



Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

Prepared by:

SLR Consulting Australia

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
v4.1	5 August 2026	James Cochrane Gareth Davies	Charlie Seventekin	Genelle Abolis

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Mid West Wind Farm Pty (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

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Executive Summary

Mid West Wind Farm Pty (The Proponent) has engaged SLR Consulting Australia Pty Ltd (SLR) to prepare a Transport Impact Assessment (TIA) for the proposed Mid West Wind Farm development in the Mid West Region in Western Australia (WA).

The Proponent proposes the construction and operation of a wind farm with a total generation capacity of 700 megawatts (MW), supplemented by a battery energy storage system (BESS) with a capacity of 700 MW / 4,200 megawatt-hour (MWh). The project site spans a large area of landholdings on either side of Casuarinas Road and is located approx. 50 kilometres (km) east of Geraldton and approx. 420 km north of Perth. The BESS is located on a single landholding on the southern side of Nangetty – Walkaway Road and served by a new site access off that road. This TIA has been prepared to inform the Development Application. Based on the analysis and discussion documented in this report, the following is concluded:

- With the most conservative assumptions, the anticipated traffic generated by the Project during the peak construction phase is 147 vehicle movements in the peak hour and 393 vehicle movements per day, noting that this is a worst-case scenario.
- The anticipated traffic generated during an average construction day is 110 vehicle movements in the peak hour and 279 vehicle movements per day.
- The impacts of the construction traffic can be accommodated by the existing roading infrastructure, such that the Project has a minor effect on the safety and efficiency of the transport network, provided the recommendations below are implemented.
- SLR's review of the turn warrant assessments identified that some intersection upgrades at access locations will be necessary for safe OSOM material transportation.
- The publicly available crash dataset for the surroundings of the development site does not indicate any recurring crash type or theme that would preclude the development or warrant significant safety upgrades.
- Sight distances available at four site locations exceed the requirements of Austroads Guidelines. At the Nangetty – Walkaway Road & Casuarinas Road intersection, sight distances in the westbound direction are insufficient due to vegetation. This vegetation should be trimmed regularly.

The following is recommended:

- Upgrading identified intersections on sealed roads at site access locations to include left-turn or right-turn lanes, as detailed in **Section 9.1** of this TIA.
- A CTMP, consistent with **Section 9.2** of this TIA, is to be prepared following the approval of this application to ensure construction traffic impacts are minimised.
- To minimise gravel migration and maximise road safety, some unsealed side roads should be sealed at key intersections, consistent with **Section 9.3** of this TIA.
- Approvals be obtained for OSOM vehicles, as detailed in **Section 9.4** of this TIA.
- Dilapidation reports to be prepared for review by the assessment agencies, consistent with **Section 9.5** of this TIA.
- Consistent with **Section 9.6** of this TIA, vegetation near the Nangetty – Walkaway Road and Casuarinas Road intersection in the westbound direction be cleared to maintain the required SISK.
- Government consultations be undertaken as detailed in **Section 9.7** of this TIA.



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1.0 Introduction

1.1 Context

Mid West Wind Farm Pty (The Proponent) has engaged SLR Consulting (Australia) Pty Ltd (SLR) to prepare a Transport Impact Assessment (TIA) for the Mid West Wind Farm development (Project) in Mid West, Western Australia.

The Proponent proposes the construction and operation of a wind farm with a total generation capacity of 700 megawatts (MW) supplemented by a 700 MW / 4,200 megawatt-hour (MWh) battery energy storage system (BESS). The project site spans a large area of landholdings on either side of Casuarinas Road. It is located approximately 50 kilometres (km) east of Geraldton and approximately 420km north of Perth.

The proposed wind farm and BESS development will comprise the following:

- An arrangement of 98 wind turbine generators (WTGs) scattered on various land holdings south of Geraldton-Mount Magnet Road and either side of Casuarinas Road, Edwards Road and Nangetty – Walkaway Road.
- A BESS with a total capacity of 700 MW / 4,200 MWh installed on a single land holding located on the southern side of Nangetty-Walkaway Road.
- A new access constructed off Nangetty-Walkaway Road located between Keily Road and Casuarinas Road, providing access to the BESS,
- The construction and operation of one transmission substation and switchyards.
- Installation of electrical collection and conversion systems, including four transformer units, two switchyards, and a control room.
- Ancillary elements such as internal access tracks and temporary construction facilities.

The development plans are provided in **Appendix A**.

1.2 Application

This TIA report assesses the impacts of the proposed development on the surrounding transport networks and evaluates the development's consistency with Council and State planning.

The TIA identifies the transport infrastructure required to support the development and provides an assessment of the traffic and transport aspects of the proposal with respect to the following authorities:

- City of Greater Geraldton.
- Main Roads Western Australia (MRWA).
- Statutory Planning Committee (SPC).
- The Western Australia Department of Planning, Land & Heritage (DPLH).
- Western Australian Planning Commission (WAPC).

1.3 Assessment Scope

The transport assessment matters relevant to the proposed development are outlined in the WAPC TIA Guidelines Volume 4, Individual Developments.



The guidelines checklist is reproduced in **Appendix B** along with a summary response as to how each matter has been considered and addressed.

1.4 Report Structure

The structure of this TIA report is shown in **Table 1**.

Table 1 TIA Report Structure

Section	Title	Description
1	Introduction	Identifies the context of the project.
2	Project Description	Describes the project, including location, site design, and access arrangements.
3	Existing Conditions Appraisal	Describes the existing transport network, including traffic volumes, crash history, bus service, and heavy vehicle routes.
4	Project Traffic Demands	Details the project-generated traffic demands and assessed traffic volumes.
5	Traffic Engineering Considerations	Outlines the technical analysis undertaken to confirm the appropriateness of the Project from a traffic engineering perspective.
6	OSOM Material Route Studies Summary	Outlines the transportation details of oversize and overmass materials required for the project.
7	Construction Traffic Impact Assessment	Outlines the technical analysis to assess the capacity of the site access intersection and the surrounding road network.
8	Construction Traffic Management Strategies	Outlines the possible strategies for the future construction traffic management plan and provides high-level advice.
9	Recommendations	Outlines the recommended actions for the client following the lodgement of the SSD application.
10	Conclusion	Summarises the findings of the assessment and recommends approval conditions.



2.0 Project Description

2.1 Overview

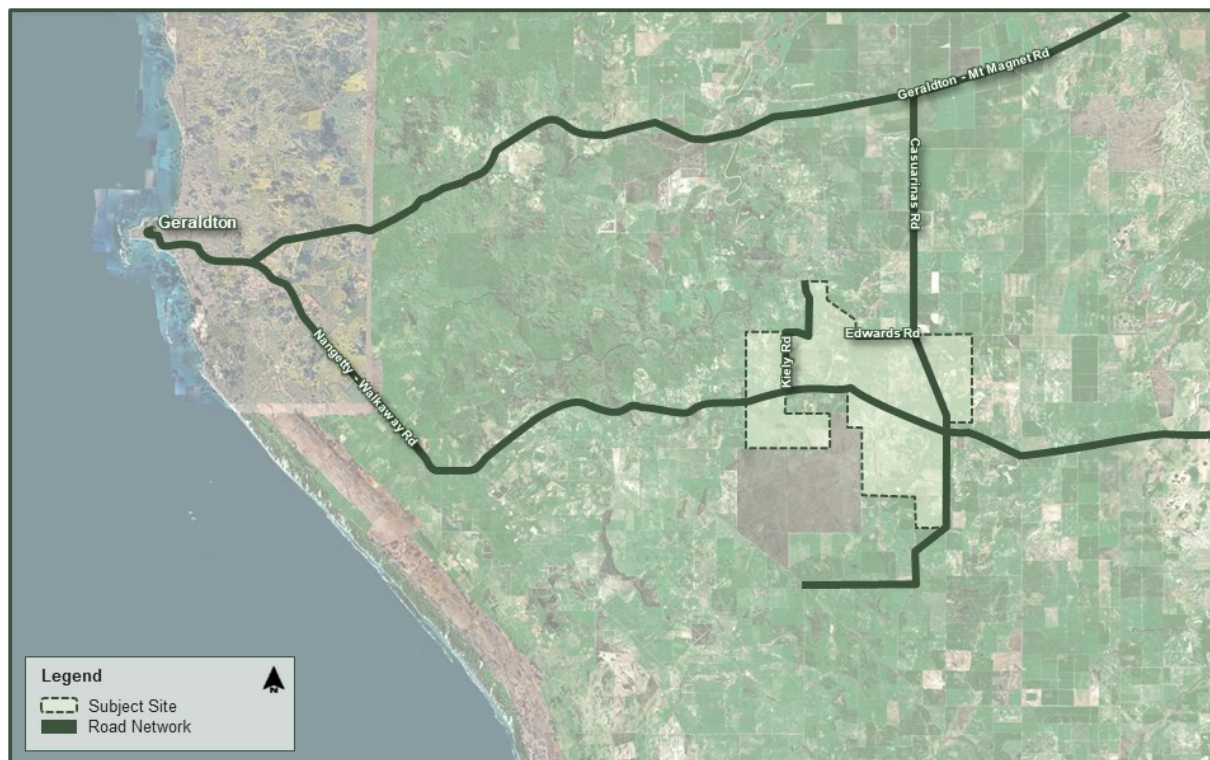
The Project is situated within the Mid West region of WA within the City of Greater Geraldton Local Government Area (LGA). The site area is approximately 50km east of Geraldton and approximately 420km north of Perth.

The site area comprises approximately 730ha of agricultural land. The site area is zoned Rural within the City of Greater Geraldton Local Planning Scheme No. 1 (LPS1).

The site area is south of Geraldton-Mount Magnet Road, east of the Greenough River, west of Erangy Soring Road and north of Allanooka Springs Road. The site area is dissected by Nangetty – Walkaway Road, Casuarinas Road, Edwards Road, Kiely Road and Ambania Road.

The proposed site and surrounding environs are shown in **Figure 1**.

Figure 1 Site Location

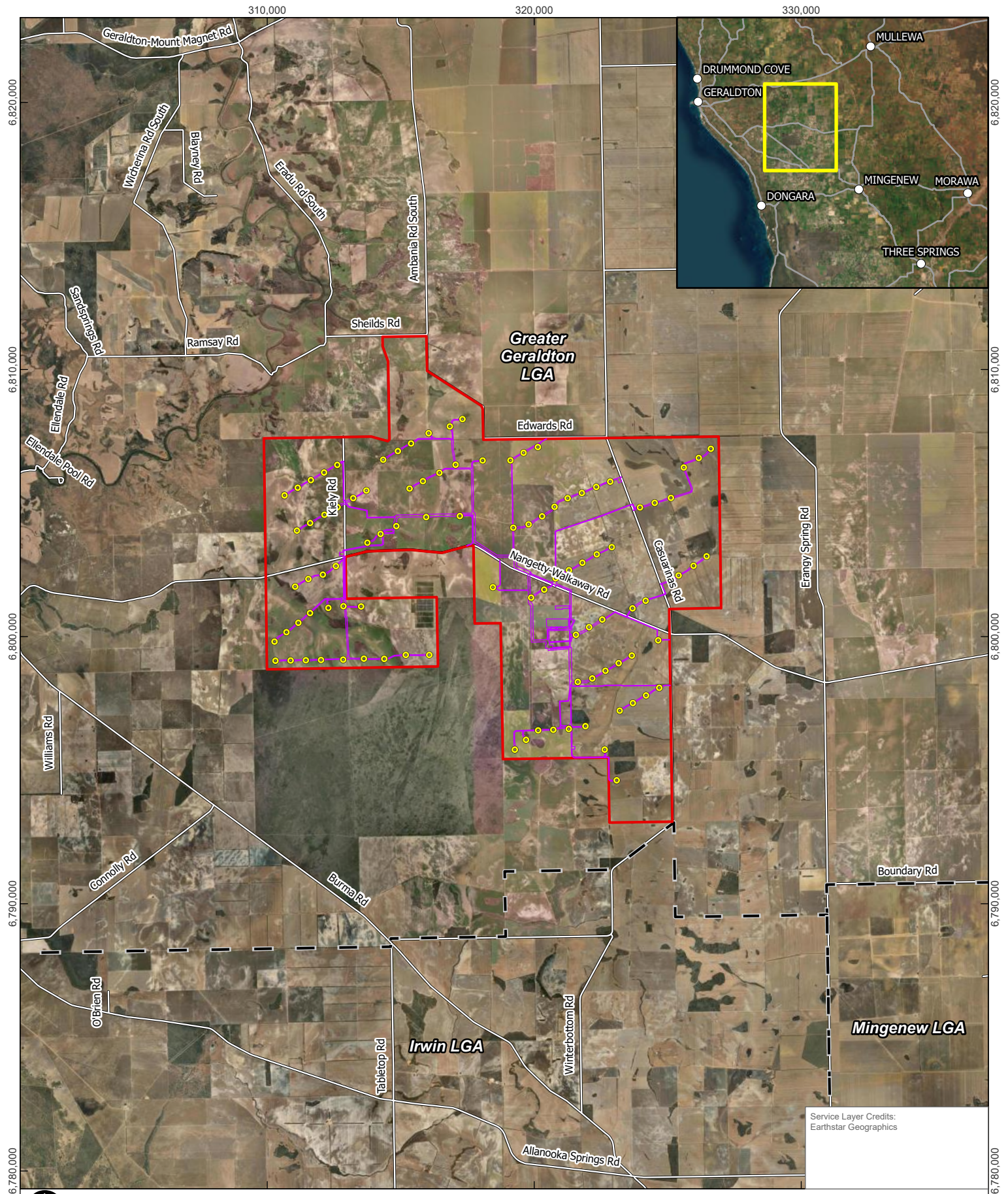


The traffic and transport-related aspects of the proposed 700MW wind farm and 700MW / 4,200 MWh BESS include:

- 98 WTGs with a rotor diameter of 172m (blade length of 84m, weighing approximately 35 tonnes), two substations and an associated switch yard.
- 1,120 battery modules with a storage capacity of 3.75MWh per battery module (weighing approximately 35 tonnes) per module.
- Internal access tracks, hardstands, and temporary construction areas (i.e. lay down).
- Four transformers (between 180 – 250 tonnes).

Figure 2 overleaf provides an indicative layout of the proposed development.





 0 3 6 km
 Coordinate System: GDA2020 MGA Zone 50
 Scale: 1:185,000 at A4
 Project Number: 675.072296.00001
 Date Drawn: 04-Aug-2026
 Drawn by: CP

- LEGEND**
- Project Area
 - Wind Turbine Generator
 - Indicative Disturbance Footprint
 - LGA Boundary
 - Road

- Population Centre
- LGA Boundary
- Road

INDICATIVE PROJECT LAYOUT



DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

FIGURE 2 / APPENDIX A

2.2 Site Access Intersections

All vehicles, including the Oversize and Over Mass (OSOM) materials, will access the site via the following public roads:

- Casuarinas Road (right turn off Geraldton-Mount Magnet Road) in the southbound direction.
- Kiely Road (left turn off Nangetty – Walkaway Road) in the northbound direction.
- Casuarinas Road (right turn off Nangetty – Walkaway Road) in the southbound direction.
- Casuarinas Road (left turn off Nangetty – Walkaway Road) in the northbound direction.
- An upgraded vehicle access off Nangetty – Walkaway Road, between Kiely Road and Casuarinas Road, serving the BESS (both directions).

Detailed information on construction vehicle and workforce access is provided in the following section.

2.2.1 Material Transportation Routes

It is anticipated that all non-OSOM and OSOM materials will originate from Geraldton. The WTG and BESS components will be imported from overseas suppliers to the Port of Geraldton and transported via road freight to the project site. OSOM vehicles include the following indivisible materials:

- WTG components such as blades and tower sections.
- Transformers and switchgear.
- Battery modules.

Two OSOM transport routes have been identified from the Port of Geraldton to the development site:

- Route 1, via predominantly the state road network, including Geraldton-Mount Magnet Road.
- Route 2, via the local road network, including Nangetty – Walkaway Road.

Detailed OSOM material route studies have been conducted for the two transport routes to identify OSOM-enabling works, determine the impacts on the road network, and determine if any, upgrades are required for the existing infrastructure. The OSOM vehicles require permits specifying the designated route, escorts, and permitted travel times.

The proposed two OSOM material transport routes are shown overleaf in **Figure 3**.



Figure 3 Proposed OSOM Material Transport Routes



The detailed OSOM material (turbine blades, towers and battery modules) transportation route studies are provided in **Appendix C**. Details about the transportation of the transformer are provided in the following section.

2.2.2 Transportation of the Transformer

Based on the discussions undertaken with the Client, it is understood that each of the four transformers required for the proposed wind farm and BESS will weigh approximately 180-250 tonnes. On this basis, SLR has identified that several prime movers will be required.

Based on SLR's prior project experience, it is anticipated that the entire transformer package (loaded on a beam set) would be 11m long x 4.5m wide x 4.5m high for the purposes of transportation. With the addition of platform trailers and several prime movers, the transformer convoy can be as long as 100m. However, at constrained locations, the number of prime movers will be reduced to increase manoeuvrability.

Given that the height of the transformer is beyond the typical 4.3m vertical clearances in the WA road network, SLR reviewed the MRWA's RAV mapping tool¹². Through this review, SLR identified that both routes from the Port of Geraldton to the development site are free of low overhead structures and, therefore, feasible.

On this basis, SLR has concluded that vertical clearances will not be an issue for the transformer transportation.

¹ <https://portal-mainroads.opendata.arcgis.com/pages/hvs-networks>

² <https://portal-mainroads.opendata.arcgis.com/search?tags=Oversize%2520Networks>



2.2.3 Railway Corridors and Level Crossings

SLR studied both route options using the MRWA open data source of railway crossings. SLR's analysis is detailed in the OSOM material transportation route study, which is provided in **Appendix C**.

2.2.4 Workforce Transportation Routes

All workforce transportation is anticipated to originate from the available hotels, motels and campsites in and around Geraldton. The workers will take either Geraldton-Mount Magnet Road or Nangetty – Walkaway Road, depending on which part of the development site they travel to (also subject to the phase of construction activities). This will be detailed in a post-approval construction traffic management plan (CTMP) report.

2.3 Project Program

2.3.1 Construction Phase

The Proponent has advised that the development will be constructed over a 30-month period, with construction commencing in 2028. It is anticipated that construction works will be undertaken at a non-linear rate, with a ramp-up and a ramp-down of construction works. Therefore, a non-linear traffic generation estimate has been considered for the construction movements associated with transporting materials, equipment, workforce and demobilisation activities. On this basis, SLR has derived a peak construction traffic generation estimate and an average construction traffic generation estimate.

It is important to note that the construction phase of a wind farm has the largest traffic impacts compared to its impacts during the operation and demobilisation phases. Based on this, no detailed assessments are undertaken for the operational and demobilisation phases.

2.3.2 Operation & Decommissioning Phase

Once established, the development is expected to operate for at least 25+ years, with an option for repowering and structural inspection to extend the life by an additional 10+ years, providing short-, medium- and long-term local employment and procurement opportunities.

The Project's operational phase will have significantly lower traffic generation than the construction period, with only 15 operational staff members and infrequent additional vehicles associated with maintenance, services, minor works, and delivery of parts.

The Proponent has committed to decommissioning and rehabilitating the site at the end of its operational life. Decommissioning would include disassembly and removal of the associated infrastructure, returning the land to its original use (agricultural).

Detailed assessment has not been undertaken for the operational phase of the Project, as traffic volumes would fall below those assessed by this report associated with the Project's Construction Phase. Similarly, a detailed assessment has not been undertaken for the decommissioning phase of the Project, as it occurs beyond the typical design horizon considered in transport assessments in Australia.



2.4 Construction Phase Traffic Activities

2.4.1 Activities

For the purposes of forecasting peak development traffic demands associated with the construction stage, the following construction activities are anticipated to generate traffic on the external road network:

- Site clearance and establishment.
- Construction machinery deliveries.
- Equipment and material deliveries.
- Workforce transportation.

2.4.2 Workforce

There are anticipated to be a maximum of 300 persons on-site, however for a conservative assessment, SLR's traffic analysis has been undertaken for 400 person on-site at any given time with the following assumptions:

- 300 persons for the wind farm construction and 100 persons for the BESS construction.
- Peak activities of the wind farm and the BESS constructions to overlap.

The assumed workforce of 400 persons comprises 370 labourers (280 labourers for the wind farm and 90 labourers for the BESS) travelling via Toyota Coaster buses and 30 supervisors (20 supervisors for the wind farm and 10 supervisors for the BESS) travelling to the site via private light vehicles. For a detailed breakdown of workforce assumptions, refer to:

- **Table 22 in Appendix F** – wind farm workforce assumptions.
- **Table 27 in Appendix G** – BESS workforce assumptions.

This represents the highest volume of personnel potentially on-site at a given time. On a typical day, there will likely be fewer workers on site. However, for a conservative assessment, it has been assumed that there will be 400 workers accessing the site throughout the duration of the construction period.

2.5 Operation Phase Traffic Activities

2.5.1 Activities

Once the proposed development is operational, there will be no activities that require large numbers of workers on-site. It is understood that for the majority of the development's life, operations will involve a range of preventative, corrective and condition-based maintenance activities, which would entail various maintenance, inspection and servicing for the turbines and BESS components, the associated electrical network and internal road infrastructure. The external movements associated with these tasks will generally be performed by 5.2m long B99 VANs, 6.4m long small rigid vehicles (SRVs) and 8.8m long medium rigid vehicles (MRVs).

2.5.2 Workforce

15 full-time equivalents (FTE) staff are anticipated to be on-site during the operation phase. Although there will likely be fewer workers on site on a typical day, for a conservative assessment, it has been assumed that there will be 15 FTE workers on site throughout the project's operation phase.



3.0 Existing Conditions Appraisal

3.1 MRWA Road Hierarchy

The Western Australian Road Hierarchy is a comprehensive system developed by MRWA in cooperation with local governments. It categorises roads based on their roles and traffic management needs. A summary of the hierarchy is provided in **Table 2**.

Table 2 MRWA Road Hierarchy

Road Type	Description	Management	AADT
Primary Distributor	Major regional and inter-regional roads, including freeways and highways.	MRWA	Above 8,000 vehicles/ day
Regional Distributor	Roads linking significant destinations within and beyond regional areas.	Local governments	Above 6,000 vehicles/ day
District Distributor A	Roads connecting industrial, commercial, and residential areas, often truck routes.	Local governments	Above 6,000 vehicles/ day
District Distributor B	Similar to District Distributor A but with more property accesses and roadside parking.	Local governments	Greater than 100 vehicles/ day
Local Distributor	Roads within local areas connecting to higher-order distributors.	Local governments	Built Up Area: Up to 6,000 vehicles/ day Non Built Up Area: Up to 100 vehicles/ day
Access Road	Roads providing access to properties, prioritising safety, and local access.	Local governments	Built Up Area: Up to 3,000 vehicles/ day Non Built Up Area: Up to 75 vehicles/ day

3.2 Surrounding Road Network

The characteristics of the road network surrounding the site are summarised in **Table 3**.

