Switch Room	0	0	1	1
	WTGs - Blade deliveries	0	0	2	2
	WTGs - Nacelle deliveries	0	0	1	1
	WTGs - Hub deliveries	0	0	1	1
	WTGs - Tower (6 sections)	0	0	2	2
	Cranes	0	0	1	1
	Portable Buildings	0	0	1	1
	Total Trips	2	8	10	20
TR2	Workers	88	0	0	88
	20mm concrete aggregate	0	8	0	8
	10mm concrete aggregate	0	8	0	8
	Gravel	0	60	0	60
	14mm sealing aggregate	0	2	0	2
	7mm sealing aggregate	0	2	0	2
	Riversand Deliveries	0	5	0	5
	Crusher dust Deliveries	0	5	0	5
	RCP deliveries	0	1	0	1
	Formwork	0	1	0	1
	Steel reinforcement	0	1	0	1
	Electrical Overhead Lines	0	1	0	1
	Electrical OHL Equipment	0	1	0	1
	Power Poles	0	0	1	1
	Cranes	0	0	1	1
Total Trips	88	93	2	182	
TR3	Workers	8	0	0	8
	RCP deliveries	0	1	0	1



	Formwork	0	1	0	1
	Steel reinforcement	0	2	0	2
	Total Trips	8	2	0	10
TR4	Workers	10	0	0	10
	Total Trips	10	0	0	10
TR5	Workers	92	0	0	92
	Water Truck	0	50	0	50
	Flyash Deliveries	0	1	0	1
	Silica Fume Deliveries	0	1	0	1
	Steel reinforcement	0	1	0	1
	Electrical Overhead Lines	0	1	0	1
	Electrical OHL Equipment	0	1	0	1
	Power Poles	0	0	1	1
	Total Trips	92	52	1	145

3.6 Development Related Issues and Risks

The following issues and risks are faced by the workers completing the Wind Farm construction:

Table 6 - Development Related Issues and Risks

Issue / Risk	Impact	Management Strategy
Heavy vehicles required on site during peak hours	Disturbance to the public	The Traffic Impact Assessment (Appendix B) shows that there is not a large increase in peak hour traffic related to the development. Both the peak and non-peak impacts on the traffic and pavement are generally within the required ranges in comparison to existing data.
Light vehicles required on site during peak hours	Disturbance to the public	The impact of light vehicles travelling during peak hours will be limited with the use of multiple access points. Where possible, construction activities requiring workers will be kept outside of peak hours to avoid disturbance.
Heavy traffic travelling on unsealed roads to site access point	Damage to local roads	Any unsealed roads along the Transport Route are recommended to be upgraded to cater for the heavy vehicles.
Heavy traffic within the Wind Farm site	Accident risk increased	Appropriate onsite signage and construction programming to reduce this risk, especially to the existing forestry traffic.
Existing forestry traffic	Accident risk increased	Existing forestry traffic will continue to be operational during the construction of the Wind Farm. The selected contractor will need to maintain an open line of communication with forestry traffic to ensure that risks of accidents are reduced.

It is recommended that when a Contractor is engaged that a Development Risk Register and Assessments are conducted to aid in minimising and/or eliminating identified risks.



4. Construction Traffic Management and Control

4.1 Construction Worker Driver Management

4.1.1 Driver Conduct

All vehicle drivers related to the Wind Farm are to uphold a high level of professional conduct, and at minimum comply with the following:

- Follow all posted speed limits and road signage to reduce fugitive dust and to protect amenity, forestry workers, the community and driver safety;
- Follow instructions as given by Police, Road and Traffic Authorities and all other relevant authorities;
- Be mindful of pedestrians and other road users along the designated Transport Routes (Refer Table 3);
- Vehicles travelling to and from site are to have all loads covered;
- Vehicles are only allowed to unload and reload onsite;
- Littering will not be tolerated;
- Reduce noise impacts:
 - Use of the horn only as a warning device;
 - Limiting truck compression braking and use of engine brakes in residential areas.

4.1.2 Workplace Safety

The chosen Contractor will be responsible to ensure that all reasonable measures have been taken to ensure that all potential risks have been minimised or eliminated for both onsite and offsite activities.

All employees, contractors and visitors have a responsibility to act in a responsible manner when carrying out works related to the development as to prevent injury to themselves and others.

All accidents and incidents are to be recorded onsite and reported to the Site Management as soon as practically reasonable.

4.1.3 Drivers Licence Requirements

All drivers must have the appropriate licence class for the vehicles they are driving, including appropriate heavy vehicle Drivers Licences for commercial and heavy vehicle drivers.