Table 3 Surrounding Road Network Summary

Road Name	Jurisdiction	Classification	ADWT*	HV%**	Speed Limit	Condition
Geraldton-Mount Magnet Rd	Main Roads WA	Primary Distributor***	787	48.4%	80-90km/h built up area, 110km/h	Sealed
Nangetty – Walkaway Rd (east of Walkaway)	The City of Greater Geraldton	Regional Distributor	258	22.5%	110km/h	Sealed
Casuarinas Rd		Access Road	N/A	N/A	Unposted	Unsealed
Kiely Rd		Access Road	N/A	N/A	Unposted	Unsealed
Edwards Road		Access Road	N/A	N/A	Unposted	Unsealed

Source: <https://trafficmap.mainroads.wa.gov.au/map>

* Average Daily Weekday Traffic

** Heavy Vehicle Percentage

*** Primary Distributor, despite having an ADWT much less than 8,000, as shown in **Table 3**.



3.2.1 State-Controlled Roads

Geraldton-Mount Magnet Road is a sealed two-lane, two-way road classified by MRWA's Road Hierarchy as a "*Primary Distributor Road*". The current reported AADT is 787 vehicles per day within the Project's vicinity, including 48.4% of heavy commercial vehicles. The existing sealed width is around 9m, comprising approximately 3.5m wide lanes and approximately 1m wide sealed shoulders.

Figure 4 below shows the general layout of Geraldton-Mount Magnet Road at the intersection of Casuarinas Road.

Figure 4 Geraldton-Mount Magnet Road (Facing West – 20/08/2024)

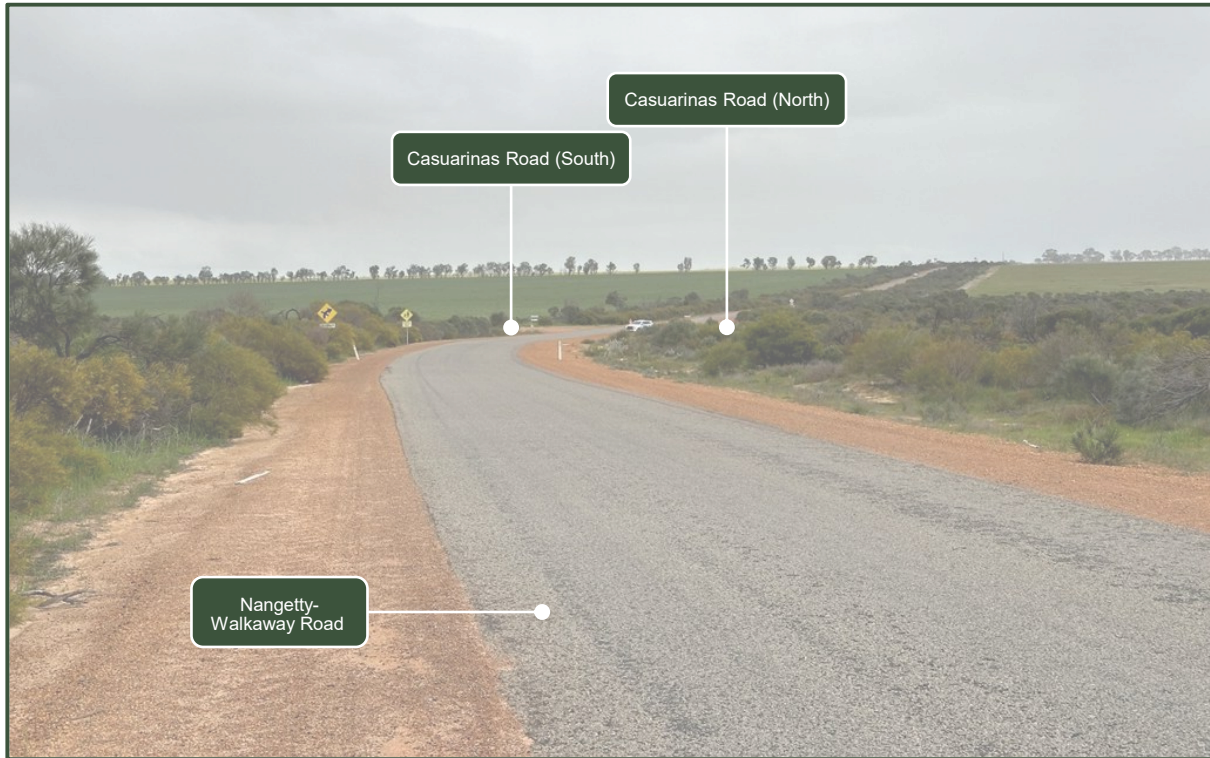


3.2.2 Council Controlled Roads

Nangetty Road – Walkaway is a sealed two-lane, two-way road classified by MRWA's Road Hierarchy as a "*Regional Distributor Road*". The current AADT is 258 vehicles per day within the Project's vicinity, including 22.5% of heavy commercial vehicles. The existing sealed carriageway is 6m with no centreline and unsealed shoulders. **Figure 5** overleaf shows the general layout of Nangetty – Walkaway Road near the intersection of Casuarinas Road. It is noted that **Figure 5** overleaf shows the extent of the available sight distance (discussed in **Section 5.1**) obstructed by vegetation (more on this in **Section 5.1.2**).



Figure 5 Nangetty – Walkaway Road (Facing West – 20/08/2024)



Casuarinas Road is an unsealed two-lane, two-way road classified by MRWA's Road Hierarchy as an "Access Road". The existing unsealed carriageway is approximately 15m. **Figure 6** below shows the general layout of Casuarinas Road.

Figure 6 Casuarinas Road (Facing South – 20/08/2024)



Kiely Road is an unsealed two-lane, two-way road classified by MRWA's Road Hierarchy as an "Access Road". The existing unsealed carriageway is approximately 12m. **Figure 7** overleaf shows the general layout of Kiely Road.

Figure 7 Kiely Road (Facing North – February 2024)



Source: <https://www.google.com/maps>

Edwards Road is a partially formed, unsealed, two-lane, two-way road classified by MRWA's Road Hierarchy as an "Access Road". The formed portion of the road extends approximately 800m from the intersection of Casuarinas Road before tapering off to a partially formed one-way road. The existing formed carriageway is approximately 7.5m, whereas the partially formed section is approximately 4.5m in rough condition. **Figure 7** overleaf shows the general layout of Edwards Road near the Nangetty – Walkaway Road intersection.



Figure 8 Edwards Road (Facing West – 20/08/2024)



3.2.3 Intersections

3.2.3.1 Geraldton-Mount Magnet Road/ Casuarinas Road

The Geraldton-Mount Magnet Road/ Casuarinas Road intersection is shown in **Figure 9** overleaf. The current form is a priority-controlled three-leg priority with no turning treatment.



Figure 9 Geraldton-Mount Magnet Road/ Casuarinas Road Layout



3.2.3.2 Nangetty – Walkaway Road/ Casuarinas Road

The Nangetty – Walkaway Road/ Casuarinas Road intersection is shown in **Figure 10** overleaf. The current form is a priority-controlled staggered four-leg priority with no turning treatments.



Figure 10 Existing Nangetty – Walkaway Road/ Casuarinas Road Layout

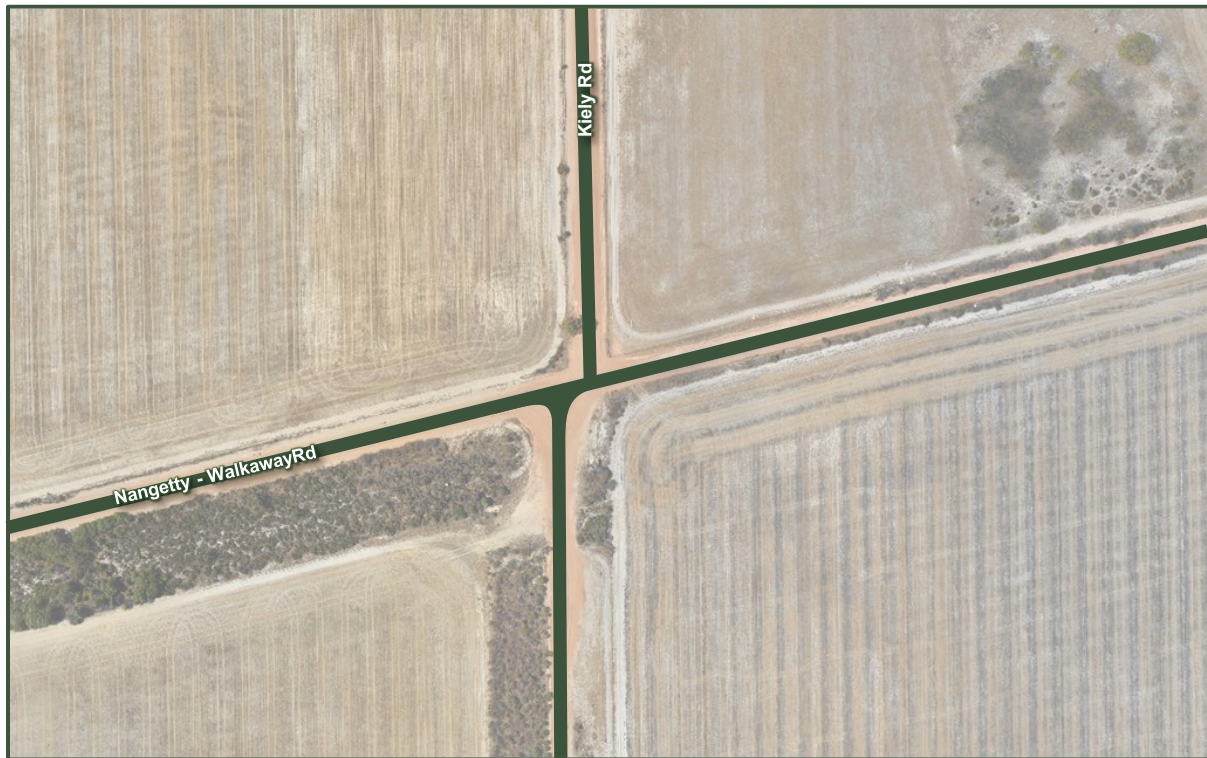


3.2.3.3 Nangetty – Walkaway Road/ Kiely Road

The Nangetty – Walkaway Road/ Kiely Road intersection is shown in **Figure 11** overleaf. The current form is a priority-controlled staggered four-leg priority with no turning treatments.



Figure 11 Existing Nangetty – Walkaway Road/ Kiely Road Layout

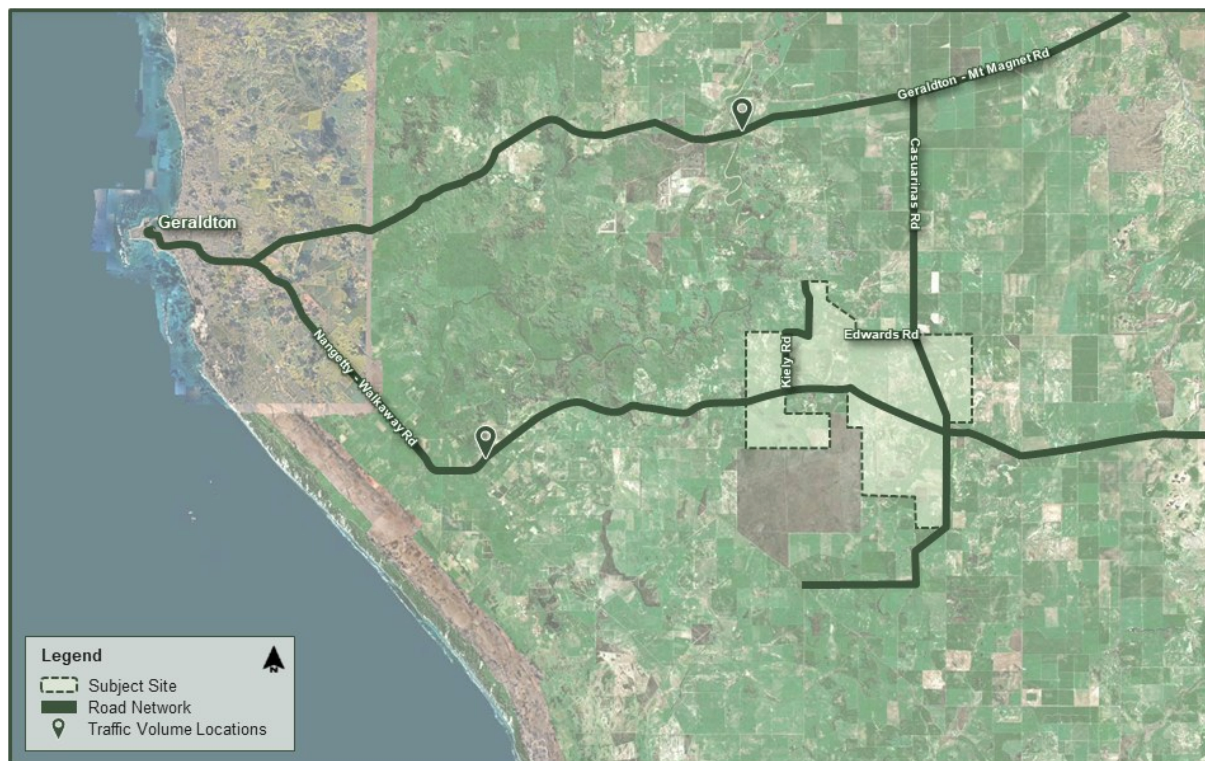


3.3 Existing Traffic Volumes

The current traffic demands near the development site were retrieved using MRWA's Traffic Map. The latest traffic data was taken from the closest counters, as shown below in **Figure 12** and **Table 4**.



Figure 12 Traffic Volume Counter Locations (MRWA Traffic Map Website)



The traffic data is also summarised in **Table 4** below.

Table 4 Traffic Survey Peak Hour Volumes

Counter	Data Year	Peak	No. Eastbound Vehicles (Heavy Vehicle %)	No. Westbound Vehicles (Heavy Vehicle %)
Geraldton-Mount Magnet Rd (ID 52992)	2022/2023	AM (7:00-8:00)	45 (48.9%)	17 (41.2%)
	2022/2023	PM (16:00-17:00)	21 (38.1%)	44 (52.3%)
Nangetty – Walkaway y Rd (ID 53979)	2023/2024	AM (9:00-10:00)	13 (30.8%)	12 (33.3%)
	2023/2024	PM (13:00-14:00)	11 (18.2%)	15 (26.7%)

The traffic volumes were sourced on 19/02/2025 from the MRWA traffic map website.

The detailed traffic data is provided in **Appendix D**.

3.4 Road Safety Record

Historical crash data have been extracted from MRWA's Integrated Road Information System to highlight any safety deficiencies in the surrounding road network near the subject site. The search area includes the likely haulage routes described in **Section 2.2.1**. Crashes are reported for the latest five-year period (between 2019 and 2023).

The locations of the reported crashes are illustrated in **Figure 13** and summarised in **Table 5** overleaf, with details of crashes provided in **Appendix E**.



Figure 13 Crash History & Locations (2019-2023)

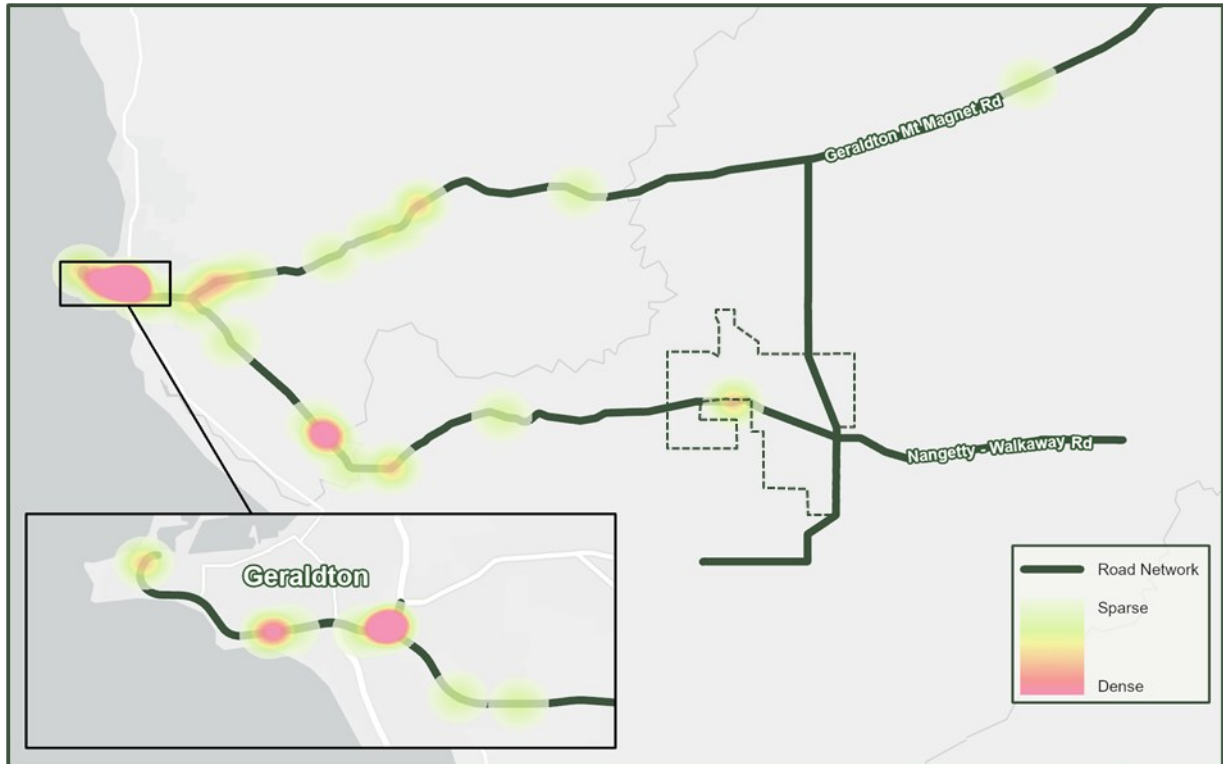


Table 5 Crash History & Locations (2019 – 2023)

Crash road	Fatal	Hospital/Medical	PDO	Totals
Geraldton Mt Magnet Rd	0	5	8	13
North West Coastal Hwy	0	1	7	8
John Willcock Link	0	2	4	6
Nangetty – Walkaway Rd	2	5	4	11
Total	2	13	23	38

A total of 38 incidents were recorded, resulting in two fatalities, 13 hospitalisations or requiring medical treatment, and 23 property damage only injuries, including:

- Two (5%) incidents at John Willcock Link and Marine Terrace.
- Three (8%) incidents at the intersection of John Willcock Link and Willcock Drive.
- One (3%) incident occurred on the midblock on John Willcock Link between North West Coastal Highway and Willcock Drive.
- Two (5%) incidents occurred on the midblock on North West Coastal Highway between John Willcock Link and Geraldton-Mt Magnet Road.
- Six (16%) incidents at the intersection of Geraldton-Mt Magnet Road and North West Coastal Highway.
- Three (8%) incidents occurred on the midblock on Geraldton-Mt Magnet Road between North West Coastal Highway and Geraldton-Walkaway Road.



- 10 (26%) incidents occurred on the midblock on Geraldton-Mt Magnet Road east of Edward Road.
- Six (16%) incidents occurred on the midblock on Geraldton-Walkaway Road between Geraldton-Mt Magnet Road and Evans Road, including one fatality.
- One (3%) incident occurred at the intersection of Geraldton-Walkaway Road & McCartney Road, resulting in a fatality.
- Two (5%) incidents occurred on the midblock on Nangetty – Walkaway Road east of Allanooka Springs Road.
- Two (5%) incidents at the intersection of Nangetty – Walkaway Road and Allanooka Springs Road.

The incidents reported are spatially separated and involve a variety of crash types. The road safety record search area suggests that there is no identifiable crash pattern.

3.5 Infrastructure Planning

To determine the location and nature of any planned upgrades of the surrounding road network, a review of publicly available material was undertaken. The review indicated that there are transport infrastructure upgrades planned by MRWA and/or Council in the surroundings of the study area, including:

- Upgrading the Nangetty – Walkaway Road/ Greenough River-Walkaway Bridge³ (completed October 2025).
- Upgrading Geraldton-Mount Magnet Road⁴ to increase the road width, extend overtaking lanes, and Eradu Bridge replacement (unfunded, unknown timing).

³ <https://www.cgg.wa.gov.au/your-council/major-projects/nangetty-walkaway-road-bridge.aspx>

⁴ [Geraldton Mt Magnet Road Upgrade Summary Assessment Report, Infrastructure WA \(December 2023\)](#)



4.0 Project Traffic Demands

4.1 Traffic Generation

4.1.1 Construction Phase Traffic Assumptions

A traffic generation determination exercise has been undertaken to estimate the construction traffic generation potential of the proposed 700MW wind farm and 700MW / 4,200 MWh BESS based on the Proponent and SLR's experience of similar-scale wind farms. The construction traffic generation methodology and the associated project schedule are provided in detail in **Appendix F**.

An upper limit of 100 WTGs was adopted for a conservative assessment, noting that 98 WTGs are currently proposed. **Table 6** below summarises the traffic movements anticipated during the wind farm's construction phase, including the average construction traffic anticipated on a typical day and the peak construction traffic anticipated during the peak of the construction works.

Table 6 Construction Traffic Generation Potential (Wind Farm Component)

Vehicle Type	Average Movements per Day		Peak Movements per Day	
	Daily (vpd)	Peak Hour (vph)	Daily (vpd)	Peak Hour (vph)
Light Vehicles	30	15	40	20
Buses	20	10	30	15
Heavy Vehicles	110	40	180	60
Total	160	65	250	95
OSOM	2	1	5	5

Table 7 below summarises the traffic movements anticipated during the BESS's construction phase, including the average construction traffic anticipated on a typical day and the peak construction traffic anticipated during the peak of the construction works.

Table 7 Construction Traffic Generation Potential (BESS Component)

Vehicle Type	Average Movements per Day		Peak Movements per Day	
	Daily (vpd)	Peak Hour (vph)	Daily (vpd)	Peak Hour (vph)
Light Vehicles	15	10	20	10
Buses	10	5	10	5
Heavy Vehicles	70	25	125	40
Total	95	40	155	55
OSOM	2	1	5	5

Table 8 below summarises the total traffic movements anticipated during the whole project's construction phase, consisting of both the wind farm and BESS construction phases, including the average construction traffic anticipated on a typical day and the peak construction traffic anticipated during the peak of the construction works.



Table 8 Summary of Total Construction Traffic

Vehicle Type	Average Movements per Day		Peak Movements per Day	
	Daily (vpd)	Peak Hour (vph)	Daily (vpd)	Peak Hour (vph)
Light Vehicles	45	25	60	30
Buses	30	15	40	20
Heavy Vehicles	180	65	305	100
Total	255	105	405	150
OSOM	4	2	10	10

SLR's assessment above conservatively assumes that all staff movements occur in a single hour period, which is not expected to occur in practice, but nevertheless has been adopted to provide road authorities confidence that a worst-case assessment has occurred.

Accordingly, during the peak construction times, the site will have around 405 vehicle movements daily. In the earlier (ramp-up) and later (ramp-down) stages of the construction period, this is anticipated to be an average of 255 vehicle movements per day.

In addition to the above construction traffic, a significant number of OSOM vehicle movements are required to transport the indivisible loads described in **Section 6.0**.

It is anticipated that a total of approximately 2,310 OSOM vehicle movements will be required to construct the entire project, broken down as follows:

- approximately 1,300 OSOM vehicle movements will be required to construct the wind farm (100 WTGs).
- approximately 1,000 OSOM vehicle movements will be required to construct the BESS, noting that BESS enclosures are considered OSOM materials (22.81m long x 3.5m wide gooseneck trailer is envisaged for transportation).
- approximately 10 OSOM vehicle movements to build the substations and switch yards (including transformers).

These deliveries are anticipated to occur linearly across the assumed 22-month construction period "peak", equating to approximately 25 OSOM deliveries per week or approximately 5 OSOM deliveries per day.

It is noted the construction of the BESS is assumed to occur concurrently with the wind farm construction and therefore over the same construction duration.

4.1.2 Operation Phase Traffic Generation

Wind farms and BESS developments are low-maintenance facilities. Operational traffic demands associated with the development are, therefore, expected to be minimal and limited to the maintenance crew's movements. On this basis, the operational traffic of this development is not considered a critical element within this traffic assessment. Nonetheless, the operational workforce assumptions are provided in **Table 9** overleaf for completeness.



Table 9 Operational Workforce

Element	Assumption
Ad hoc Workforce	15 persons
Anticipated Fleet	Light vehicles, Disposal trucks (Small and Medium Rigid Vehicles)
Distribution	100% to/from West

In addition to the typical maintenance requirements of the wind farm, it is likely that replacement sections for the WTG, such as blades and replacement battery modules for the BESS, will be required infrequently throughout the life of the Project. These deliveries will be subject to appropriate approvals (updated route study, TMP, etc.) at such time.

4.1.3 Decommissioning Phase Traffic Generation

Currently, information on the proposed development's decommissioning traffic is unavailable; however, it is known that the largest OSOM materials, turbine blades and tower segments, will be disassembled into several pieces before being transported to the designated recycling centres. It is also worth noting that a typical wind farm operates for more than 25 years, which is beyond the scope typically assessed as part of a TIA.

The BESS may have a shorter design life than the wind farm, with battery modules typically requiring replacement or augmentation after approximately 20 years of operation. Battery replacement would therefore occur within the operational life of the wind farm rather than at decommissioning. Replacement modules would be delivered by the same low loader fleet described in **Section 6.0** and would be subject to an updated route study and traffic management plan at that time. Replacement is expected to be staged over an extended period and would generate traffic volumes well below those assessed for the construction phase. Decommissioning of the BESS at the end of its life would follow the same approach as the wind farm, with materials disassembled on site and transported to designated recycling facilities.

4.2 Cumulative Traffic Impacts

A review of the publicly available information identified that no other proposed large-scale projects would commence construction or operation in the surroundings of the Project site, which could result in exponential traffic growth in the vicinity.



5.0 Traffic Engineering Considerations

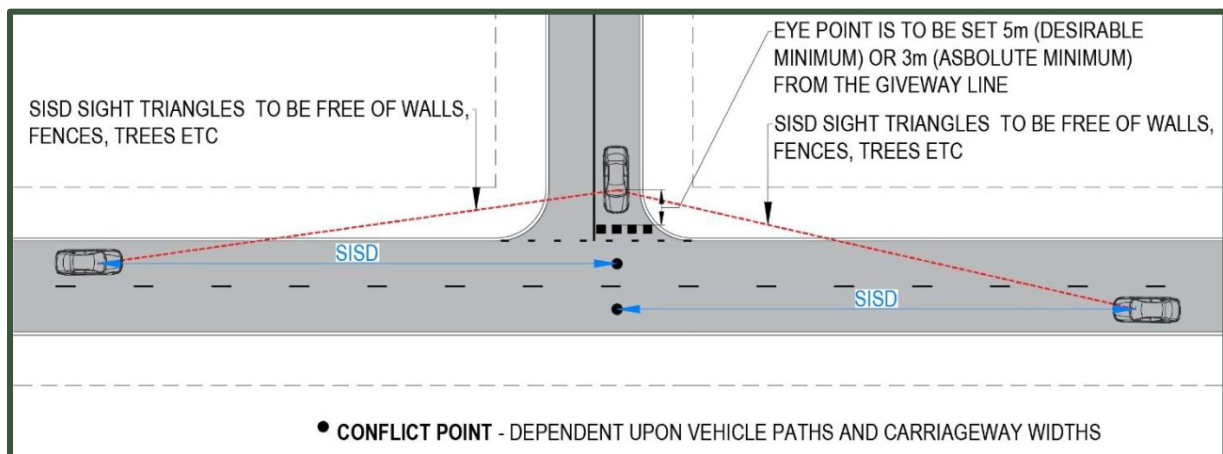
5.1 Sight Distance Assessments

A sight distance assessment was undertaken for each of the existing intersections in accordance with:

- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (AGRD-4A-23).
- MRWA Supplement AGRD-4A-23 (AGRD-4A Supplement) (July 2025).

Safe Intersection Sight Distance (SISD) is the minimum sight distance that should be provided on the major road at any intersection, providing sufficient distance for a driver of a vehicle on the major road to observe a vehicle on the minor road moving into a collision situation (e.g. in the worst case, stalling across the traffic lanes), and to decelerate to a stop before reaching the collision point as depicted in **Figure 14**.

Figure 14 MRWA Supplement 4A SISD



Source: Adapted from MRWA Supplement 4A

The Safe Intersection Sight Distance (SISD) is determined in *Section 3.2.2* of AGRD-4A-23. The formula applied is illustrated in **Equation 1**.

Equation 1 SISD Formula (AGRD Part 4A)

$$SISD = \frac{D_T \times V}{3.6} + \frac{V^2}{254 \times (d + 0.01 \times a)}$$

where

SISD = safe intersection sight distance (m)

D_T = decision time (sec) = observation time (3 sec) + reaction time (sec) – refer to *AGRD Part 3* (Austroads 2016b) for a guide to values

V = operating (85th percentile) speed (km/h)

d = coefficient of deceleration – refer to Table 3.3 and *AGRD Part 3* for a guide to values

a = longitudinal grade in % (in direction of travel: positive for uphill grade, negative for downhill grade)



5.1.1 SISD Calculations

Table 10 summarises the SISD for the intersections utilising **Equation 1**. SLR has adopted the recommended design speeds by Austroads Guidelines (10km/h above the posted and unposted speed limit).

Table 10 Access Location SISD and Parameters

Intersection	Approach	O _T (s)	R _T (s)	V (km/h)	d	a (%)	SISD(m)
Geraldton-Mount Magnet Rd/ Casuarinas Rd	West	3	2.5	120	0.36	0	341
	East						
Nangetty – Walkaway Rd/ Casuarinas Rd (North Leg)	West						
	East						
Nangetty – Walkaway Rd/ Casuarinas Rd (South Leg)	West						
	East						
Nangetty – Walkaway Rd/ Kiely Rd	West						
	East						
Nangetty – Walkaway/ BESS Site Access	West						
	East						

Table 11 below provides a justification for the applied parameters in the SISD calculations adopted in **Table 10**.

Table 11 SISD Parameter Justification

Parameter	Justification
O _T (s)	An observation time of 3 seconds was adopted as per AGRD 4A Supplement.
R _T (s)	A reaction time of 2.5 seconds was adopted as per AGRD 4A Supplement.
V (km/h)	The 85 th percentile operating speed at the access is assumed to be 10km/h above the posted limit. Based on this, an 85 th percentile speed of 120km/h was adopted.
d	A coefficient of deceleration of 0.36 was adopted as per AGRD 4A Supplement.
a (%)	The following average longitudinal grades were assumed: West Approach: 0%. East Approach: 0%.

5.1.2 SISD Assessment

The observed sight distance was determined using results obtained from a field investigation conducted on 20 August 2024. The results from the field investigation were verified with calculated sight distances using aerial imagery, and the dashboard camera footage obtained during the site visit was reviewed. **Table 12** summarises SLR's SISD assessment.

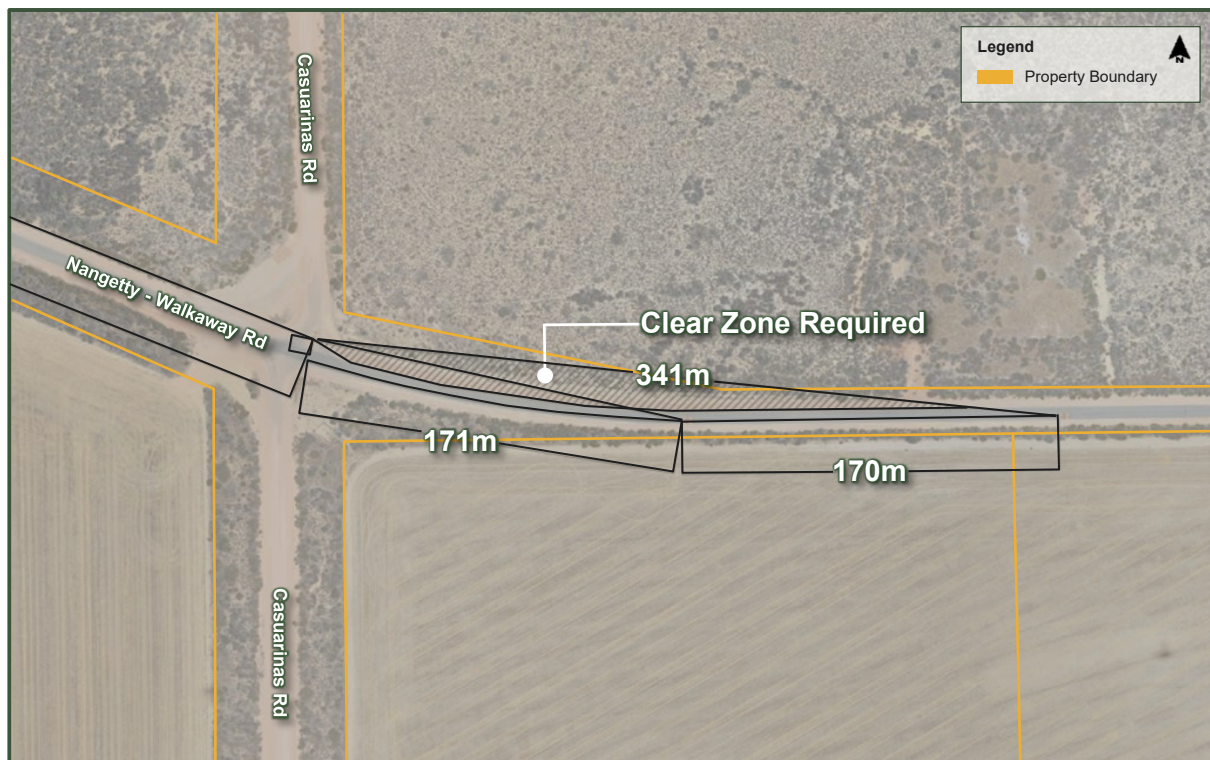


Table 12 SISD Assessment

Intersection	Approach	SISD	Observed SISD	Assessment
Geraldton-Mount Magnet Rd/ Casuarinas Rd	West	341 m	1400 m	Complies
	East		480 m	Complies
Walkaway-Nangetty Rd/ Casuarinas Rd (North Leg)	West		950 m	Complies
	East		171 m	Does not comply
Walkaway-Nangetty Rd/ Casuarinas Rd (South Leg)	West		945 m	Complies
	East		400 m	Complies
Walkaway-Nangetty Rd/ Kiely Rd	West		875 m	Complies
	East		420 m	Complies
Nangetty – Walkaway/ BESS Site Access	West		680m	Complies
	East		500m	Complies

Table 12 indicates that westbound traffic at the Nangetty – Walkaway Road/Casuarinas Road intersection does not have sufficient sight distance. **Figure 15** shows that the sight distance is adversely impacted by vegetation.

Figure 15 Vegetation (Obstruction) Clearance and Road Reserve Boundary



It is recommended that the vegetation be cleared to enable the required SISD to be achieved, ensuring this intersection operates safely. Based on SLR's review of the property boundaries through NearMap aerial imagery, it is identified that the majority of vegetation clearance will be undertaken within the road reserve; however, subject to the height of the vegetation (which could vary across seasons) in the third-party land, clearance in private property may also be required. Given that the anticipated construction commencement is three years away at the



time of writing, it is not possible to provide conclusive information in this TIA on the need for vegetation clearance on private land.

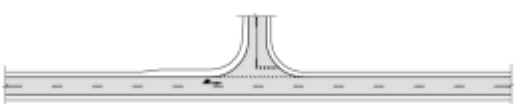
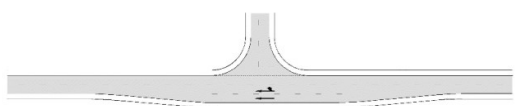
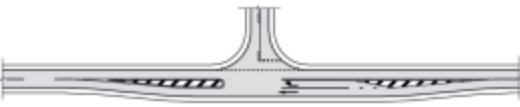
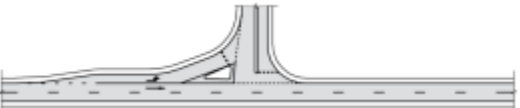
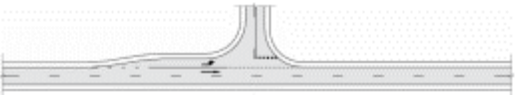
5.2 Turn Lane Warrant Assessments

Turn lane warrant assessments were undertaken for each of the existing intersections in accordance with the following:

- Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Management (AGTM-6-20).
- MRWA Supplement AGTM-6-20 (AGTM-6 Supplement).

The warrants provide guidance on where turning lanes should be provided based on the design traffic volumes. **Table 13** provides a pictorial description of the various turn treatments considered.

Table 13 Turn Treatment Types

Acronym	Right Turn Treatment	Left Turn Treatment
BAR or BAL	 BAR (Basic Right Turn)	 BAL (Basic Left Turn)
AUR or AUL(S)	 AUR (Auxiliary Right Turn)	 AUL(S) (Auxiliary Left Turn (Short))
CHR or AUL or CHL	 CHR (Channelised Right Turn)	 CHL (Channelised Left Turn)
		 AUL (Auxiliary Left Turn)

Source: Austroads Guide to Traffic Management Part 6 (Austroads).

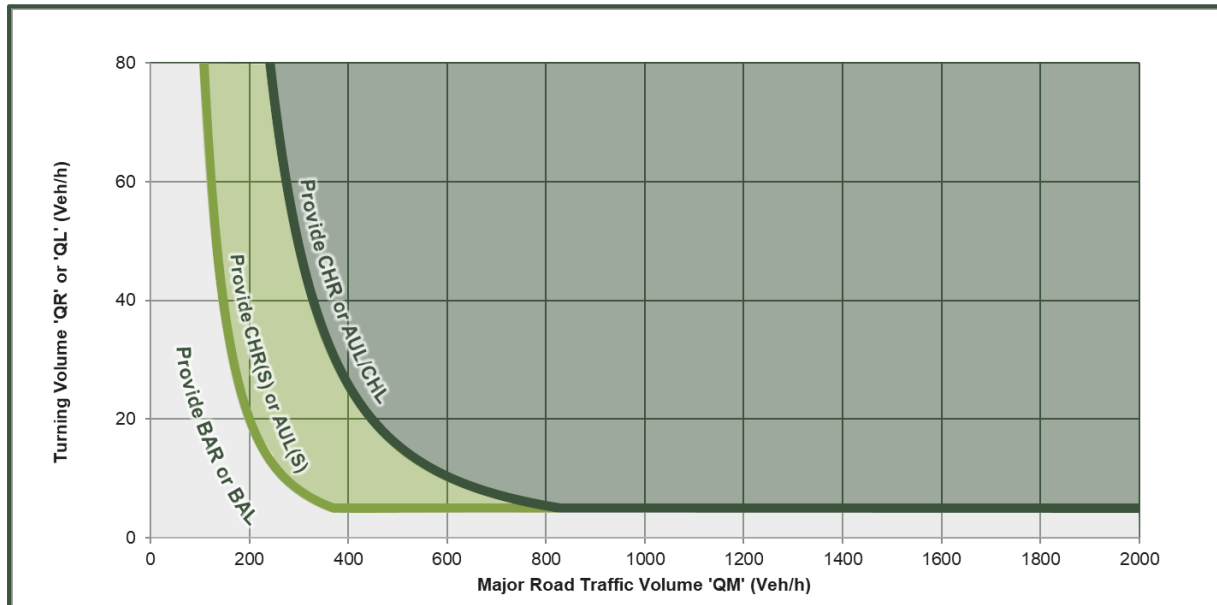
The warrants were produced by establishing the conflicting traffic volumes at which the benefits of providing a higher level of treatment (i.e., the reduction in estimated crash costs) are equal to the additional construction costs associated with providing the higher treatment. The benefits and costs of a higher-level treatment were compared to the base case (minimum turn treatments).

AGTM-6 Supplement notes that MRWA's supplementary method incorporates the high percentage of heavy vehicles and road trains on WA roads.

The turn warrants for a greenfield site with a design speed of greater than 100 km/h (with 7.725% heavy vehicles and 0% road trains) are shown in **Figure 16** overleaf.



Figure 16 Turn Warrant Assessments (Major Road Design Speed $\geq 100\text{km/h}$)



5.3 Intersection Turning Treatments

Turn warrant assessments have been undertaken for the construction peak periods for the following intersections:

- Geraldton-Mount Magnet Road/ Casuarinas Road (southbound).
- Nangetty – Walkaway Road/ Kiely Road (northbound).
- Nangetty – Walkaway Road/ Casuarinas Road (northbound).
- Nangetty – Walkaway Road/ Casuarinas Road (southbound).
- Nangetty – Walkaway Road/ BESS Site Access

SLR conducted the assessment assuming 100% of construction and 100% of workforce vehicles would access all site access locations at all times for a highly conservative evaluation.

Table 14 overleaf provides a summary of the existing turn treatments and required turn treatments stipulated by the AGTM-6 Supplement, while detailed outputs of the MRWA-standard turn warrant assessments are provided in **Appendix H**.



Table 14 Summary of Turn Warrant Assessment Results

Intersection/ Scenario	AM Peak Hour			PM Peak Hour		
	RT Q _M	LT Q _M	Required Treatment	RT Q _M	LT Q _M	Required Treatment
Geraldton-Mount Magnet Road, into Casuarinas Road (southbound)						
Construction	69	19	AUR/SL	73	49	BAR/SL
Nangetty – Walkaway Road, into Kiely Road (northbound)						
Construction	146	50	SR/BAL	113	31	SR/BAL
Nangetty – Walkaway Road, into Casuarinas Road (northbound)						
Construction	92	15	SR/BAL	59	12	SR/BAL
Nangetty – Walkaway Road, into Casuarinas Road (southbound)						
Construction	28	13	BAR/SL	29	17	BAR/SL
Nangetty – Walkaway Road/ BESS Site Access						
Construction	122	43	AUR/SL	123	80	AUR/SL

5.3.1 Turn Warrant Assessment Summary

Approach from the West

The turn warrant assessments indicate that Basic Right Turn (BAR) or Basic Left Turn (BAL) treatments will be sufficient at every access location for the wind farm; however, an Auxiliary Right Turn Treatment (AUR) will be required at the access location for the BESS, consistent with MRWA Guidelines.

However, due to the high number of heavy vehicles & OSOM vehicles and the potential conflict with through vehicles, SLR recommends that all access locations be treated with either AUR or AUL(S) to allow through vehicles to travel around turning vehicles.

Approach from the East

It should be noted that no vehicles are anticipated to approach the access locations from the east. On this basis, it is recommended that the existing SR or SL treatments be retained.

Conclusions

In the interest of road safety, the Proponent has agreed to upgrade all left-hand turn treatments at the major access locations into “short auxiliary left turn treatments (AUL-S)” and upgrade all right-hand turn treatments at the major access locations to “auxiliary right turn treatments (AUR)”.

5.4 Council Road Links

A road link assessment was undertaken for Casuarinas Road, Edwards Road, and Kiely Road in accordance with:

- MRWA Supplement to Austroads Guide to Road Design Part 3: Geometric Design (AGRD-3 Supplement)(July 2025).



- Australian Road Research Board (ARRB)⁵ Unsealed Roads Manual Guidelines to Good Practice - March 2009 edition.

5.4.1 Casuarinas Road Link Analysis

The current condition of Casuarinas Road, as summarised in **Section 3.2.2** and shown in **Figure 6**, is an unsealed road with a width of approximately 15m. The anticipated heavy vehicle traffic generated by the overall development was also determined in **Section 4.0**. Based on the anticipated increase in heavy vehicle traffic (particularly OSOM material movements), it is recommended that the sections of Casuarinas Road, where the majority of the construction traffic will take place, be sealed. Sections of Casuarinas Road, where the majority of the construction traffic will occur, can only be confirmed in a post-approval CTMP in conjunction with the preparation of a detailed construction program and MRWA advice on the preferred OSOM material route options. A review of the AGRD-3 Supplement, *Table 4.5: Single Carriageway Rural Road Widths*, suggests that the required carriageway width for traffic associated with the Project is 9.0m. **Table 15** summarises the suggested sealed road width for Casuarinas Road.

Table 15 Sealed Road Cross-Section Widths

Element	Design (150 – 500 PCUs ⁶ / day)
Trafficable Lane Width	3.5m
Sealed Shoulder Width	1.0m
Total Carriageway Width	9.0m

Adapted from ARRB

The suggested sealed carriageway and further design considerations will also require approval from the City of Greater Geraldton.

5.4.2 Kiely Road and Edwards Road Link Analysis

The AGRD-3 Supplement refers to ARRB's Unsealed Roads Manual Guidelines to Good Practice - March 2009 edition. Noting that the exact construction traffic is not confirmed at the time of writing, **Table 16** provides an overview of the recommended unsealed road cross-section widths.

Table 16 Unsealed Road Cross-Section Widths (Adapted from ARRB)

Element	Two-lane two-way road
Trafficable Per Lane Width (Unsealed)	3.0m
Shoulder Width (Unsealed)	0.5m
Total Carriageway Width	7.0m + 1.0m wide table drain

The existing conditions of both Kiely Road and Edwards Road compared with the cross-section guide in **Table 16** suggest that use of Kiely Road over Edwards Road is preferred.

⁵ Now National Transport Research Organisation (NTRO)

⁶ PCU: Passenger Car Unit



6.0 OSOM Material Route Studies Summary

Two OSOM material route studies were undertaken by ARES Group and SLR. These studies and the possible resulting impacts of the haulage of OSOM materials on the wider road network are provided in **Appendix C**. The studies, which should be read in conjunction with this TIA, provide detailed information on the following for the possible transportation routes:

- Specifications of the OSOM materials that will be transported to the site.
- Specifications of the proposed vehicles that will transport the OSOM materials.
- Port of Import (Geraldton), and where materials will be stored at the Port of Geraldton.
- Swept path assessments for the longest loads (turbine blades) at critical intersections along the nominated two routes.
- Overhead structures (bridges) along the route.

Table 17 below provides a summary of the dimensions of the required OSOM materials, identifying the critical dimension in **bold**.

Table 17 Summary of OSOM Materials Critical Dimensions*

Component with Transporting Vehicle	Dimensions (h x l x w)	Weight***
Turbine Tower (Base Section)	6.2m** x 39.1m x 5.9m	100t
Turbine Blade	4.8m x 86.0m x 3.0m	35t – 40t
Battery Modules	2.9m x 6.1m x 2.5m	35t

* Provided for informational purposes only; specifications are subject to detailed design.

** Within 300mm minimum safety buffer required by the MRWA Oversize Vehicle Route Survey Audit Regime.

*** Approximately.

6.1 OSOM Enabling Works

The route studies determined that the transportation of OSOM materials would require minimal enabling works, which include changes of road signage, temporary hardstand construction, and vegetation clearance. These modifications are summarised in **Table 18** overleaf.