All vehicle drivers must keep their Drivers Licence with them at all times and make it available when requested by Site Management and relevant authorities.

4.1.4 Drug and Alcohol Policy

A zero drug and alcohol policy will be implemented with all activities relative to the Wind Farm. It is recommended that a drug and alcohol test be required at the beginning of works for all site personnel. All workers may also be randomly selected to undergo a drug and alcohol test during the works.

4.1.5 Peak Travel Times

Ensuring public pedestrian and vehicle safety is imperative. The largest risk associated with public safety will be during peak hours with the public travelling to work or school.

Most towns have overpasses or underpasses crossing the relevant highways along the Transport Route; however, the towns listed in Table 7 do not have these overpasses or underpasses. The towns have been listed against the relative Transport Route to gain a better understanding of the associated risks.



Table 7 - Towns with Traffic Impacts During Peak Hours

Town	Transport Route	Development Vehicles Passing Through Town
Glanmire, Monkland, Gympie, Chatsworth, Curra, Gunalda	TR1, TR2, TR3, TR4	Light vehicles – transport of workers Heavy vehicles – transport of equipment and materials Over dimensional vehicles – transport of equipment and materials
Tiaro, Glenwood	TR5	Light vehicles – transport of workers Heavy vehicles – transport of equipment and materials

The results of the traffic and pavement impact assessments (Refer to the TIA in Appendix B) show that the development traffic does not exceed the 5% impact loading on the network.

To further aid in limiting the risk to the general public it will be recommended to the Contractor and workers to avoid being on the road particularly during school pick-up and drop-off times, where reasonably practical. Signage for areas with dense heavy vehicle usage will also be recommended to make the public more aware of the heavy vehicle zones.

4.1.6 Bruce Highway Upgrades

The Department of Transport and Main Roads have proposed upgrades to sections of the Bruce Highway along the Transport Route, as tabulated in Table 8.

Table 8 – DTMR Road Upgrades

Proposed Upgrade Location	Project Timeline	Upgrade Overview
Bruce Highway (Caloundra Road to Sunshine Motorway)	Expected construction completion in late-2020	This project involves upgrading the Bruce Highway to 6 lanes between Caloundra Road and the Sunshine Motorway. Finalisation of Forest Wind construction timeframes would be needed to make an assessment on the potential impacts on both the highway upgrade project and expected Wind Farm traffic.
Bruce Highway (Cooroy to Curra, section D works)	Not available as of yet	Section D upgrade is the final portion of the 62km realignment and upgrade of the Bruce Highway. Section D covers upgrades from Woondum to Curra. Finalisation of Forest Wind construction and the Section D upgrade timelines would be needed to make an assessment on the potential impacts on both the highway upgrade project and expected Wind Farm traffic.
Bruce Highway (Maroochydore Road and Mons Road Interchanges)	Construction is expected to commence in 2020, with an expected completion in 2022.	The Maroochydore Road and Mons Road interchanges are being upgraded on the Bruce Highway. The design does not include any provisions to upgrade the existing Bruce Highway at this location, but construction traffic may impact the traffic flows on the Bruce Highway. Finalisation of Forest Wind construction timeframes would be needed to make an assessment on the potential impacts on both the highway upgrade project and expected Wind Farm traffic.
Bruce Highway (Pine River to Caloundra Road Interchange)	N/A – planning project only	Planning project used to investigate and identify any upgrades needed to the Bruce Highway between Pine River and the Caloundra Road interchange. This project is not likely to coincide with Forest Wind.



Bruce Highway (safety barriers between Beerburrum to Cooroy)	Expected construction completion in mid-2020	<p>Various work packages are underway to install safety barriers between Beerburrum to Cooroy.</p> <p>The traffic generated by Forest Wind is not likely to impact this project due to timelines.</p>
Bruce Highway (Tiaro Flood Immunity Upgrade)	N/A – planning project only	<p>This planning project is being used to investigate options to improve flood immunity to the Bruce Highway around Tiaro.</p> <p>This project is not likely to coincide with Forest Wind.</p>
Bruce Highway (Caboolture-Bribie Island Road to Steve Irwin Way)	Construction is expected to commence in 2020, with an expected completion in 2022.	<p>Design is underway to upgrade the Bruce Highway from four to six lanes between Caboolture-Bribie Island Road and Steve Irwin Way.</p> <p>This project is linked to upgrades identified in the planning project on the Bruce Highway between Pine River to Caloundra Road Interchange.</p> <p>Finalisation of Forest Wind construction timeframes would be needed to make an assessment on the potential impacts on both the highway upgrade project and expected Wind Farm traffic.</p>
Bruce Highway (Deception Bay Road Interchange)	Construction is expected to commence in 2020	<p>This upgrade project has been designed to ease congestion, improve safety and cater for future traffic.</p> <p>This project is linked to upgrades identified in the planning project on the Bruce Highway between Pine River to Caloundra Road Interchange.</p> <p>Finalisation of Forest Wind construction timeframes would be needed to make an assessment on the potential impacts on both the highway upgrade project and expected Wind Farm traffic.</p>
Bruce Highway (Wide Bay Highway intersection upgrade)	N/A – planning project only	<p>This project involves upgrading the Bruce Highway and Wide Bay Highway intersection to resolve community concerns over safety and intersection delays.</p> <p>The design and solutions are still being resolved with community consultation.</p> <p>This project is not likely to coincide with Forest Wind.</p>