Table 18 Summary of OSOM Enabling Works

Pinch Point	Road & Intersection	Modifications Required
Route 1 (State Road Option)		
01	Geraldton - Mount Magnet Rd & Edward Rd	Sign to be made removable.
02	Geraldton - Mount Magnet Rd & Casuarinas Rd	Temporary hardstand and vegetation clearance.
03	Casuarinas Rd & Edwards Rd	Temporary hardstand and vegetation clearance.
04	Nangetty - Walkaway Rd & Casuarinas Rd (turning west)	Temporary hardstand and vegetation clearance.
04	Nangetty - Walkaway Rd & Casuarinas Rd (turning east)	Temporary hardstand and vegetation clearance.
05	Nangetty - Walkaway Rd & Kiely Rd	Temporary hardstand and vegetation clearance.
Route 2 (Local Road Option)		
01	Port Storage & Reg Clark Rd	Gate to be modified or widened.
02	Reg Clark Rd & Ian Bogle Rd	Sign to be made removable.
04	Geraldton - Mount Magnet Rd & Edward Rd	Sign to be made removable.
05	Nangetty - Walkaway Rd & Kiely Rd	Temporary hardstand on private land, fence removal or realigned carriageway.
06	Nangetty - Walkaway Rd & Casuarinas Rd (turning north)	Temporary hardstand.
07	Casuarinas Rd & Edwards Rd	Temporary hardstand and vegetation clearance.
08	Nangetty - Walkaway Rd & Erangy Springs Rd	Temporary hardstand and vegetation clearance.
09	Nangetty - Walkaway Rd & Casuarinas Rd (turning south)	Temporary hardstand and vegetation clearance.
10	Casuarinas Rd & Winterbottom Rd	New track required within existing road reserve, vegetation/ tree clearance required, and sign to be relocated.
11	Nangetty - Walkaway Rd & Burma Rd	Temporary hardstand.
12	Casuarinas Rd & Burma Rd	Temporary hardstand and vegetation clearance.



7.0 Construction Traffic Impact Assessment

7.1 Traffic Volume Forecasts

Section 4.1.1 summarises the trip generation forecast of the proposed development. The incremental development traffic using the transport network is visually illustrated in the desktop models provided in **Appendix I**.

It is anticipated that the commencement of the Project's peak construction output will occur within 1.5 years (2029) of the construction commencement (2028). Therefore, the following design scenarios have been considered in SLR's analysis in this TIA:

- Existing Surveyed Volumes (2023).
- Year of Construction Commencement (2028).
- Year of Construction Traffic Peak (2029).

7.2 Capacity and Level of Service

Section 4.1.1 summarises the anticipated additional traffic generated by the Project as approximately 150 vehicle movements in the peak hour and approximately 405 vehicle movements per day during the peak construction period. In addition, approximately 105 vehicle movements are anticipated in the peak hour and approximately 255 vehicle movements per day during a typical day. An assessment of the surrounding road network, based on its functional classification, is provided in **Table 19** below.

Table 19 MRWA Classification Assessment

Road	Functional Classification	Estimated 2029 AADT (vpd)	2029 Forecast Construction AADT (vpd)	Classification Threshold (vpd)	Assessment
Geraldton - Mount Magnet Rd	Primary Distributor	900	1,180	> 10,000	Within threshold
Nangetty – Walkaway Rd	Regional Distributor	300	580	< 6,000	
Casuarinas Rd N	Access Road	< 50	70	< 75	
Edwards Rd	Access Road	< 10	45	< 75	
Kiely Rd	Access Road	< 25	35	< 75	
Casuarinas Rd S	Access Road	< 50	75	< 75	

Based on the information provided in **Table 19**, it is anticipated that all of the broader road network will continue to operate within the acceptable thresholds prescribed by MRWA during the construction of the Project.

On this basis, noting that the impacts of the construction traffic are temporary for the duration of the construction phase and the aforementioned road segments having a larger capacity than the classification requirements, the anticipated impacts can adequately be absorbed within the existing road infrastructure, subject to the implementation of the following:

- The intersections identified in **Section 5.3** are upgraded to provide the suggested turning treatments.
- Segments of Casuarinas Road are sealed as assessed in **Section 5.4.1**.



- The required OSOM enabling works, as detailed in **Section 6.1** are carried out to the satisfaction of MRWA.
- A CTMP that is generally aligned with **Section 8.0** of this TIA is implemented following the approval of the proposed development.
- The recommendations provided in **Section 9.0** of this TIA are considered.



8.0 Construction Traffic Management Strategies

8.1 Construction Traffic Management Plan

It is recommended that a CTMP or equivalent document be prepared following approval, but prior to the substantial commencement of construction activities. It would be appropriate for this document to be prepared in accordance with the requirements set out in this section of this report.

The purpose of the CTMP would be to identify any changes to development planning that occur after the preparation of this assessment and their impact on the assessment's conclusions.

In addition, the document would typically detail impact mitigation strategies, including soft strategies such as busing the workforce as identified herein and hard strategies such as the road works near access locations and road upgrades along the OSOM material transportation routes identified herein.

The geometric details of the access roads should be further detailed following the approval of the Development Application prior to construction commencement, to ensure the internal access road locations conform to the Australian and MRWA standards and are documented in the CTMP.

The CTMP should also provide mitigation strategies where the sight distances are below the requirements of the Austroads Guidelines and operational information, such as contact details of the maintenance contractor, etc. However, it is not considered necessary to investigate the operational impacts in detail, given that the wind farm and BESS require very low maintenance.

The CTMP should also contain information on the detailed construction strategy, construction program, staging of the project (if any), the vehicle fleet that will be used, the proposed accommodation strategy for the workforce and their daily transportation to and from the development site.

8.2 OSOM Traffic Management Plan

The transportation of OSOM materials should be managed under a dedicated OSOM Traffic Management Plan, prepared by the commissioned contractor and submitted to MRWA and the Council for approval prior to the first OSOM movement.

The OSOM TMP would be prepared in conjunction with the route studies provided in **Appendix C** and the permit conditions issued by MRWA, and would address the following as a minimum:

- The approved haulage route, including any nominated alternative routes and the conditions under which each may be used.
- Permitted travel times, including any restrictions on night movements, school bus times and peak periods.
- Pilot and escort vehicle requirements, including the escort arrangements identified in **Section 8.8** for loads exceeding 5.5 metres wide or 40 metres long.
- Convoy composition, spacing and the arrangements for allowing following traffic to overtake.
- Communication protocols between escorts, the convoy and the site, and notification arrangements for emergency services, affected landowners and the wider community.



- The enabling works identified in **Section 6.1**, including confirmation that each is in place before the movements it supports.
- Contingency arrangements for breakdowns, adverse weather and load shifts, including nominated safe standing areas along each route.
- Post-haulage inspection and reinstatement of any temporary works, read alongside the dilapidation surveys recommended in **Section 9.5**.
- Drivers Code of Conduct.

It is important to note that all drivers have a responsibility to follow WA road rules and the Drivers' Code of Conduct. SLR has prepared a conceptual Driver's Code of Conduct, which is provided in **Appendix J**. This document, if required, should be updated or further detailed as part of the CTMP.

8.3 Traffic Guidance Schemes (TGSs)

It is important to note that the majority of works will be carried out within the property boundary of the proposed development site, other than intersection upgrade works on Geraldton - Mount Magnet Road/ Casuarinas Road, Nangetty – Walkaway Road/ Casuarinas Road, and Nangetty – Walkaway Road/ Kiely Road intersections and the proposed BESS vehicle access. It is anticipated that works will be commissioned separately. Therefore, construction activities for the proposed upgrades will occur at different times.

It is anticipated that each access driveway will have separate CTMPs, which will have their own TGSs. In the absence of information on construction methodologies and programs at the time of writing, it is not possible for this TIA to discuss the respective traffic management strategies in detail.

Notwithstanding, the CTMPs for works on Casuarinas Road, Nangetty – Walkaway Road, Geraldton - Mount Magnet Road and Kiely Road must be prepared to the satisfaction of MRWA and the City of Greater Geraldton.

8.4 Site Management

The following procedures are to be observed by all vehicle drivers accessing the subject sites:

- Drivers are to obey all site signage and the directions of the site personnel.
- All vehicles are to park and load/ unload within the site using the designated parking and loading areas where possible. Vehicles are not parked or loaded/ unloaded within the public road reserve.
- All drivers are required to operate vehicles in a safe and courteous manner, within and external to the subject site.

8.5 Heavy Vehicle Management

8.5.1 General Requirements

Heavy vehicles accessing the site will need to abide by their respective company operating procedures in addition to standard WA road rules when operating the vehicle.

8.5.2 Noise Management

To limit heavy vehicle noise associated with construction activities, drivers are to abide by the following requirements:



- Heavy vehicles should limit the use of engine or compression braking systems where possible.
- Posted speed limits on the external road network are to be observed and obeyed.
- Vehicles are to be turned off when not in use.

8.5.3 Dust Management

Appropriate mitigation measures should be identified by the contractor, and strategies should be listed in the CTMP for dust management.

8.6 Mitigation Measures

The impacts of construction traffic and the mitigating measures to be implemented are outlined in **Table 20**.

Table 20 Construction Traffic Mitigation Measures

Mitigation Measures	Responsibility	Timing
Construction Traffic on Casuarinas Road: Construction traffic will use the new access to enter/ exit the site. To ensure the impacts on motorists within the area are kept to a minimum, construction traffic will remain low.	Site Managers	Daily.
Management of deliveries: The site managers will manage deliveries to ensure that construction vehicle movements remain low.	Site Managers	As required.
Safety during construction: The safety of motorists and the public throughout the area will be maintained during construction through the preparation and execution of Traffic Guidance Schemes (TGS). TGS plans will be implemented, managing the access and the general public's movement around construction activities. They should identify all reasonably foreseeable hazards, assess them, and manage them as best possible by eliminating or minimising the risks. The TGSs shall be monitored and updated accordingly throughout the project.	Site Managers and Traffic Control Supervisors	Daily.
Reporting: Reporting and monitoring of construction vehicle movements are to be undertaken to ensure that drivers are adhering to restricted times.	Site Managers	Weekly.

8.7 Dilapidation Surveys

It is recommended that dilapidation surveys be undertaken to assess the conditions of all nominated roads to identify changes prior to and following the proposed construction works.

8.8 Vehicle Permits

It is expected that there will be strict requirements to obtain vehicle permits for the haulage of OSOM materials from the port of import (Geraldton) to the development site, as discussed throughout this TIA. Accordingly, OSOM material transportation permits will be obtained by the commissioned logistics firm.

Additionally, based on SLR's review of the MRWA website, all OSOM material trips that are in excess of either 5.5 meters wide or 40 meters long require at least one escort vehicle supplied by either MRWA or WA Police, indicating that most WTG components, transformers and substation trips require an escort permit through MRWA.



8.9 Risk Assessment

A risk assessment is intended to identify hazards and risks associated with construction activities. The purpose is to determine the controls required for the protection of road workers and road users. A Risk Assessment associated with the construction works of this site should be prepared and provided in the CTMP.

8.10 TMP Monitoring/ Review & Improvement Process

8.10.1 Implementation

The proposed works should be carried out in accordance with the following requirements:

- The approved Issued for Construction drawings, Traffic Management Plan (TMP) and Traffic Guidance Schemes (TGS).
- All associated Federal and State statutory requirements, e.g., environment, cultural heritage, etc., as required.

8.10.2 Monitoring and Review

The approved CTMP should be monitored and reviewed regularly. If issues arise, the CTMP should be revised to mitigate the issues. Regarding the implemented TGS plans, these should be monitored and reviewed to ensure signs and devices are installed correctly and convey the correct and intended messages.

8.10.3 Work Site Inspections, Recording and Reporting

At the commencement of work, the TGS setup shall be inspected to confirm accuracy with the intended TGS and to ensure that the locations of signage and devices are safe and do not cause hazards to traffic. This inspection shall be documented within a site register and repeated at the commencement of each week of the construction program.

8.10.3.1 Incident Management

For the purposes of this TMP, an 'incident' is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not cause non-compliance. Furthermore, 'non-compliance' is an occurrence, a set of circumstances or a development that is a breach of the consent. In the event of an incident relating to traffic, the Contractor's Site Manager must notify the Construction Project Manager immediately, following any need to alert emergency services. Such incidents may include, but are not limited to:

- Vehicle crash or injury resulting from construction traffic related to the project.
- Spill of any dangerous goods or hazardous substances to the ground or water.
- Substantiated complaints from community members or regulatory authorities relating to traffic management.
- Land-based off-site sediment loss to the environment, including sediment tracking onto the roadway.

8.11 Contingency Plan

A contingency plan shall be established by the Contractor in accordance with the requirements of Mid West Wind Farm Pty.



8.12 Communications Strategy

A communications strategy shall be established by the Contractor in accordance with the requirements of Mid West Wind Farm Pty.



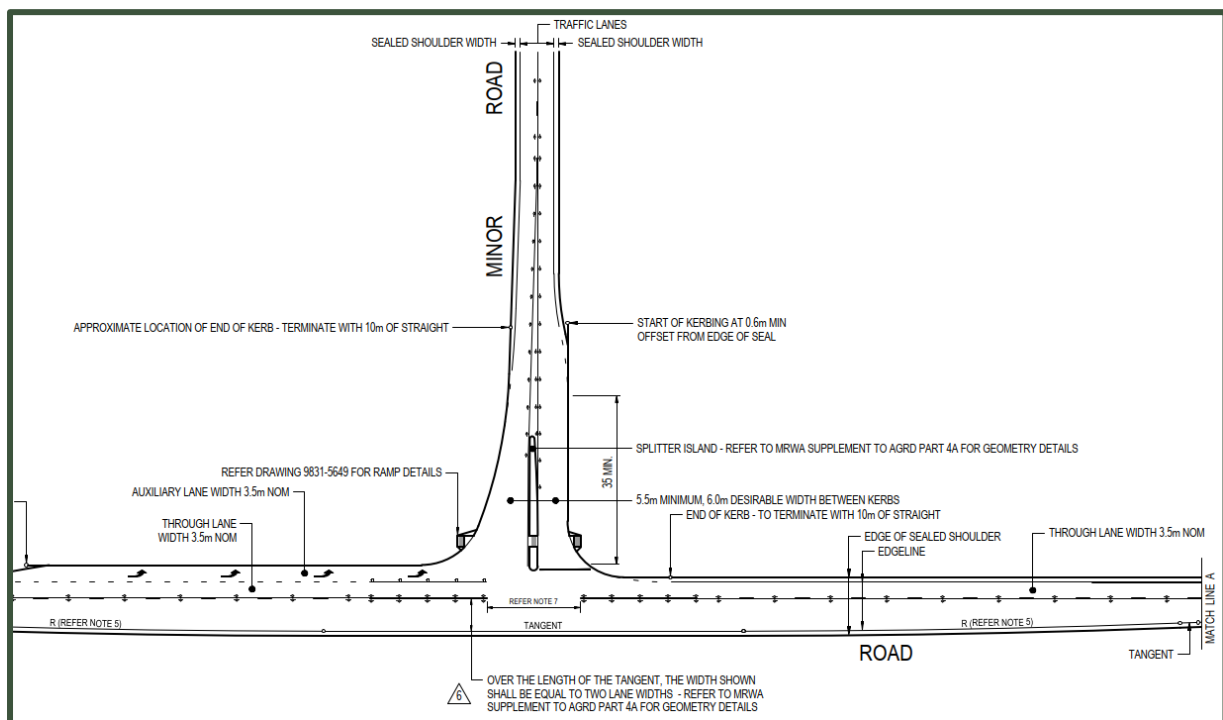
9.0 Recommendations

Based on the SLR's analysis documented in this report, the following recommendations have been made:

9.1 Intersection Upgrades

Based on the turn warrant assessments undertaken for all five potential intersection locations, as documented in detail in **Table 14** in this report including the BESS vehicle access, it was considered that upgrading every intersection's configuration was not strictly necessary due to the low traffic volumes on Geraldton – Mount Magnet Road and Nangetty – Walkaway Road. However, due to the high number of OSOM materials to be transported to the site, it is recommended that the client consider upgrading the right-turn movements to AUR and left-turn movements to AUL(S), consistent with relevant Austroads and MRWA guidelines. It is anticipated that the MRWA Supplement AGRD-4A-23 dated July 2025, and drawing #200131-0083 should be adopted. **Figure 17** below provides an overview of the recommended turn treatments.

Figure 17 Recommended Right Turn (AUR) and Left Turn Treatments (AUL-S)



It should be noted that MRWA drawing #200131-0083 illustrates AUR and AUL(S) treatments in the same drawing. However, as part of the proposed development, only one approach (either right turn or left turn) will need to be upgraded at each access location. This is because no construction traffic is expected from the east on Geraldton – Mount Magnet Road and Nangetty – Walkaway Road.

9.2 Construction Traffic Management Plan (CTMP)

A CTMP or equivalent document should be prepared following approval but before the substantial commencement of construction activities. It would be appropriate for the CTMP to be prepared in general accordance with the strategy set out in **Section 8.0**.



9.3 Sealing of Major Intersections

Based on the anticipated increase in heavy-vehicle traffic (OSOM and non-OSOM material movements), in order to minimise gravel migration from the unsealed side roads to sealed major roads, SLR recommends a minimum of one design vehicle's length be sealed at the following major intersections:

- Geraldton-Mount Magnet Road/ Casuarinas Road (southern leg).
- Walkaway-Nangetty Road/ Kiely Road (northern leg).
- Walkaway-Nangetty Road/ Casuarinas Road (northern leg).
- Walkaway-Nangetty Road/ Casuarinas Road (southern leg).
- The proposed vehicle access for the BESS facility – refer to **Appendix K**.
- Any other intersection of a sealed road with an unsealed site access.

In the absence of a CTMP or a detailed construction strategy, the largest design vehicle anticipated to frequent the site is the 27.5m B-Double. The OSOM vehicles proposed for transporting turbine blades and transformers are not considered critical for gravel migration purposes, given that they will operate at very slow speeds at the intersections listed above.

Once more is known about the construction methodology, vehicle accesses and vehicle volumes should be detailed, which may result in amendments to the proposed mitigation measures for gravel migration to improve road safety.

9.4 OSOM Vehicle Approvals

It is certain that strict requirements will be in place to obtain vehicle permits for transporting OSOM materials from the port of import (Geraldton) to the development site. As discussed throughout this TIA report, OSOM material transportation permits should be obtained by the preferred logistics firm from MRWA and the National Heavy Vehicle Regulator (NHVR). The exact routes for which approvals should be obtained can only be confirmed in a post-approval CTMP, prepared in conjunction with the detailed construction program and the MRWA advice on preferred OSOM material route options.

9.5 Dilapidation Surveys

Given the construction of the Project requires a high proportion of heavy vehicles, it is recommended that road dilapidation surveys be undertaken to assess the conditions of all access roads discussed in this TIA to identify changes prior to and following the proposed construction works.

9.6 Vegetation Clearance

As detailed in **Table 12** and **Figure 15**, it is recommended that the vegetation near the Nangetty – Walkaway Road and Casuarinas Road intersection in the westbound direction be cleared to maintain the required SISD.

9.7 Government Consultations

It is recommended that Mid West Wind Farm Pty undertake consultations with the state and local assessment agencies.



10.0 Conclusions

Mid West Wind Farm Pty (The Proponent) has engaged SLR Consulting Australia Pty Ltd (SLR) to prepare a Transport Impact Assessment (TIA) for the proposed Mid West Wind Farm development in the Mid West Region in Western Australia (WA).

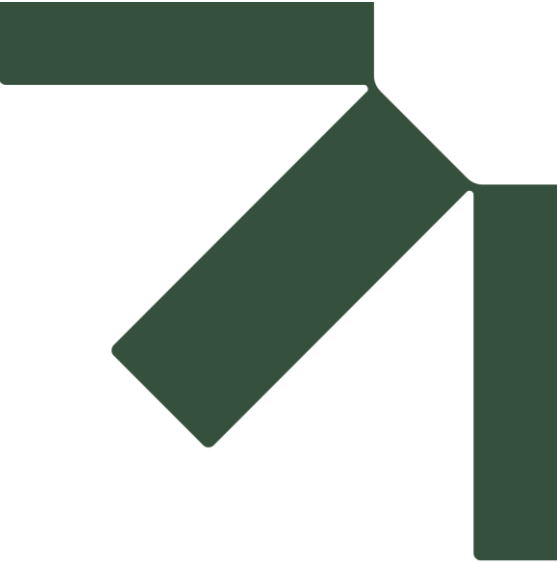
The Proponent proposes the construction and operation of a wind farm with a total generation capacity of 700 megawatts (MW), supplemented by a battery energy storage system (BESS) with a capacity of 700 MW / 4,200 megawatt-hour (MWh). The project site spans a large area of landholdings on either side of Casuarinas Road and is located approx. 50 kilometres (km) east of Geraldton and approx. 420 km north of Perth. The BESS is located on a single landholding on the southern side of Nangetty – Walkaway Road and served by a new site access off that road. This TIA has been prepared to inform the Development Application. Based on the analysis and discussion documented in this report, the following is concluded:

- With the most conservative assumptions, the anticipated traffic generated by the Project during the peak construction phase is 147 vehicle movements in the peak hour and 393 vehicle movements per day, noting that this is a worst-case scenario.
- The anticipated traffic generated during an average construction day is 110 vehicle movements in the peak hour and 279 vehicle movements per day.
- The impacts of the construction traffic can be accommodated by the existing roading infrastructure, such that the Project has a minor effect on the safety and efficiency of the transport network, provided the recommendations below are implemented.
- SLR's review of the turn warrant assessments identified that some intersection upgrades at access locations will be necessary for safe OSOM material transportation.
- The publicly available crash dataset for the surroundings of the development site does not indicate any recurring crash type or theme that would preclude the development or warrant significant safety upgrades.
- Sight distances available at four site locations exceed the requirements of Austroads Guidelines. At the Nangetty – Walkaway Road & Casuarinas Road intersection, sight distances in the westbound direction are insufficient due to vegetation. This vegetation should be trimmed regularly.

The following is recommended:

- Upgrading identified intersections on sealed roads at site access locations to include left-turn or right-turn lanes, as detailed in **Section 9.1** of this TIA.
- A CTMP, consistent with **Section 9.2** of this TIA, is to be prepared following the approval of this application to ensure construction traffic impacts are minimised.
- To minimise gravel migration and maximise road safety, some unsealed side roads should be sealed at key intersections, consistent with **Section 9.3** of this TIA.
- Approvals be obtained for OSOM vehicles, as detailed in **Section 9.4** of this TIA.
- Dilapidation reports to be prepared for review by the assessment agencies, consistent with **Section 9.5** of this TIA.
- Consistent with **Section 9.6** of this TIA, vegetation near the Nangetty – Walkaway Road and Casuarinas Road intersection in the westbound direction be cleared to maintain the required SISD.
- Government consultations be undertaken as detailed in **Section 9.7** of this TIA.





Appendix A Development Plans

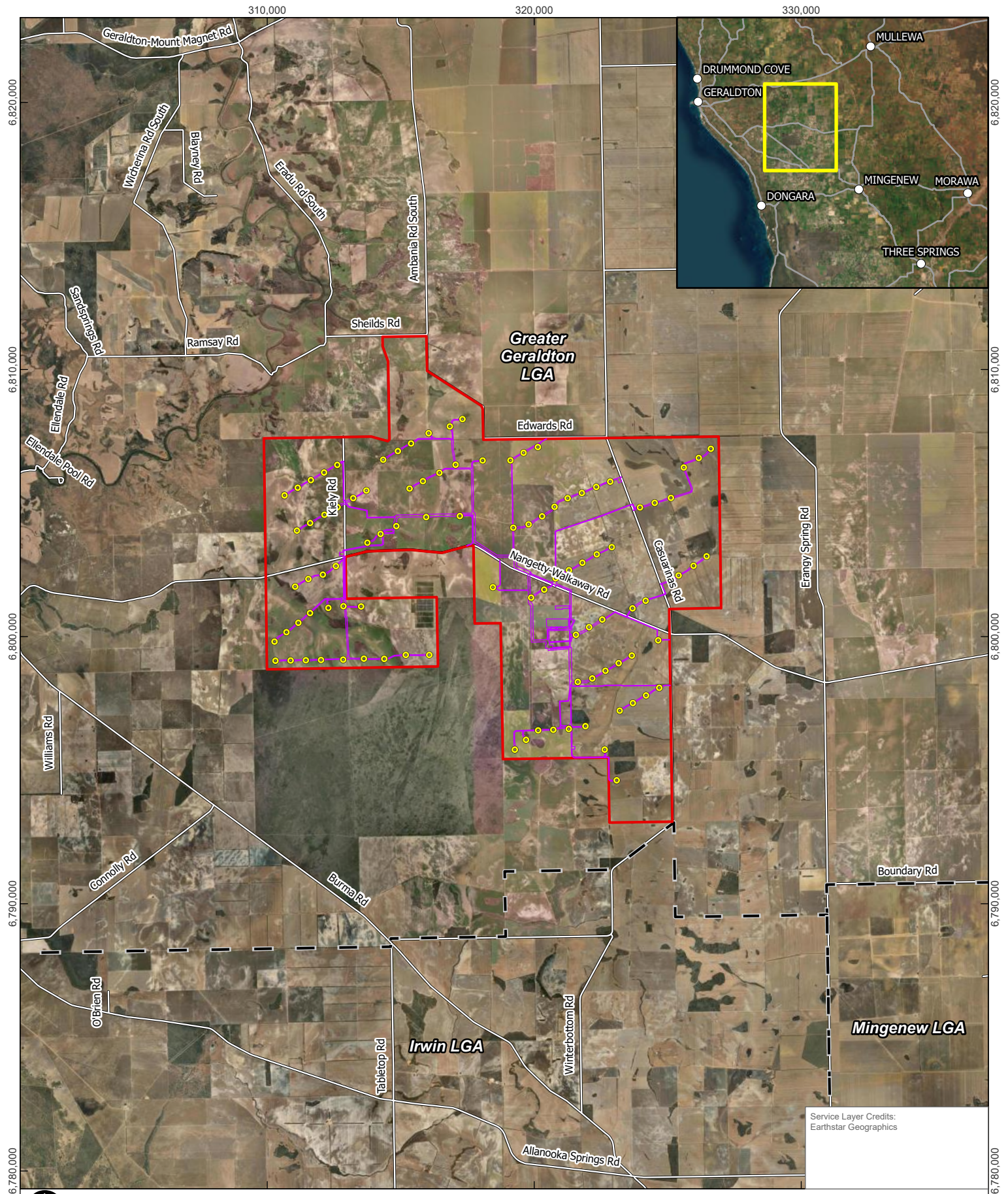
Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

5 August 2026



Service Layer Credits:
Earthstar Geographics

 0 3 6 km
 Coordinate System: GDA2020 MGA Zone 50
 Scale: 1:185,000 at A4
 Project Number: 675.072296.00001
 Date Drawn: 04-Aug-2026
 Drawn by: CP

- LEGEND**
- Project Area
 - Wind Turbine Generator
 - Indicative Disturbance Footprint

- Population Centre
- LGA Boundary
- Road

INDICATIVE PROJECT LAYOUT



DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

FIGURE 2 / APPENDIX A

Appendix B WAPC Checklist

Guidelines

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

5 August 2026

Table A-1: Transport Impact Assessment Guidelines Checklist for Developments

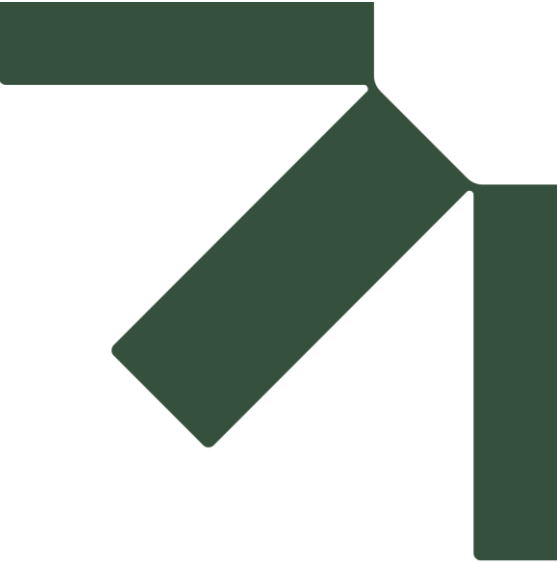
Item	Provided	Comments/Proposals
Summary		
Introduction/Background		
name of client and consultant	Section 1.0	
development location and context	Section 1.0	
brief description of development proposal	Section 2.0	
key issues	None	
background information	Section 2.0	
Existing situation		
existing site uses (if any)	Not applicable	
existing parking and demand (if appropriate)	Not applicable	
existing access arrangements	Not applicable	
existing site traffic	Not applicable	
surrounding land uses	Section 2.0	
surrounding road network	Section 3.0	
traffic management on frontage roads	Not applicable	
traffic flows on surrounding roads (usually AM and PM peak hours)	Section 3.0	
traffic flows at major intersections (usually AM and PM peak hours)	Not applicable	
operation of surrounding intersections	Not applicable	
existing pedestrian/cycle networks	Not applicable	
existing public transport services surrounding the development	Not applicable	
crash data	Section 3.4	
Development proposal		
regional context	Section 3.0	
proposed land uses	Section 2.0	
table of land uses and quantities	Not applicable	
access arrangements	Section 5.0	
parking provision	Not applicable	
end of trip facilities	Not applicable	
any specific issues	Not applicable	
road network	Not applicable	
intersection layouts and controls	Not applicable	
pedestrian/cycle networks and crossing facilities	Not applicable	



Table A-1: Transport Impact Assessment Guidelines Checklist for Developments

Item	Provided	Comments/Proposals
public transport services	Not applicable	
integration with surrounding area	Not applicable	
surrounding major attractors/generators	Not applicable	
committed developments and transport proposals	Section 3.5	
proposed changes to land uses within 1200 metres	Not applicable	
travel desire lines from development to these attractors/generators	Section 5.0	Haulage route provided including route studies.
adequacy of existing transport networks	Section 7.0	
deficiencies in existing transport networks	Section 5.1.2	
remedial measures to address deficiencies	Section 9.6	
Analysis of transport networks		
assessment years	Section 7.1	
time periods	Section 7.1	
development generated traffic	Section 4.0	
distribution of generated traffic	Section 4.0	
parking supply and demand	Not applicable	
base and 'with development' traffic flows	Table 19	
analysis of development accesses	Section 5.3	
impact on surrounding roads	Section 7.2	
impact on intersections	Section 7.2	
impact on neighboring areas	Not applicable	
road safety	Section 5.3	
public transport access	Not applicable	
pedestrian access/amenity	Not applicable	
cycle access/amenity	Not applicable	
analysis of pedestrian/cycle networks	Not applicable	
safe walk/cycle to school (for residential and school site developments only)	Not applicable	
traffic management plan (where appropriate)	Section 8.0	





Appendix C Route Study

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

5 August 2026



Mid West Wind Farm

OSOM Material Route Study

FOR: VESTAS

SLR PROJECT No: 675.072296.00016

Revision: v1.3

11 February 2025



Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
v1.2	11 February 2025	Charlie Seventekin/Drew Mansini	Jeffrey Baczynski	Ashley Gibson

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with VESTAS (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

Acronyms and Abbreviations

AADT	Annual Average Daily Traffic
DA	Development Application
MRWA	Main Road Western Australia
NHVR	National Heavy Vehicle Regulator
OSOM	Oversize and Over Mass
RAV	Restricted Access Vehicle
TMP	Traffic Management Plan
VPD	Vehicles Per Day



Summary and Conclusions

Vestas Development Australia Pty Ltd (Vestas) has engaged SLR Consulting (Australia) Pty Ltd (SLR) to prepare an Oversize and Over Mass (OSOM) Material Transport Route Study for the proposed Mid West Wind Farm development, located approximately 50km east of Geraldton, Western Australia. The project requires the transportation of approximately 100 wind turbines, which comprise several OSOM materials.

It is proposed that all OSOM materials will be imported to the Port of Geraldton. On this basis, Vestas commissioned ARES Group in April 2024 to prepare a route study for the transportation of OSOM materials from the Port of Geraldton to the development site. ARES Group investigated the feasibility of the Walkaway-Nangetty Road (Local Road) option and concluded this option was suitable. As the project's Traffic Engineers, SLR's Transport Advisory team recommended that Vestas also examine the feasibility of an alternative route for contingency, the Geraldton-Mount Magnet Road (State Road) option.

Based on the analysis and discussion documented in this report, the following is concluded:

- **Geraldton-Mount Magnet Road is the recommended route for the transportation of OSOM materials for the following reasons:**
 - Geraldton-Mount Magnet Road has a wider carriageway than Walkaway-Nangetty Road, and therefore, it is anticipated that less extensive traffic management measures will be required.
 - Geraldton-Mount Magnet Road is approved for larger vehicles than Walkaway-Nangetty Road. Geraldton-Mount Magnet Road is readily approved for quad-trucks (53.5m and 60m); however, Walkaway-Nangetty Road is approved for 27.5m B-Double design vehicles (also subject to conditions).
 - Geraldton-Mount Magnet Road has fewer corners than Walkaway-Nangetty Road and has better sight distances.
 - Geraldton-Mount Magnet Road provides several overtaking lanes and rest, breakdown or emergency bays.
 - It is anticipated that the asphalt on Geraldton-Mount Magnet Road is of better quality than Walkaway-Nangetty Road, which could influence the monetary contributions the council may request. This should be confirmed as part of the dilapidation surveys.

Next Steps

The following is recommended:

- The route analysis prepared by ARES Group and SLR be provided to MRWA and local Councils for comments as part of the consultation process.
- A TMP be prepared following the approval of the DA to satisfy the consent conditions.
- If the assessment agencies endorse the Geraldton-Mount Magnet Road (State Road) option, appropriate permits should be obtained for vehicles longer than 60m or loads wider than 2.50m.
- If the assessment agencies endorse the Walkaway-Nangetty Road (Local Road) option, appropriate permits should be obtained for vehicles longer than 27.5m B-Double design vehicles or loads wider than 2.50m.
- Dilapidation surveys be undertaken to the satisfaction of MRWA and subject councils.



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Appendices

Appendix A	Development Plans
Appendix B	Mid West Wind Farm OSOM Material Route Study REV 0 (Ares Group)
Appendix C	VESTAS EnVentus V172-7.2 Wind Turbine Blade Specifications



1.0 Introduction

1.1 Context

Vestas Development Australia Pty Ltd (Vestas) has engaged SLR Consulting (Australia) Pty Ltd (SLR) to prepare an OSOM material transport route study for the proposed Mid West Wind Farm development, located approximately 50km east of Geraldton, Western Australia.

The project proposes the construction and operation of a wind farm with a generation capacity between 500-700MW and is expected to generate approximately 2,000GWh per annum of emissions-free electricity.

The development plans, prepared by Vestas, are reproduced in **Appendix A**.

1.2 Purpose of this Document

In April 2024, Vestas commissioned ARES Group to prepare a route study for the transportation of OSOM materials from the Port of Geraldton to the development site. It was understood that the Walkaway-Nangetty Road (Local Road) option was explored and considered suitable. As the project's Traffic Engineers, SLR's Transport Advisory team recommended that Vestas also examine the feasibility of an alternative route, the Geraldton-Mount Magnet Road (State Road) option. **Figure 1** provides an overview of both options for the purposes of OSOM material transportation.

Based on this, SLR's Transport Advisory team has been tasked by Vestas to undertake a route study for the transportation of OSOM materials from the nominated port of import (Geraldton) to the development site via the aforementioned State Road option.

This document, therefore, should be read in conjunction with ARES Group's "Mid West Wind Farm OSOM Route Study Revision 0" report dated April 2024, which is provided in **Appendix B**.

1.3 Assessment Scope

The scope of this document is limited to assessing the following:

- **The Largest OSOM Material:** VESTAS EnVentus V172-7.2 model turbine blades, which are approximately 85m long.
- **Study Route:** Transportation of the aforementioned turbine blades from Geraldton-Mount Magnet Road/ Geraldton-Walkaway Road intersection to the development site via the State Road. The section of the road network between the Port of Geraldton and the Geraldton-Mount Magnet Road/ Geraldton-Walkaway Road intersection was readily assessed by ARES Group for the nominated OSOM material (turbine blade).

The following is outside the scope of this document:

- Pavement Impact Assessment.
- Structural Assessments (bridges, culverts, etc).

1.4 Reference Documents

- ARES Group "Mid West Wind Farm OSOM Route Study Revision 0" report dated April 2024.
- SLR "Mid West Wind Farm Preliminary Traffic Impact Assessment v1.1" report dated 14 March 2024.

Figure 1 Assessment Background



2.0 Project Description

2.1 Overview

The proposed wind farm development will comprise an arrangement of approximately 70 wind turbines, two substations and associated electrical equipment (switch yard). The development will also provide a 10km long high voltage transmission line connecting the site with the external power network. Ancillary elements of the development include internal access tracks and temporary construction facilities. The wind turbine generators (WTGs) nominally selected for the Project are the Vestas EnVentus V172-7.2 model. The V172-7.2 model has the following technical features relevant to environmental and social impact studies:

- Standard rated power = 7,200kW
- Rotor diameter = 172m (approx. blade length = 84m)
- Rotor weight = approx. 35 tonnes.

2.2 Site Access

The State Road option for the OSOM material transportation proposes utilising Casuarinas Road in Ambania, off Geraldton-Mount Magnet Road. According to the MRWA portal, Casuarinas Road is a local road and classified as an access road. MRWA defines an access road as follows:

"Provide access to abutting properties with safety aspects having priority over the vehicle movement function. In urban areas, these roads are bicycle and pedestrian friendly, with aesthetics and amenity also important. Access Roads are managed by local governments".



Figure 2 and **Figure 3** below illustrate the Geraldton-Mount Magnet Road/ Casuarinas Road intersection and Casuarinas Road, respectively (August 2024).

Figure 2 Nominated OSOM Material Access Intersection



Figure 3 Nominated OSOM Material Transportation Route



2.3 Site Inspection

SLR's Transport Advisory undertook a site inspection in August 2024 to visually verify the results of the initial desktop studies to understand the geometric details of the relevant road segments and height clearances and inspect the pinch points.

3.0 Transport Methodology

3.1 OSOM Material and Required Equipment

The basis of the proposed transport methodology is consistent with ARES Group's "Mid West Wind Farm OSOM Route Study Revision 0" report dated April 2024. It is anticipated that the turbine blades will be transported by fixed-length blade trailers. **Appendix C** provides the geometric and engineering details of the anticipated largest OSOM material, being the wind turbine blade.

SLR's Transport Advisory team has replicated the design vehicle nominated by ARES Group in AutoCAD 2024 and AutoTurn Pro 2024. By using the publicly available cadastre information and the georeferenced high-resolution aerial imagery supplied by Vestas, SLR undertook swept path assessments for the largest OSOM material.

3.2 OSOM Material Transportation Requirements

3.2.1 Assessment Agency

According to the NHVR website, all OSOM permit applications for travel in and between the Australian Capital Territory, New South Wales, Queensland, South Australia, Tasmania and Victoria are processed by NHVR. Northern Territory and Western Australian applications, however, are processed by the relevant state or territory road transport authority.

On this basis, it is understood that MRWA guidelines should be followed to obtain OSOM material transport permits.

3.3 Permits and Orders

According to MRWA, a permit or order is required from Main Roads when driving a RAV on a public road. Generally speaking, a vehicle or vehicle combination exceeding any of the following limits is an RAV and must be operated in accordance with a permit or order:

- 2.5m in width, 4.3m in height, 12.5m in length for a rigid vehicle or 19m in length for a combination.
- 42.5t gross mass, 6t on a single steer axle, 10t on a twin steer axle group (non-load sharing suspension) or 11t on a twin steer axle group (load sharing suspension).
- 9t on a single axle, 16.5t on a tandem axle group or 20t on a tri or quad axle group.

Based on the above criteria, turbine blades will require special permits for transportation from the port of import (Port of Geraldton) to the development site. Consistent with Oversize Vehicle Routes, all vehicles operating under an Oversize Permit, including a Period Permit and a Single Trip Permit, are required to undertake a route survey prior to moving the oversize load on the public road network. As this is a condition of access, operators must keep an auditable record to demonstrate compliance with the requirement. ARES Group's initial report (**Appendix B**) and this supplementary SLR document will serve the purpose of a "route study".

According to MRWA, the route study and the traffic management plan should be prepared consistent with the following guidelines:

- Audit Regime: Oversize Vehicle Route Survey (dated March 2020).
- Oversize Vehicle & Pilot Vehicle General Requirements (dated July 2021).
- Guidelines for Preparing an OSOM TMP (dated September 2021).



It is worth noting that the TMP will only be prepared following the approval of the DA. If modifications are required to State Roads in WA, they will require review and approval from MRWA. Modifications to local roads will require approval from the local shire or council.

4.0 Route

SLR carried out a review of the proposed haulage route from the port of import (Port of Geraldton) to the subject site. It is anticipated that the haulage route will be as follows:

- Port of Geraldton, laydown area (to be determined later).
- Marine Terrace (approx. 2 kms).
- John Wilcock Link (approx. 5 kms).
- N W Coastal Highway (approx. 1 km).
- Geraldton-Mount Magnet Road (approx. 58 kms).
- Casuarinas Road (distance varies subject to each turbine’s location).

Figure 4 below provides an overview of the proposed OSOM material haulage route.

Figure 4 Study Area – Subject OSOM Material Haulage Route



Source: Google Maps

The proposed OSOM haulage route is approximately 66 km long and, in its entirety, contained within the state road network.

4.1 Scope of This Study

As discussed earlier in this document, this document should be treated as a supplement to ARES Group’s route study that covered the local road option for the transportation of OSOM materials. Therefore, the section of the road network from the Port of Geraldton to the Geraldton-Mount Magnet Road & Geraldton-Walkaway Road intersection in Narngulu is not repeated in SLR’s analysis.

5.0 High-Level Review of Route

The characteristics of the road network surrounding the site, along with the AADT (in VPD), are summarised in **Table 1** below.

Table 1 Surrounding Road Network

Road Name	Jurisdiction	Average Daily Weekday Traffic	Average Daily Weekend Traffic	Average Daily Traffic	Posted Speed Limit	Road Classification
Geraldton-Mount Magnet Road (West)	Main Roads WA	≈ 4,300	≈ 3,100	≈ 4,000	80/90	State Road
Geraldton-Mount Magnet Road (East)		≈ 1,200	≈ 700	≈ 1,000	110	
Casuarinas Road	The City of Greater Geraldton	Not available at this stage.				Local Road (Gravel Access Track)

Source: MRWA Portal

5.1 Horizontal Carriageway Clearance

SLR undertook a review of the subject state road network and identified that the lane width in a single direction is typically 3.5m to 3.7m wide along the majority of the study route. **Table 2** and **Table 3** below provide a summary of the overtaking lanes and rest & break-down areas along the approximately 66-kilometre route.

Table 2 Summary of Overtaking Lanes

Overtaking Lane Number	Distance from Port of Geraldton	Length of Overtaking Lane
1	17km	800m
2	23km	950m
3	29km	1.3km
4	53km	1.2km

Table 3 Summary of Rest Areas

Rest Area Number	Distance from Port of Geraldton	Length of Rest Area	Condition
1	10km	260m	Sealed
2	33km	100m	Unsealed
3	46km	110m	Sealed

5.2 Overpass Vertical Clearances

To ascertain the vertical clearances on the proposed transport routes, SLR reviewed the Structure Heights document prepared by MRWA to obtain the vertical clearances of overpasses or bridges along the transport routes, as documented in **Table 4**, noting that the highest required clearance is anticipated to be 6.16m (turbine tower base segments and not the turbine blades).



Table 4 Overpass Vertical Clearances

Road Name	Str Number	Maximum Vertical Clearance (m)
Geraldton Mt Magnet Rd	1518	6.40
John Willcock Link (Eastbound)	1520	6.40
North West Coastal Hwy (Northbound)	1522	7.1
North West Coastal Hwy (Southbound)	1522	7.1
Geraldton Mt Magnet Rd	5371	6.4

Based on this, it has been identified that OSOM materials with a height of up to 6.4m could safely and efficiently be transported to the subject site from the port of import (Port of Geraldton). Based on discussions with the Applicant, it is understood that no loads will require a clearance higher than 6.4m, including the highest equipment, the base segment of the turbine tower.¹

5.3 Bridge Widths/ Capacity

SLR conducted a review of the MRWA Open Data, Maps & Apps for structures and summarised the width of the bridges on the state road in Table 5 below.

Table 5 Bridge Widths

Bridge Name	Str Number	Maximum Width (m)	Kerb Width (m)
Greenough River Eradu Bridge on Geraldton Mt Magnet Rd	0805	8.84	7.92

SLR determined that the widest OSOM material, the turbine tower base section, is well within the maximum width of the bridges along the route. It is worth noting that a complete road closure or partial lane closure will be required to transport some OSOM materials. It should also be noted there has been no consultation from a structural engineer about the load-carrying capacity of this bridge at the time of writing.

5.4 Railway Crossings

SLR reviewed the railway crossings that will need to be negotiated during the construction period. According to the MRWA open data portal, there is only one rail crossing along the haulage route. This crossing is located on Geraldton-Mount Magnet Road near Wicherina Road South intersection in Wicherina. Table 6 below provides an overview of this railway crossing.

Table 6 Level Crossings Along the Haulage Route

Object ID	Road No	Road Name	Local Government	Protection Type	Network Type
1953537	H050	Geraldton-Mt Magnet Rd	Greater Geraldton	Flashing Lights	State Road

The location of the crossing is shown in Figure 5 overleaf.

¹ Power line materials, such as transmission tower segments were not considered.

Figure 5 Geraldton-Mount Magnet Rd, Wicherina (Flashing Lights – ID 2114900)



Source: Rail Crossings | Rail Crossings | Main Roads Open Data, Maps & Apps (arcgis.com)

Table 7 below are images of this railway crossing from SLR’s site inspection in August 2024.

Table 7 Level Crossing along the Haulage Route



Due to the straight nature of the carriageway at this location, no road safety issues are anticipated. Notwithstanding, there will likely be a requirement for a safety assessment at this crossing for the review of the railway operator, which should be addressed in the TIA.

5.5 Swept Path & Pinch Point Assessments

SLR has undertaken swept path assessments for all critical intersections within the state road network and the development area (as shown in Figure 1) that were not captured in the ARES Group’s route study. These swept path assessments are provided at the end of this report. Pinch point assessments show a CAD-based review of each location, considering key opportunities and constraints.

✓

Opportunities

✗

Constraints

○

Further investigation needed



6.0 Conclusions

Based on the analysis and discussion documented in this report, the following is concluded:

- **Geraldton-Mount Magnet Road is the recommended route for the transportation of OSOM materials for the following reasons:**
 - Geraldton-Mount Magnet Road has a wider carriageway than Walkaway-Nangetty Road, and therefore, it is anticipated that less extensive traffic management measures will be required.
 - Geraldton-Mount Magnet Road is approved for larger vehicles than Walkaway-Nangetty Road. Geraldton-Mount Magnet Road is readily approved for quad-trucks (53.5m and 60m); however, Walkaway-Nangetty Road is approved for 27.5m B-Double design vehicles (also subject to conditions).
 - Geraldton-Mount Magnet Road has fewer corners than Walkaway-Nangetty Road and has better sight distances.
 - Geraldton-Mount Magnet Road provides several overtaking lanes and rest, breakdown or emergency bays.
 - It is anticipated that the asphalt on Geraldton-Mount Magnet Road is of better quality than Walkaway-Nangetty Road, which could influence the monetary contributions the council may request. This should be confirmed as part of the dilapidation surveys.