Informing construction workers of these upgrades will be important to ensure safety through information, and maintaining the awareness for major roadworks and road changes to the Transport Route.



5. Conclusion

This report represents the transport management plan for the proposed Wind Farm located within an actively managed and operational exotic pine plantation in Queensland Government owned Toolara, Tuan and Neerdie State Forests, situated between Gympie and Maryborough in the Wide Bay Region of Queensland.

For the purpose of this assessment the Wind Farm is intended to be built in a single stage, with the project execution to be over approximately 4 years.

Assessment of the traffic impact of the Wind Farm was considered for the following:

- Existing and proposed site and network conditions;
- Traffic Management and Control during construction operations to reduce the associated issues and risks on the public and workers;
- Existing road upgrades.

A summary of the traffic assessment is as follows:

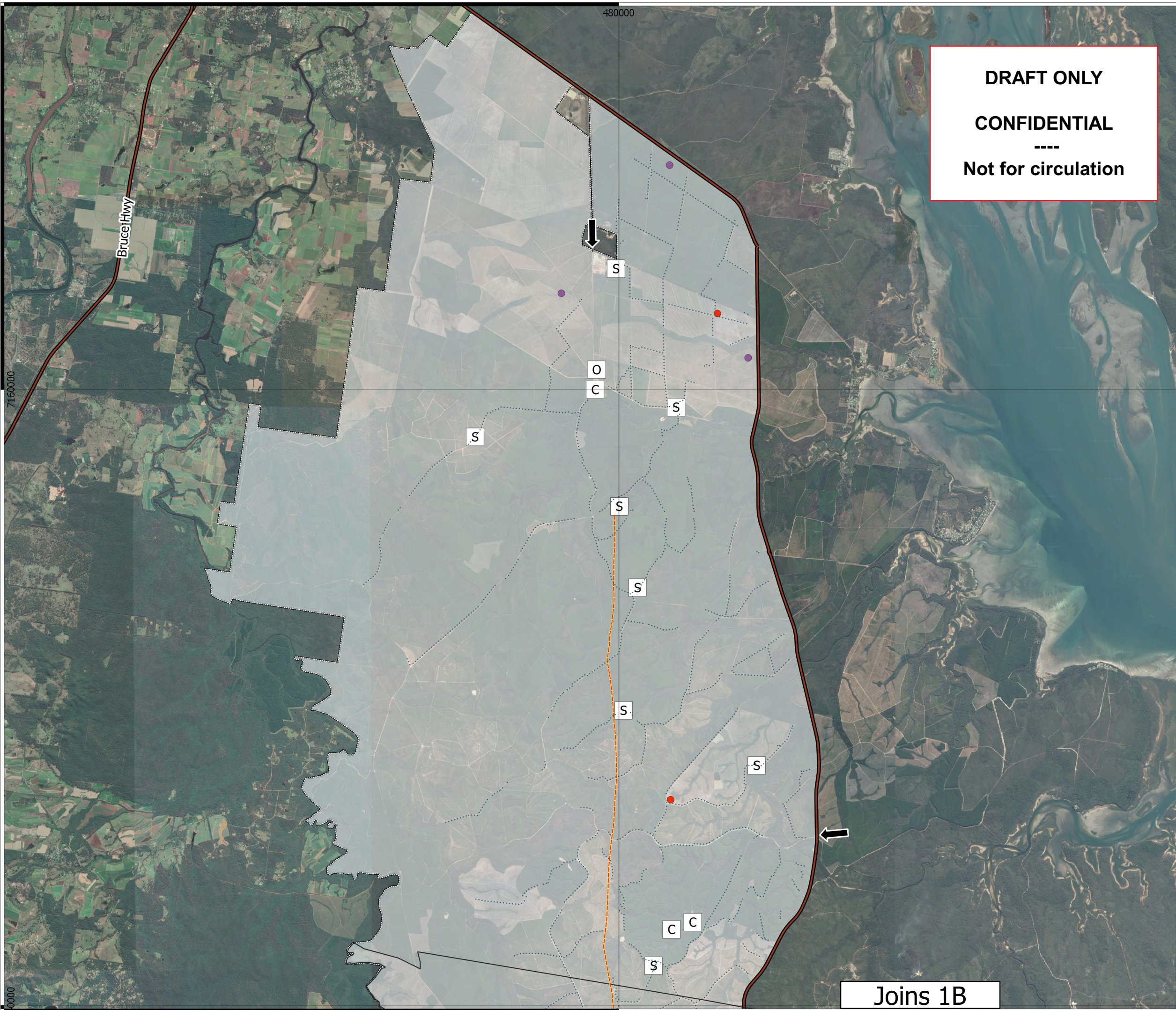
- The assessment on the existing and proposed construction traffic and pavement loadings show that there will be no road sections with traffic or pavement impacts greater than the required 5% impact value (Refer Appendix B for assessment details);
- An oversize vehicle of size 84m can navigate to the Wind Farm site with some minor intersection upgrades, including temporarily removing above ground infrastructure or gravel widening (Refer Appendix C for assessment details);
- A maximum vehicle height of 6.2m can travel to site along the Transport Route with available detours. Without available detours, a maximum vehicle height of 4.25m can be achieved (Refer Appendix C for assessment details);
- DTMR has numerous upgrades planned for the Bruce Highway, either currently being constructed or in planning for the future. An assessment of the impacts resulting from the Bruce Highway upgrades are to be made prior construction when input from the selected contractor can be taken into consideration.