6.1 Next Steps

Next Steps

The following is recommended:

- The route analysis prepared by ARES Group and SLR be provided to MRWA and local Councils for comments as part of the consultation process.
- A TMP be prepared following the approval of the DA to ensure the safety and efficiency of the road network is maintained during the construction of the project.
- If the Geraldton-Mount Magnet Road (State Road) option were adopted for the OSOM material transportation, appropriate permits should be obtained for vehicles longer than 60m or loads wider than 2.50m.
- If the Walkaway-Nangetty Road (Local Road) option were adopted for the OSOM material transportation, appropriate permits should be obtained for vehicles longer than 27.5m B-Double design vehicles.
- In either the OSOM material transportation scenario (local road or state road), dilapidation surveys be undertaken to the satisfaction of MRWA and subject councils.



LOCATION 1

Geraldton-Mount Magnet Road and Edward Road Intersection (Roundabout)

SUMMARY

The turbine blades can navigate this roundabout without any critical impacts.

✓

• No private property impacts are anticipated.

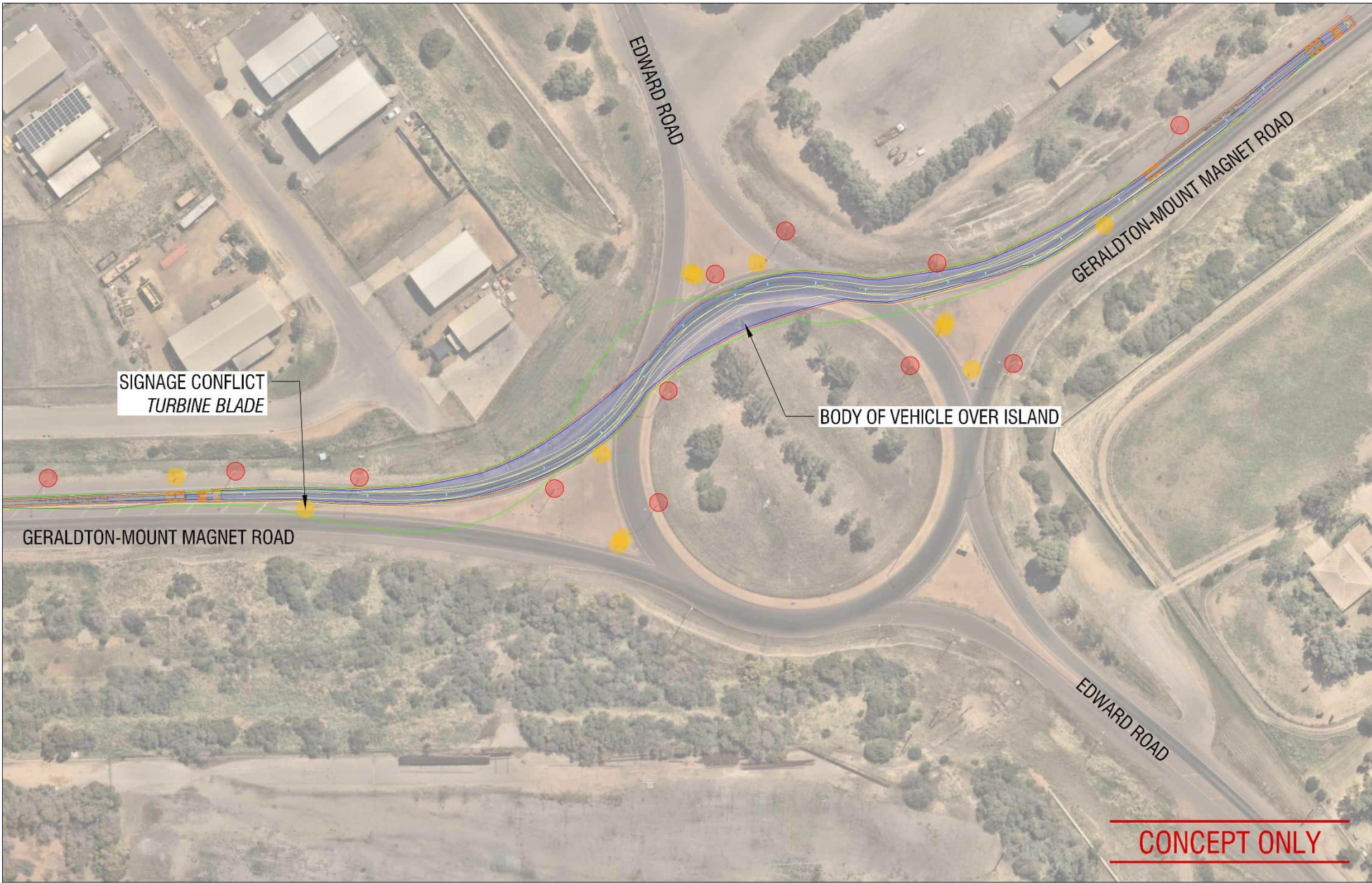
• No vegetation clearance or tree trimming is anticipated.

✗

• One signage, as shown in SLR's swept path assessment will need to be made removable.

• The body of the transport vehicle and the turbine blade will have to travel over the roundabout island.

However, no vegetation or other obstacles were identified during the site inspection.





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Project No: 675.072296

Date: 30/01/2025

Drawn by: DM

Reviewed by: CS

Sheet Size: A3

Projection: -

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)



SCALE 1:1000

0 10 20 30 40 METRES

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 1



LOCATION 2 OPTION A

Geraldton-Mount Magnet Road and Casuarinas Road Intersection

SUMMARY

The turbine blades can navigate this intersection without any critical impacts.

✓

- No private property impacts are anticipated.
- No impact on the large tree and the small tree is expected.

✗

- Vegetation clearance should be expected.
- Hardstand widening may be required.

-

- The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.





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Sheet Size:	A3
Projection:	-

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)


SCALE 1:1000
METRES

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 2 (OPT A)



LOCATION 2 OPTION B

Geraldton-Mount Magnet Road and Casuarinas Road Intersection

SUMMARY

The turbine blades can navigate this intersection without any critical impacts.

✓

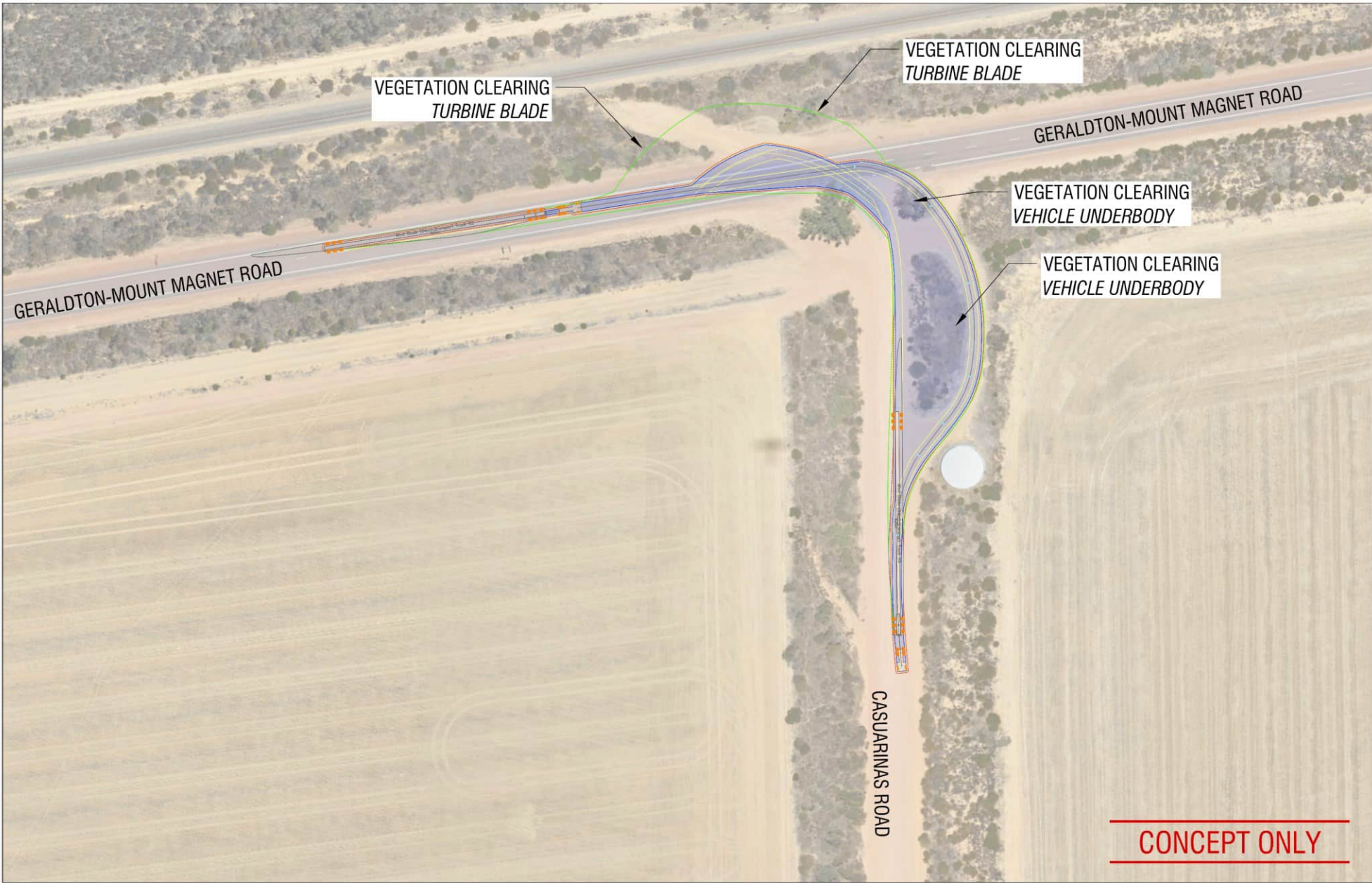
- No private property impacts are anticipated.
- No impact on the large tree is anticipated.

✗

- Vegetation removal and impact on the small tree should be expected.
- Hardstand widening may be required.

○

- The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.



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Project No: 675.072296

Date: 30/01/2025

Drawn by: DM

Reviewed by: CS

Sheet Size: A3

Projection: -

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)

SCALE 1:1000

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 2 (OPT B)



LOCATION 3 OPTION A

Casuarinas Road and Edward Road Intersection

SUMMARY

The turbine blades will be unable to navigate this intersection without property impacts.

- ✓

 - N/A
- ✗

 - Private property impacts on several properties should be expected.
 - Vegetation clearance should be expected.
 - Client-supplied aerial imagery indicates that a segment of Casuarinas Road has been graded over. This should be investigated following the approval of the development application. However, during a site inspection undertaken in August 2024, the road appeared fine and there was no indication of being graded over.
 - Hardstand widening may be required.
- - The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.



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Project No:	675.072296
Date:	30/01/2025
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Sheet Size:	A3
Projection:	-

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)

SCALE 1:1000

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 3 - NORTH TO WEST



LOCATION 3 OPTION B

Casuarinas Road and Edward Road Intersection

SUMMARY

The turbine blades can navigate this intersection without any critical impacts.

✓

- No private property impacts are anticipated.
- No vegetation clearance or tree trimming is anticipated.

✗

- N/A

—

- N/A



Project No: 675.072296

Date: 30/01/2025

Drawn by: DM

Reviewed by: CS

Sheet Size: A3

Projection: -

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)

0 10 20 30 40

SCALE 1:1000

METRES

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 3 - NORTH TO SOUTH



LOCATION 4 OPTION A

Nangetty-Walkaway Road and Casuarinas Road Intersection

SUMMARY

The turbine blades will be unable to navigate this intersection without property impacts.

✓

- No vegetation clearance or tree trimming is anticipated.

✗

- Impacts on one property should be expected.
- Vegetation clearance should be expected.
- Hardstand widening may be required.

-

- N/A



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Drawn by: DM

Reviewed by: CS

Sheet Size: A3

Projection: -

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)

0 10 20 30 40

METRES

SCALE 1:1000

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 4 - NORTH TO WEST (OPT A)

15

LOCATION 4 OPTION B

Nangetty-Walkaway Road and Casuarinas Road Intersection

SUMMARY

The turbine blades can navigate this intersection without any critical impacts.

✓

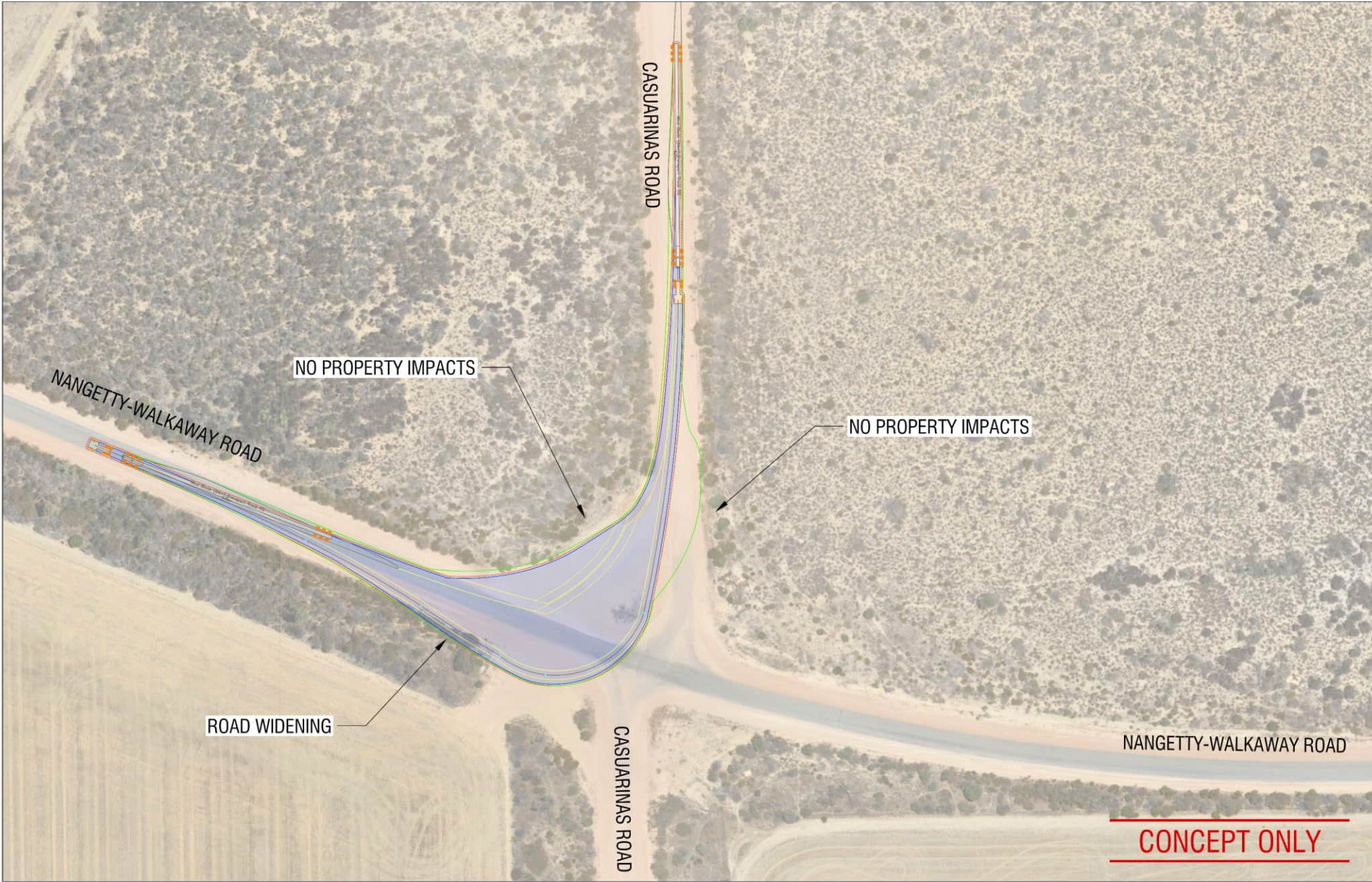
- No private property impacts are anticipated.
- No tree trimming is anticipated.

✗

- Vegetation clearance may be required.
- Hardstand or road widening will be required.

○

- The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.



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Projection:	-

SWEPT PATH LEGEND

- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels
- Rear Wheels

CONFLICT LEGEND

- Non-critical (5.0m Diameter)
- Critical (5.0m Diameter)

SCALE 1:1000

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 4 - NORTH TO WEST (OPT B)



LOCATION 4 OPTION C

Nangetty-Walkaway Road and Casuarinas Road Intersection

SUMMARY

The turbine blades can navigate this intersection without any critical impacts.

✓

- No private property impacts are anticipated.
- No tree trimming is anticipated.

✗

- Vegetation clearance may be required.
- Hardstand or road widening will be required.

○

- The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.



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Projection:	-

SWEPT PATH LEGEND

- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels
- Rear Wheels

CONFLICT LEGEND

- Non-critical (5.0m Diameter)
- Critical (5.0m Diameter)

SCALE 1:1000

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 4 - NORTH TO EAST



LOCATION 5 OPTION A

Nangetty-Walkaway Road and Kiely Road Intersection

SUMMARY

The turbine blades will be unable to navigate this intersection without property impacts.

✓

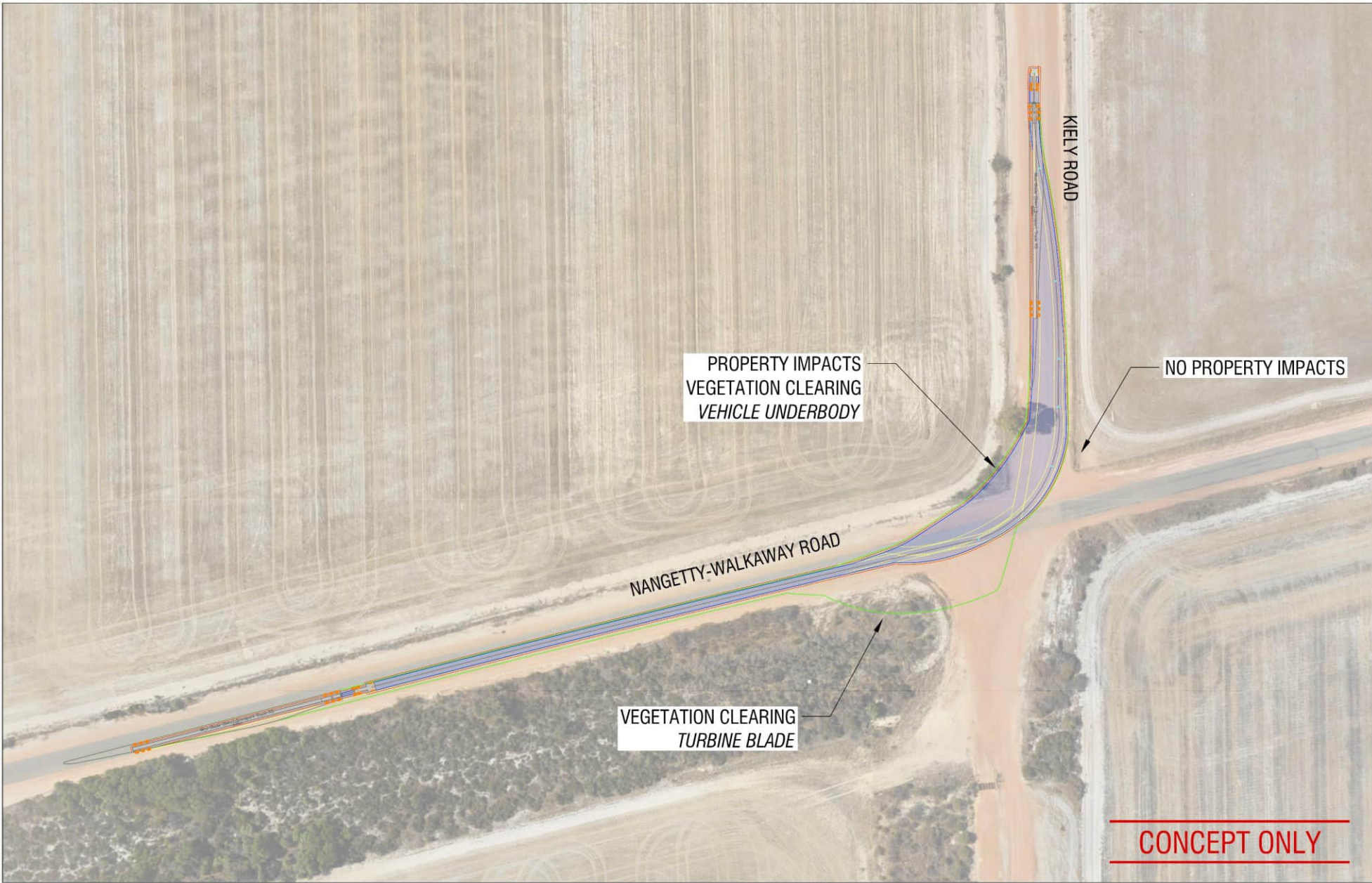
- No tree trimming is anticipated.

✗

- Impacts on one property should be expected.
- Vegetation clearance should be expected.
- Hardstand widening may be required.

-

- The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.



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Project No: 675.072296

Date: 30/01/2025

Drawn by: DM

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Sheet Size: A3

Projection: -

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)

0 10 20 30 40

SCALE 1:1000

METRES

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 5 - WEST TO NORTH (OPT A)

18

LOCATION 5 OPTION B

Nangetty-Walkaway Road and Kiely Road Intersection

SUMMARY

The turbine blades can navigate this intersection without any critical impacts.

✓

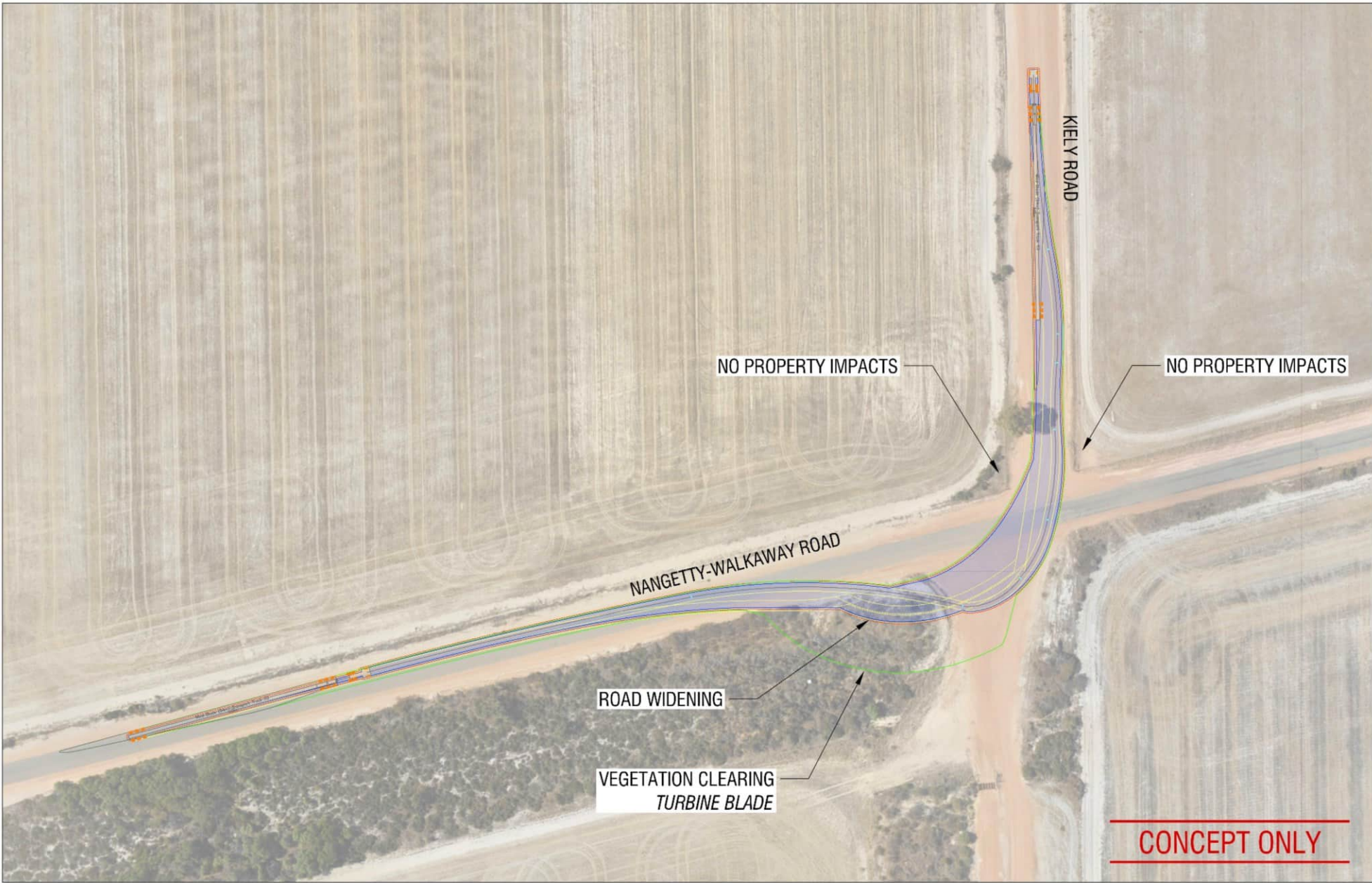
- No private property impacts are anticipated.
- No tree trimming is anticipated.

✗

- Vegetation clearance will be required.
- Hardstand or road widening may be required.

○

- The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.



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Reviewed by:	CS
Sheet Size:	A3
Projection:	-

SWEPT PATH LEGEND

- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels
- Rear Wheels

CONFLICT LEGEND

- Non-critical (5.0m Diameter)
- Critical (5.0m Diameter)

SCALE 1:1000

Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 5 - WEST TO NORTH (OPT B)

19

LOCATION 5 OPTION C

Nangetty-Walkaway Road and Kiely Road Intersection

SUMMARY

The turbine blades will be unable to navigate this intersection without property impacts.

✓

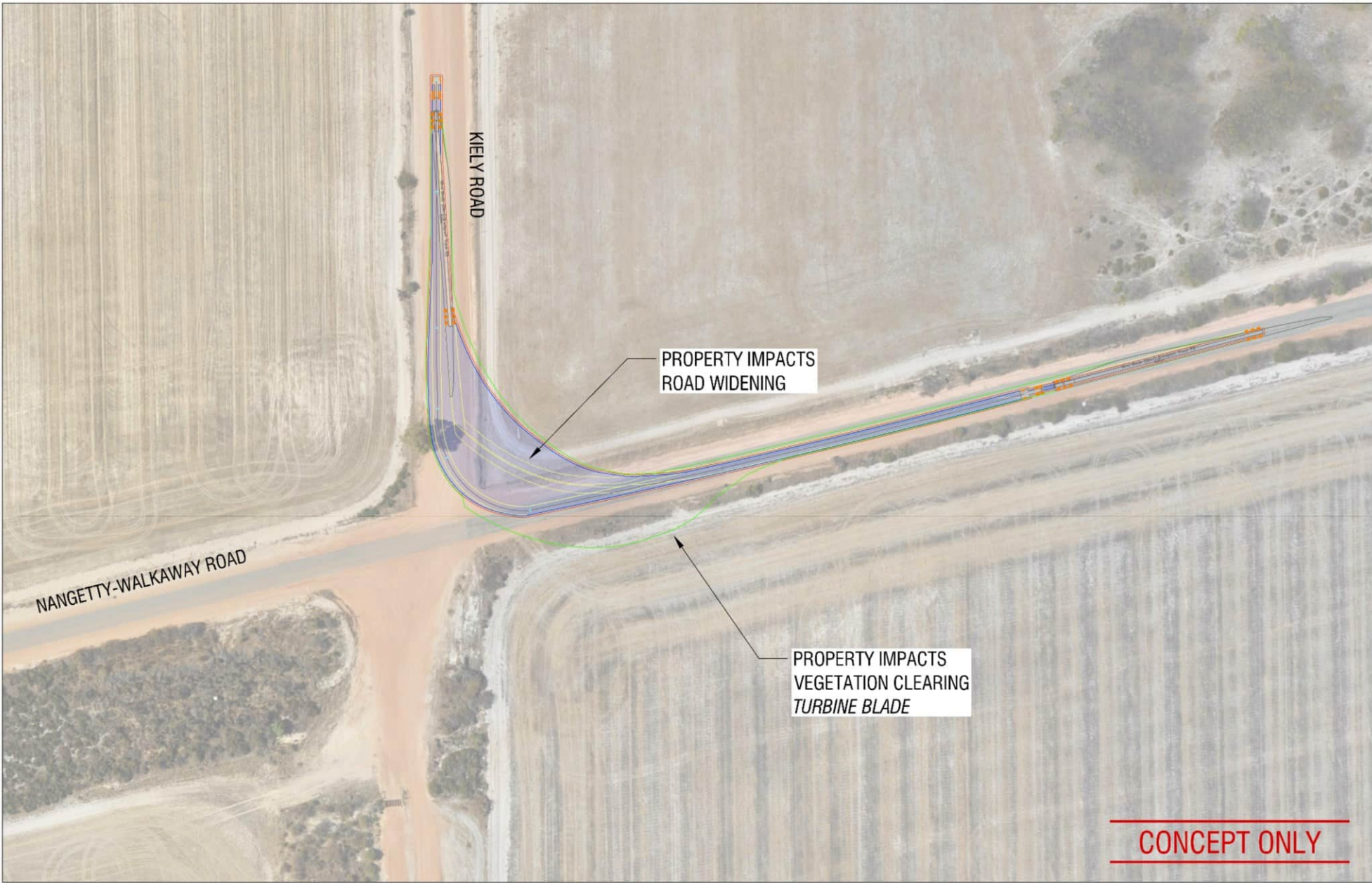
- No tree trimming is anticipated.

✗

- Impacts on two properties should be expected.
- Vegetation clearance should be expected.
- Hardstand widening may be required.

—

- The body of the transport vehicle and the turbine blade may be able to travel over low vegetation.





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Reviewed by:	CS
Sheet Size:	A3
Projection:	-

SWEPT PATH LEGEND

Vehicle Path

Vehicle Body

Body Clearance

Front Wheels

Rear Wheels

CONFLICT LEGEND

Non-critical (5.0m Diameter)

Critical (5.0m Diameter)


SCALE 1:1000
METRES

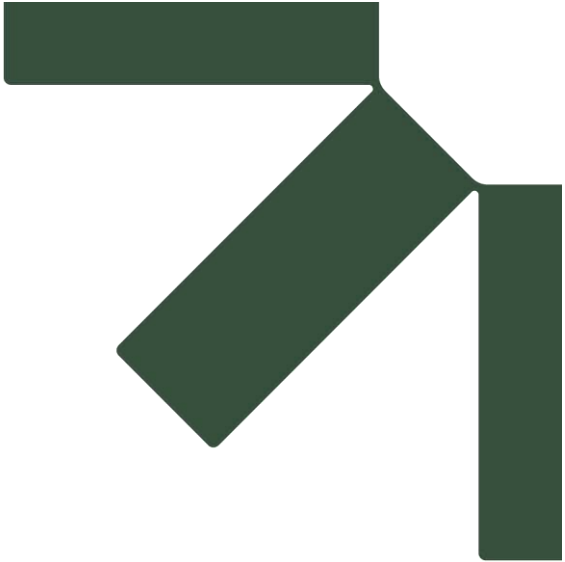
Vestas

MID WEST WIND FARM

OSOM Alternative Route Study

LOCATION 5 - EAST TO NORTH





Appendix A Development Plans

OSOM Material Route Study

Mid West Wind Farm

VESTAS

SLR Project No.: 675.072296.00016

11 February 2025

300000

350000

6850000

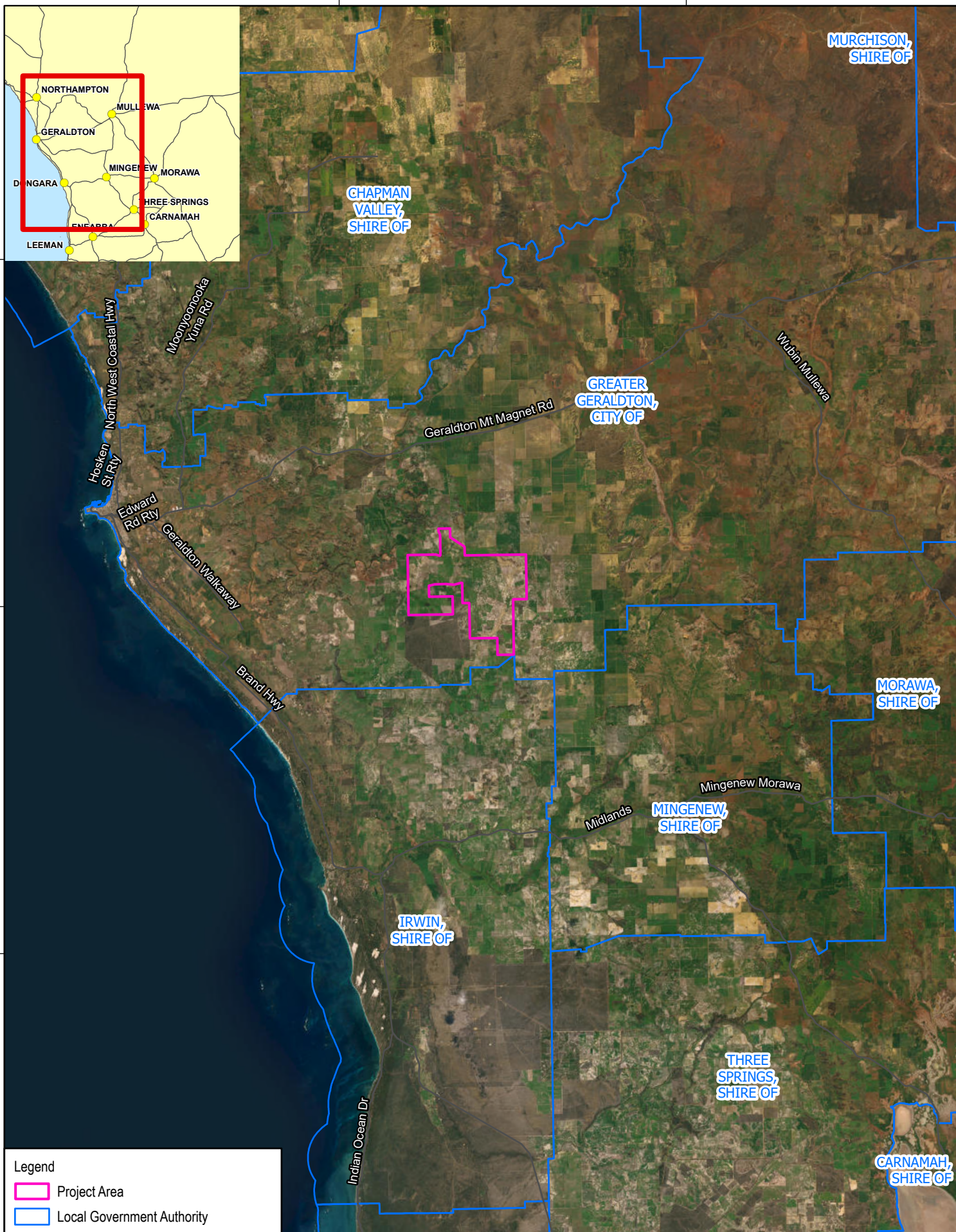
6850000

6800000

6800000

6750000

6750000



Legend

- Project Area
- Local Government Authority



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0 10 20 Km

Coordinate System: GDA2020 MGA Zone 50

Scale: 1:700,000 at A4

Project Number: 072296

Date Drawn: 22-Apr-2026

Drawn by: CP

Reviewed by: JC

Service Layer Credits:
Earthstar Geographics

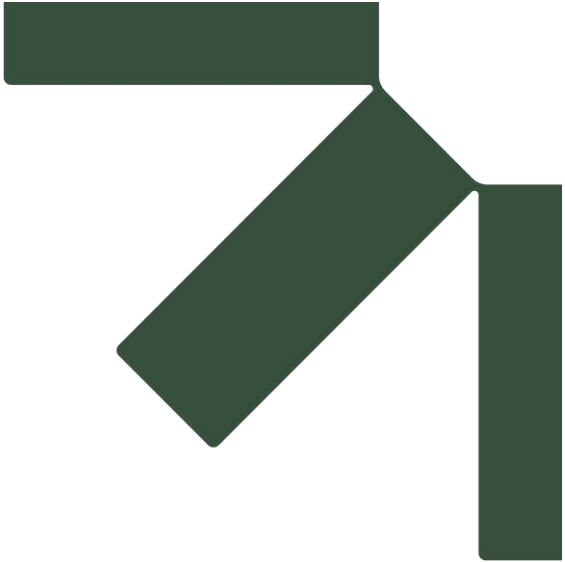
VESTAS

MID WEST WINDFARM

SITE LOCATION

FIGURE 2

Path: H:\Projects-SLR\675-PER\675-PER\675.072296.00001 Geraldton Power-to-X Wind Farm\06 SLR Data\01 CADGIS\GIS\072296_Mid_West_Transport_advisory\072296_Mid_West_Transport_advisory mapping\072296_Mid_West_Transport_advisory mapping.aprx\



Appendix B Mid West Wind Farm OSOM Material Route Study REV 0 (Ares Group)

OSOM Material Route Study

Mid West Wind Farm

VESTAS

SLR Project No.: 675.072296.00016

11 February 2025



MID WEST WIND FARM

OSOM Route Study

Date: April 2024
Client: Luke Barber
Vestas
Type: Physical Survey
Rev: 0

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Revision History

Revision	Date	Details	Prepared	Checked	Approved
0	08/04/2024	First issue	ICW	ICW	JJM

Disclaimer

This report has been prepared for advisory purposes only. Information provided within the report is based on data provided by the Client as well as publicly available information and, to the best of ARES Project Services Pty Ltd's knowledge and experience, is accurate at the time of publication. All proposed routes, methodologies and schedules described in this report are subject to approval and issue of permits from the relevant stakeholders. Transport equipment is based on ARES Project Services Pty Ltd vehicles and trailers, and swept path analysis results may differ if using equipment by third parties.

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Introduction

Mid West WF is a proposed onshore renewable energy development located in Western Australia, consisting of up to 102 wind turbine generators with blades 84m long. The project is located approximately 40km east of Geraldton in the City of Greater Geraldton.

Ares have been tasked by our customer, Vestas, to undertake a Route Survey from the Port of Geraldton to site. The purpose of the study is to determine the pinch points along the route and give best estimates of modifications and works required to enable oversize overmass (OSOM) cargo to be brought to site.

The study is designed for those involved in the project that have a limited knowledge of transportation, including a comprehensive outline of the routes and actions required to achieve delivery.

Murra Warra WF

Murra Warra Stage 1 components had to be transported over 250km from the Port of Portland to site. Cargo included 5.8m diameter towers such as these pictured.





01

Overview

Project Overview

The Mid West WF is a renewable energy development in Western Australia currently in the early stages of planning.

Scope of Survey

Mid West WF is located in the Mid West region of Western Australia, approximately 40km south-east of the town of Geraldton. It is near the existing Walkaway and Mumbida Wind Farms.

ARES has been tasked with surveying the route from the proposed Port of Import (Geraldton) to the construction site. The survey includes everything from the discharge berth, transfer to port storage area, and road transport from port to site. An assessment of the turns into potential site entrances was not conducted.

ARES physically drove the route in March 2024. The aim of the drive was to visually verify the results of an initial desktop study, take physical measurements and obtain drone footage at pinch points where the existing aerial imagery from sources such as Google and Nearmaps was of insufficient quality.

No engagement has been undertaken with the transport authority (Main Roads WA) as yet, as the project is still in the early stages of planning. Once the project scope and route firms, we highly recommend engaging with MRWA as soon as possible to firm up OSOM transport and permit requirements.

Port of Import

The Port of Geraldton serves as a vital import/export hub into the mid western region of WA. Much of its operation is driven by iron ore, grain and mineral exports, and a

diverse range of imports. In recent years, driven by the renewable energy needs in the mining sector, the port has played host to some smaller wind projects, most recently for the Kathleen Valley Wind Farm project in late 2023 (5 wind turbines). Note that Geraldton is **not** an approved First Point of Entry (FPOE) for general goods, so special arrangements have to be made to berth here.

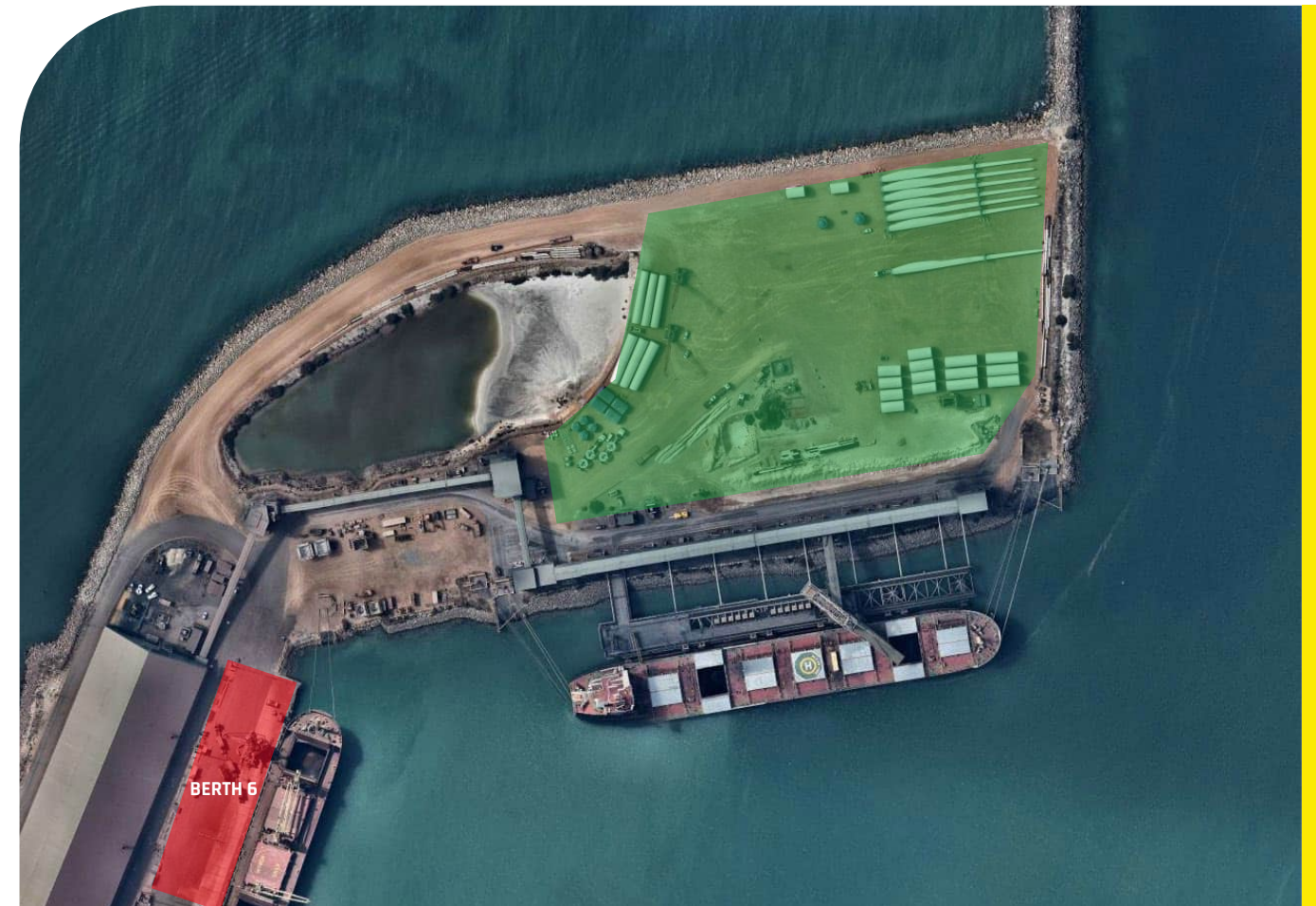
The primary berth for break bulk cargo is Berth 6, which has a small storage area adjacent to the berth (~20,000sqm total). The layout of the berth area is shown in the bird's eye view to the right.

Geraldton Port has excellent connections to the freight network. For heavy vehicle traffic, there are direct connections to highways to the north, south and east which bypass the built up areas around the town, and the area is generally clear of low bridges and other overhead obstructions.

Site

The project site is mainly situated between Ellendale and West Casuarinas. Due to the early stage of the project, the site access point(s) have not been confirmed, but ARES surveyed a number of local roads leading to the proposed entrances from both the north and south to provide options for the project proponent when selecting the preferred OSOM haulage route for the project.

The wind farm is located in primarily agricultural land and the topography is very flat. There should be no issues with steep gradients on site roads.



Above: Aerial view of Geraldton Port, showing berth (red) and storage area (green). **Below:** Nangetty-Walkaway Rd, showing general flat terrain.



Transport Methodology

Specialised cargo requires specialised transport solutions.

Cargo Dimensions

The wind turbine model assumed for this route survey will be a Vestas V172, 149m hub height with the following transport envelope:

- Length: 84.3m (Blade)
- Width & Height: ~6.0m (Base tower sections)

The other wind turbine components such as nacelle, drivetrain, hub and other tower sections will fall within this envelope and are hence not considered separately.

The blade is comparable in length to current generation blades, which are around the 80-82m mark, so transport requirements will not be much different.

The spacing of the support frames for the blade is important, as this changes the swept path of the trailer. We do not have any data from the OEM on the spacings for the V172 blade, but have assumed a ~60m spacing, which leaves an overhang of just over 20m. This is a pretty typical overhang and similar to current generation blades, so it can be considered to be a conservative assumption.

Tower dimensions are not yet available but we have assumed a diameter of around 6.0m for the widest section, which is typical for a wind turbine tower with hub height of around 120-160m. There is some room to increase the diameter further for this project as the bridges out of Geraldton require around 6.4m clearance.

Equipment

The trailing equipment required to carry the components to site are already in use by specialist oversize transporters in Australia. The blades will most likely be transported using fixed length blade trailers, as they are too long for the typical telescopic extendable blade trailer. Another option would be a jinker style trailer, although this style of trailer has only been used for blades overseas and not in Australia.

The largest towers will likely be transported on either bookend style trailers or low bed platform trailers to keep the transport height down to reduce the number of power lines requiring lifting and clear under the overhead structures along the route. Bookend sets are already in use but may require modifications to suit the larger diameter and weight of the towers.