This report is preliminary at this stage. Once the project reaches the detailed design stage of works and a Contractor has been engaged, the results of this report should be re-assessed to either confirm the impact results or provide amended outcomes.



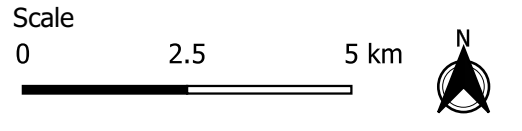
Appendix A – Site Plans

Attached overleaf.



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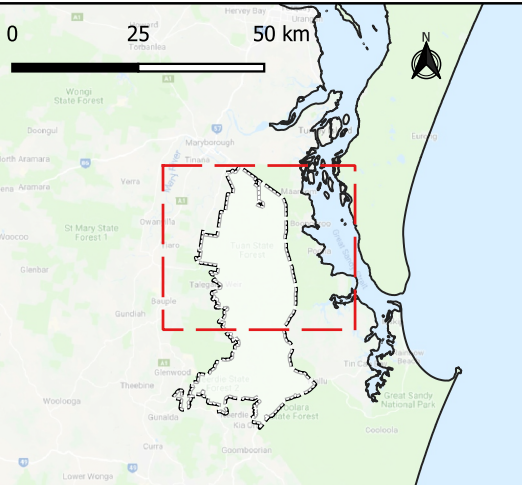


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 Version: DWG042_v01.3_MCU
 Proposal Plan_1A

FIGURE 1A

**MCU Proposal Plan
 Fraser Coast Regional Council Area**

- Legend**
- Wind Turbine Locations (up to 226 within Project Area)*
 - Temporary Meteorological Mast
 - Permanent Meteorological Mast
 - Forest Wind Project Area
 - Council Boundary
 - Overhead Transmission Corridor (within Project Area Boundary)
 - State-controlled Road
 - ➔ Site Entry
 - O Operations Compound Nominal
 - C Construction Compound Nominal
 - S Substation Nominal
- * Note: No more than a total of 226 Wind Turbines will be installed in the nominated Wind Turbine Locations.

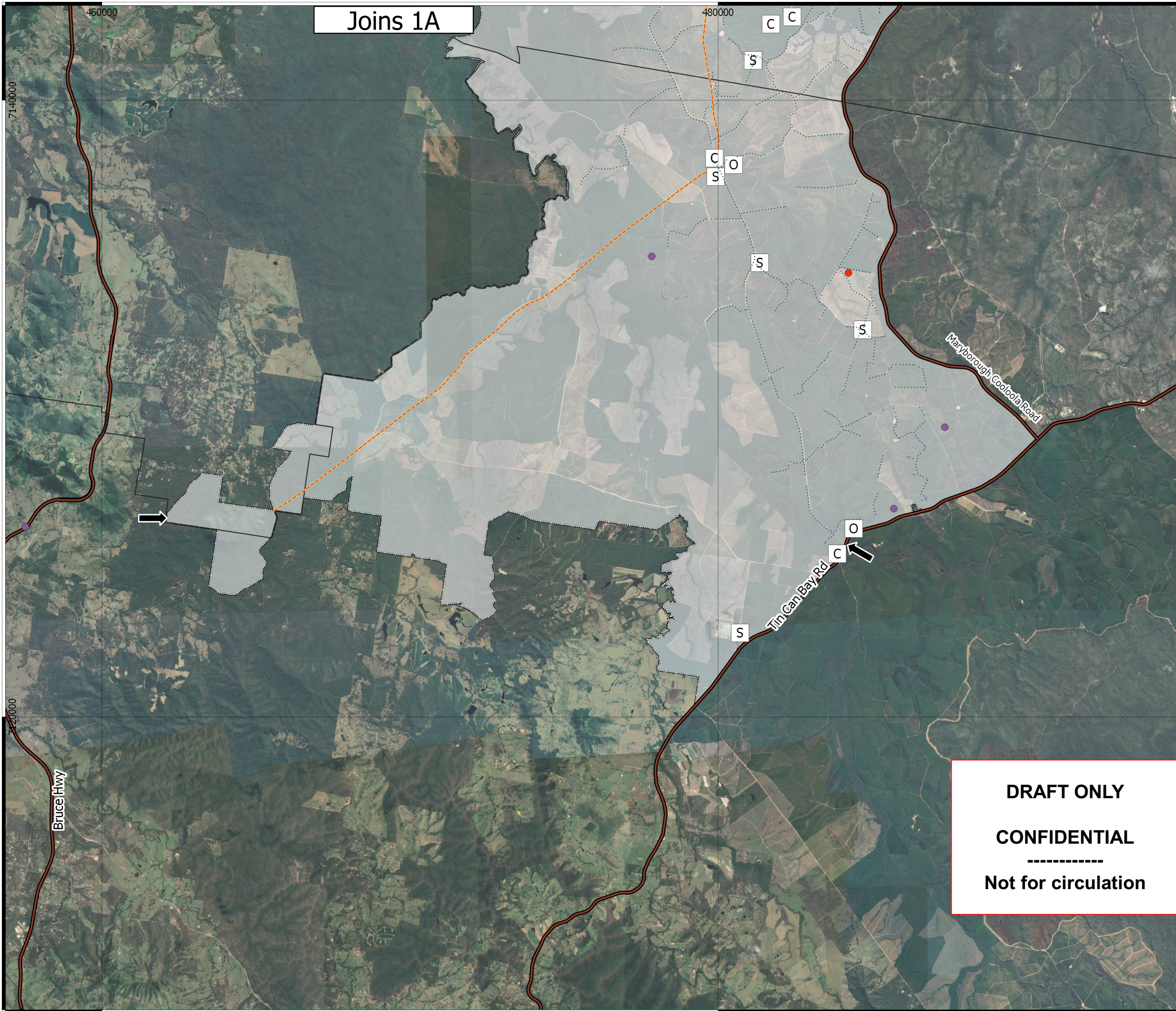


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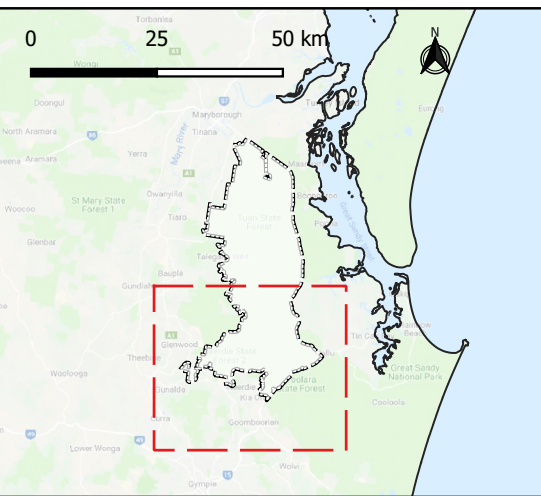
Joins 1B



Joins 1A

**MCU Proposal Plan
Gympie Regional Council Area**

- Legend**
- Wind Turbine Locations (up to 226 within Project Area)*
 - Temporary Meteorological Mast
 - Permanent Meteorological Mast
 - ▭ Forest Wind Project Area
 - ▭ Council Boundary
 - Overhead Transmission Corridor (within Project Area Boundary)
 - State-controlled Road
 - ➔ Site Entry
 - Operations Compound Nominal
 - Construction Compound Nominal
 - Substation Nominal
- * Note: No more than a total of 226 Wind Turbines will be installed in the nominated Wind Turbine Locations.



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