The remainder of components can be transported on platform and low loader trailers which are very commonly used.

An equipment schematic mocking up components on proposed trailing equipment is provided on the next page. This is indicative only and equipment selection will be contingent on final component weights and dimensions.

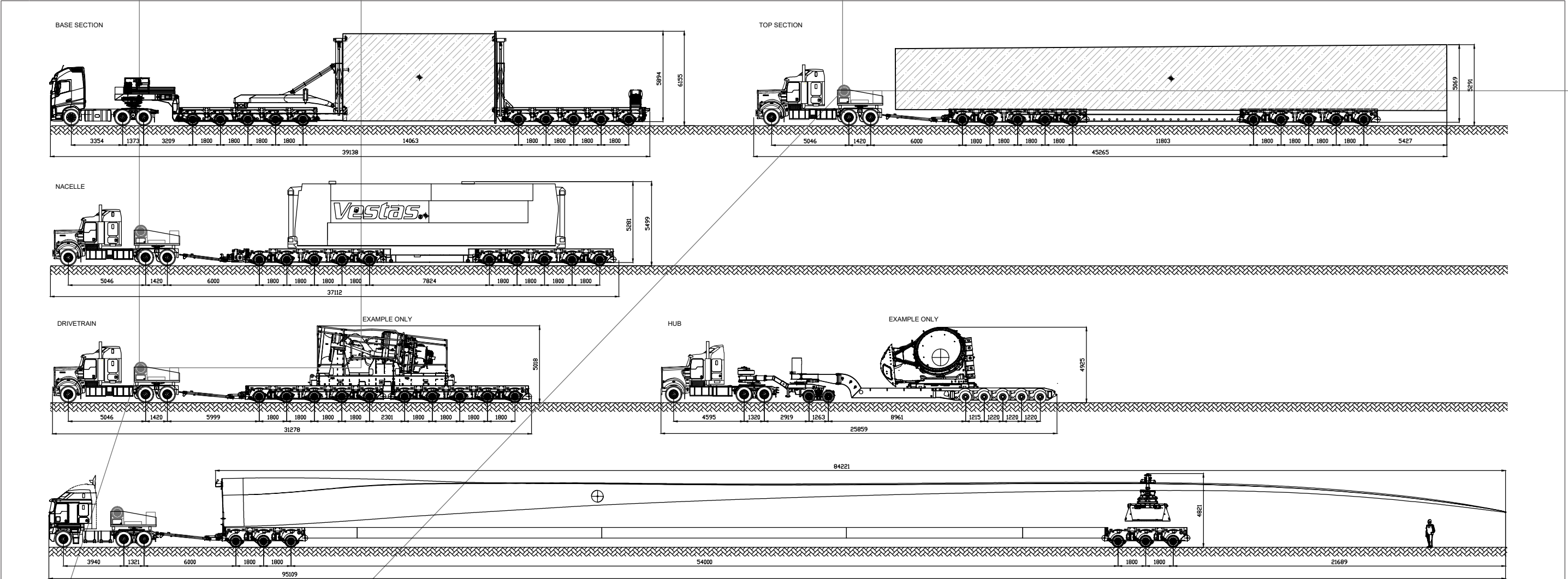


Above: Bookend Trailers used by ARES for Murra Warra's 5.8m towers

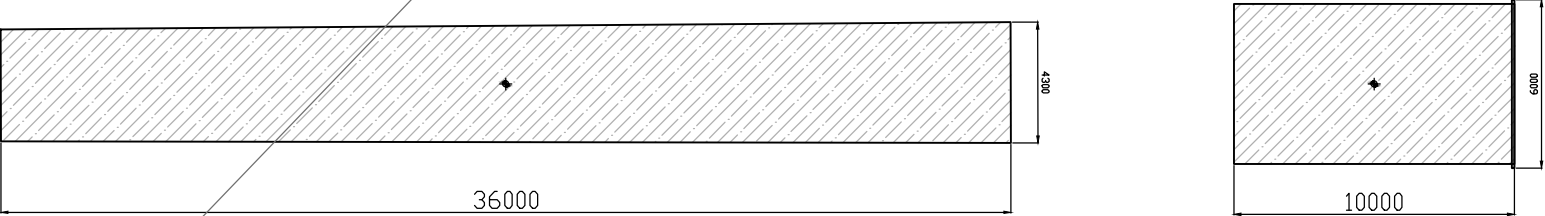


Above: Extendable blade trailers loaded with 75m blades for the Yandin project in Western Australia.

Equipment Schematic



Tower Specifications



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Port Operations at Geraldton

Information pertaining to vessel discharge operations and transfer of cargo to short term storage/ laydown.

Ship Discharge

Berth 6 (in red on the right) has a length of 190m and is exposed to swells which can delay discharge operations. Trailers required would be blade trailers for the blades, platform trailers (up to 12 axles) for large tower sections and heavier components such as the drivetrain, and low loaders for the other components.

Loading of components onto trailers is expected to be via ship's cranes.

Transfer to Storage

Transporting components to the Berth 6/7 storage area (in green) will require some tricky manoeuvring especially with blades, but is achievable with a couple of options shown with the red arrows.

For a project of this size, further port storage will be required. Mid West Port Authority have long term plans to convert existing land into laydown areas (shown roughly in blue). Timeframes are unknown at this stage and further consultation with the port will be required to obtain more details.



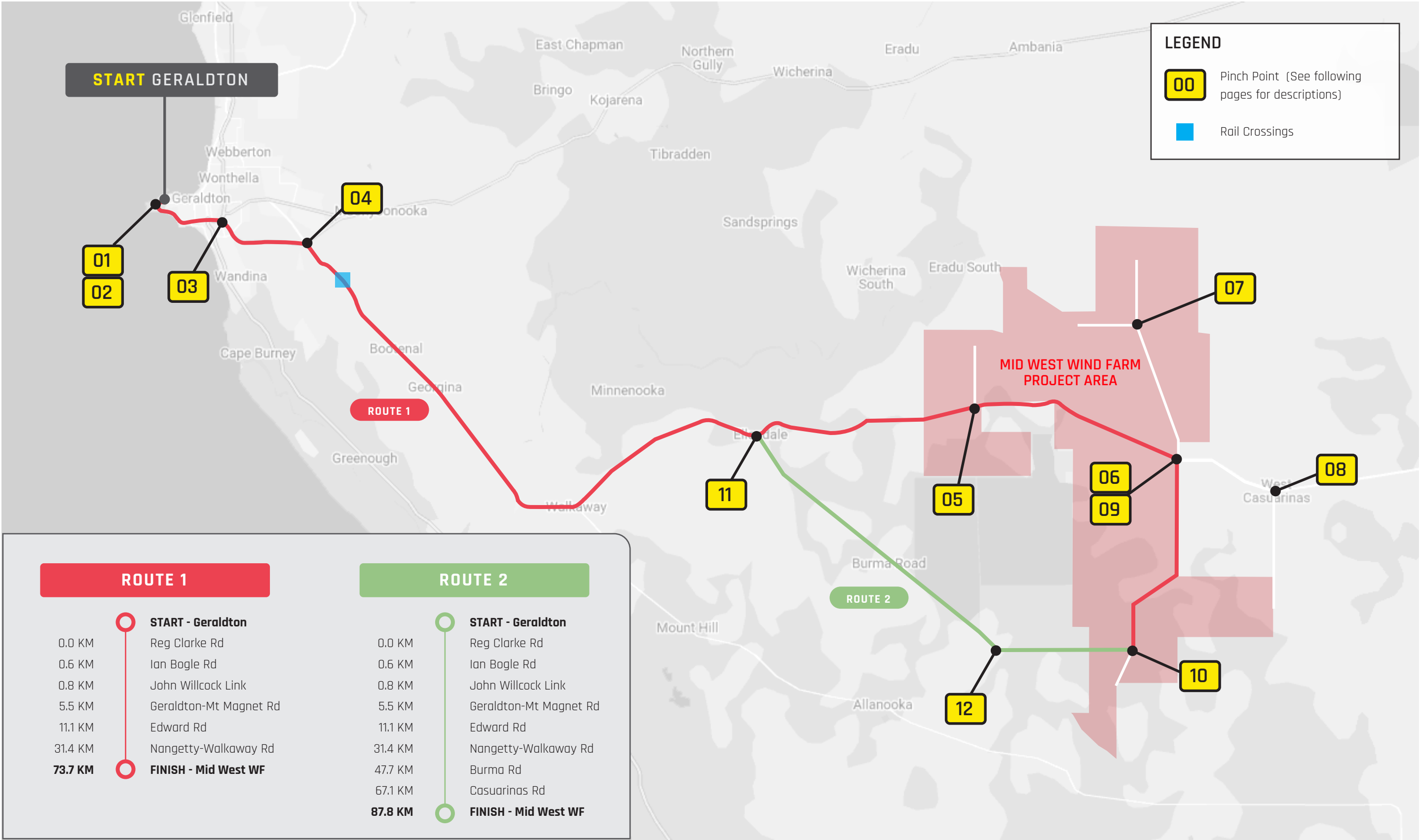


02

**Route - Geraldton to Mid
West WF**

Route Overview

[INTERACTIVE MAP LINK](#)



Geraldton to Mid West WF

General Route Notes

Road Quality

The transport route is along state maintained highways and roads up to Walkaway, which are generally designed to a higher specification and able to handle heavier and higher volumes of traffic. Beyond Walkaway the roads are classified as local roads but are in good condition.

The route is paved up to and including Nangetty-Walkaway Rd. All of the local roads around the wind farm site along with Burma Rd are gravel, generally very wide (10-15m) and in fair condition. Some parts of Burma Rd are corrugated and will need resurfacing if used for heavy vehicles.

Overhead Structures

There are several overhead structures on the route, all on the stretch leaving Geraldton. The lowest of these have a height clearance of **6.4m** with limited bypass options, so they dictate the maximum loaded height on this route.

- Cathedral Ave overpass of John Willcock Link
- Highbury St overpass of Geraldton-Mt Magnet Rd
- Abraham St overpass of Geraldton-Mt Magnet Rd

Overhead Power Lines

In general, a travel height below around 5.5m is not an issue with respect to power lines. Loads above 5.2m travel height will require a high load permit from the power authorities prior to travel.

An overhead powerline survey (performed by the power authority) is recommended to determine exact line heights and ascertain if any lines need to be temporarily or permanently lifted prior to the load going through.

For this project, with tower sections up to 6.0m (or larger) in diameter, high load permits will be required. High wire escorts may also be required to accompany the loads and perform any line lifting needed. This will need to be confirmed with the power authorities.

The route traverses through the Western Power distribution network.

Bridges and Culverts

There is one major bridge crossing along the route, at Walkaway over the Greenough River. This is listed as restricted for Class 1 Restricted Access Vehicles. The bridge has been earmarked for replacement by the City of Greater Geraldton, with timeframes unknown. Further consultation with the City of Greater Geraldton is required to determine timings and possible impacts to the project.

Nangetty-Walkaway Rd over Greenough River
GPS: <https://maps.app.goo.gl/h9ZZrV5sYijQsNEa7>

There are a number of minor culverts along the local road network which will need assessment by the respective local shires.

Rail Crossings

There is one rail level crossing along the route as noted below. Permissions will be required from rail authorities to travel through this crossing. Other requirements such as track protection officers, signallers etc. may also be required.



Above: Nangetty-Walkaway Rd Bridge over Greenough River, Walkaway. (Source: City of Greater Geraldton)

Edward Rd Level Crossing, Narngulu
Rail Authority: Arc Infrastructure
GPS: <https://maps.app.goo.gl/GZy6Jfr4goTEN9hD8>

Roadworks

There are no known roadworks or upgrade projects along the route, apart from the replacement of the bridge on Nangetty-Walkaway Rd previously mentioned.

We recommend regular consultation with Main Roads WA and City of Greater Geraldton to keep abreast of any planned works or projects on the route.

Approvals

All OSOM loads will require Permits from Main Roads WA prior to travel. The permits will state the approved route(s), vehicles and any special conditions which apply to travel. Transport operators will need to hold WA Heavy Vehicle Accreditation.

Blades are classified as "high risk OSOM" moves by MRWA and will require an approved OSOM Transport Management Plan in addition to a Permit.

Modifications to State Roads in WA will require review and approval from MRWA. Modifications to local roads will require approval from the local shire or council.

Third party approvals required include the port authority, rail authorities, and utility providers such as electricity and telecommunications.

Pinch Point

01

S TURN
Port Storage &
Reg Clarke Rd

ROUTE 1

ROUTE 2

The route out of the Berth 6&7 storage area at Geraldton is through Gate 3 and onto Reg Clarke Rd. There is a small kink in the road as it passes through Gate 3. The road surface here was recently widened to accommodate 80m blades, but 84m blades will require the security gate itself to be modified or widened out to allow the body of the blade to pass through safely.

There are long term plans to realign this gate and Reg Clarke Rd. Mid West Port Authority will need to be consulted regarding the timeframes for this work.



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ARES PROJECT SERVICES PTY LTD - ABN: 45 643 587 115					

Pinch Point

02

RIGHT TURN
Reg Clarke Rd
& Ian Bogle Rd

ROUTE 1

ROUTE 2

The sharp right angled turn on Reg Clarke Rd can be bypassed by cutting through the yard, which will need to be kept clear and empty during component transport.

The subsequent merge onto Ian Bogle Rd should be taken as straight as possible, going over the traffic islands where necessary. One sign will need to be made removeable.



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			PROJECT:	Mid West WF	SCALE NTS
			DRAWING TITLE:	SWEPT PATH DRAWING	SHEET NO:
		DRAWN BY:	DRAWING NAME:	Route Survey	REV
		DRAWN DATE:			
	CHECKED BY:	ARES PROJECT SERVICES PTY LTD - ABN: 45 643 587 115			

Pinch Point

03

RIGHT TURN
John Willcock Link &
Geraldton-Mt Magnet Rd

- ROUTE 1
- ROUTE 2

No modifications are required at this intersection, but the blades will need to contraflow, using the existing concreted area on the median to cross over to the incorrect side of John Willcock Link. The load then uses the slip lane and crosses back over onto the correct side of Geraldton-Mount Magnet Rd.

Traffic wardens will need to hold traffic in all directions whilst the manoeuvre is being completed.



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			PROJECT:	Mid West WF	SCALE NTS
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		DRAWN BY:	DRAWING NAME:	Route Survey	REV
		DRAWN DATE:			
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Pinch Point

04

RIGHT TURN
Geraldton-Mt Magnet Rd
& Edward Rd

- ROUTE 1
- ROUTE 2

The roundabout at Edward Rd will also require contraflowing for blades, crossing onto the incorrect side of the road prior to the roundabout and crossing back over at Edward Rd.

Traffic wardens will need to hold traffic on the roundabout and Edward Rd whilst the manoeuvre is being completed.



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			PROJECT:	Mid West WF	SCALE NTS
			DRAWING TITLE:	SWEPT PATH DRAWING	SHEET NO:
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		DRAWN DATE:			
	CHECKED BY:	ARES PROJECT SERVICES PTY LTD - ABN: 45 643 587 115			

Pinch Point

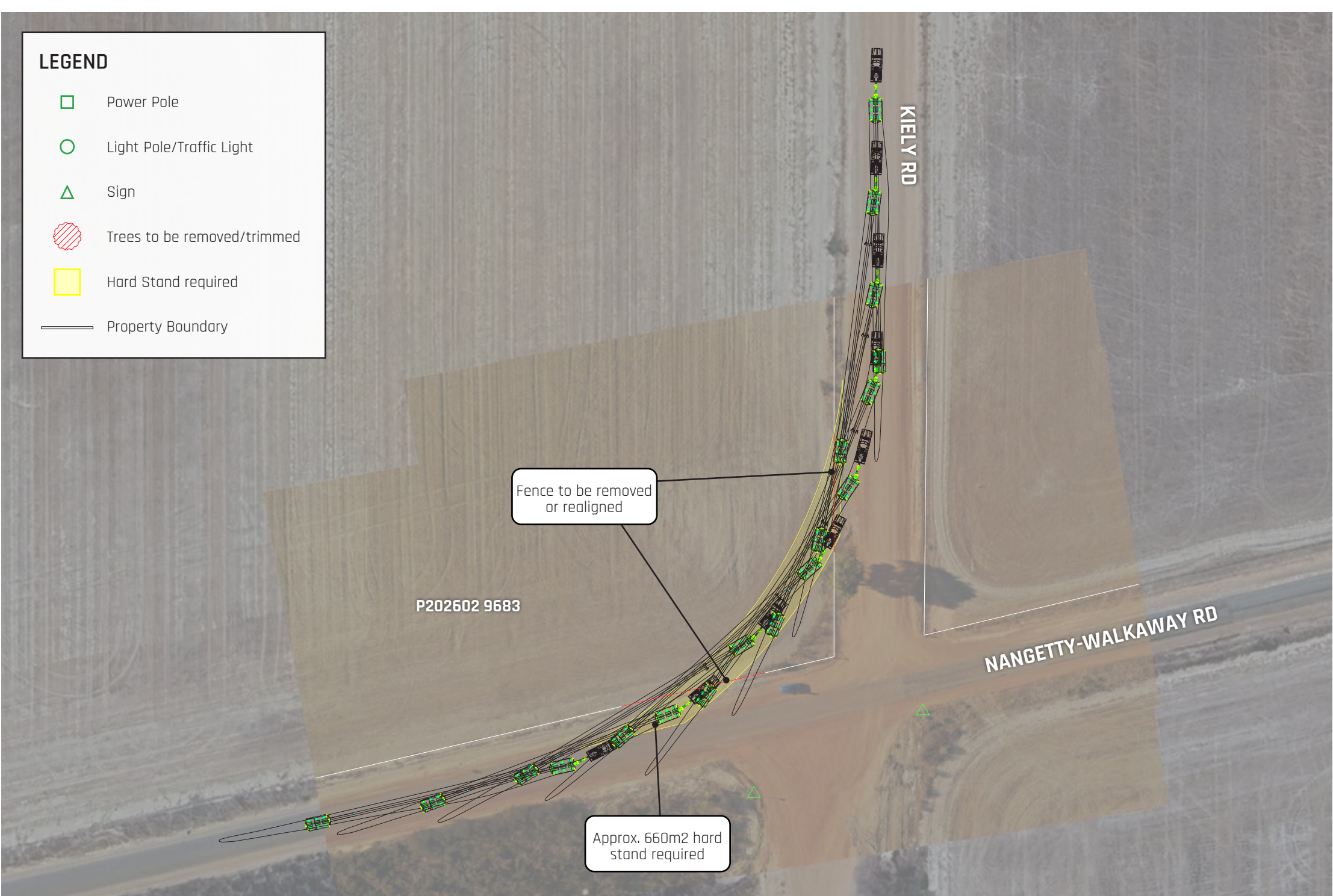
05

LEFT TURN
Nangetty-Walkaway Rd
& Kiely Rd

ROUTE 1

The north west section of the wind farm is accessed via a local road (Kiely Rd). The left turn onto Kiely Rd is tight with a tree close to the corner. The blades will need to cut the corner on the inside via a temporary hard stood track.

This will require works on private land (P202602 9683) and will require landholder approval.



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			PROJECT:	Mid West WF	SCALE NTS
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		DRAWN BY: DRAWN DATE: CHECKED BY:	DRAWING NAME:	Route Survey	REV
ARES PROJECT SERVICES PTY LTD - ABN: 45 643 587 115					

Pinch Point

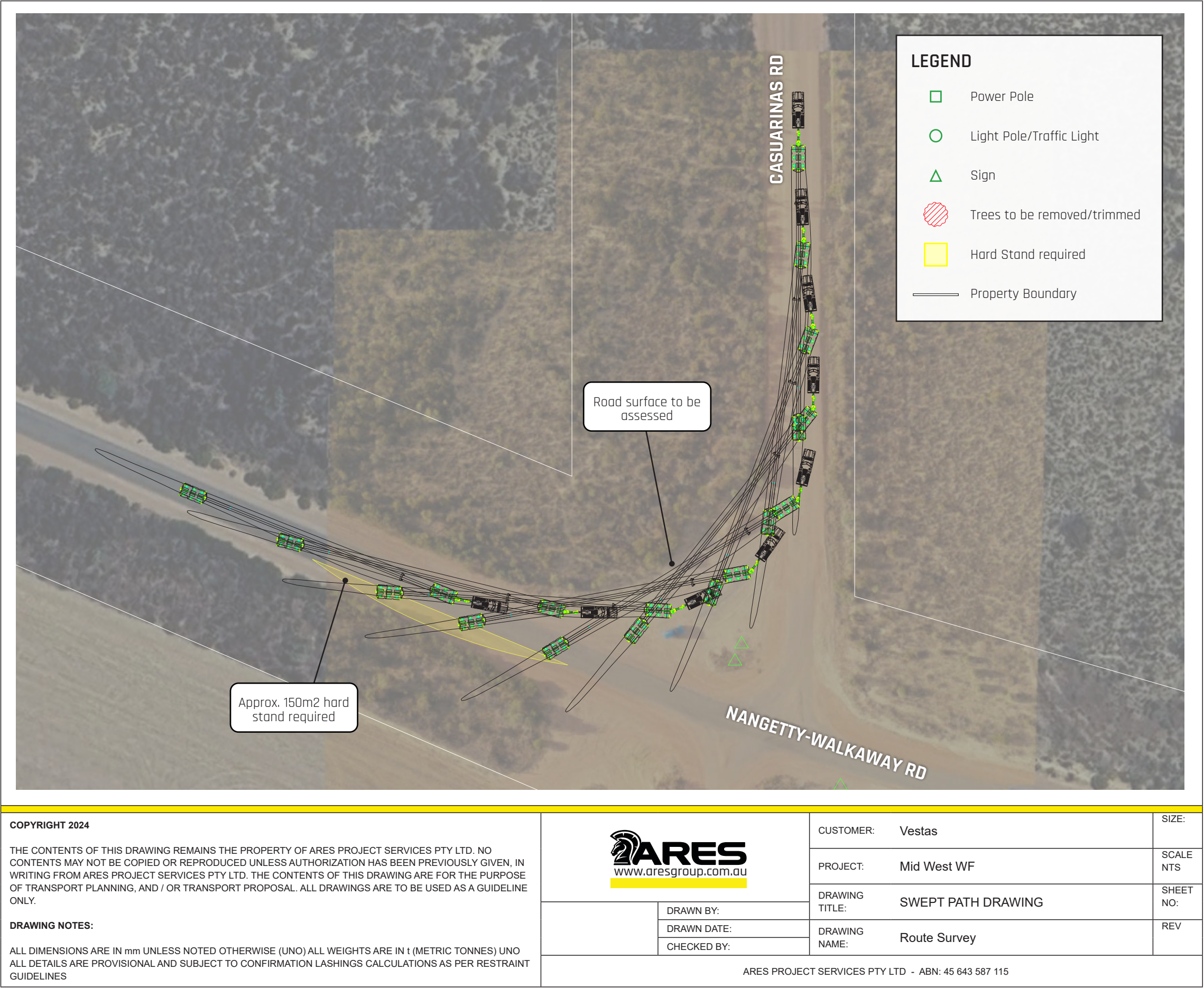
06

LEFT TURN
Nangetty-Walkaway Rd
& Casuarinas Rd

ROUTE 1

A small amount of hard stand material is required on the outside of the corner to turn left at this intersection. The inside is clear with existing gravel surface, this area will need to be investigated and assessed for suitability to cope with heavy vehicles and loads, and replaced with hard stand if necessary.

All works will be within the road reserve.



Pinch Point

07

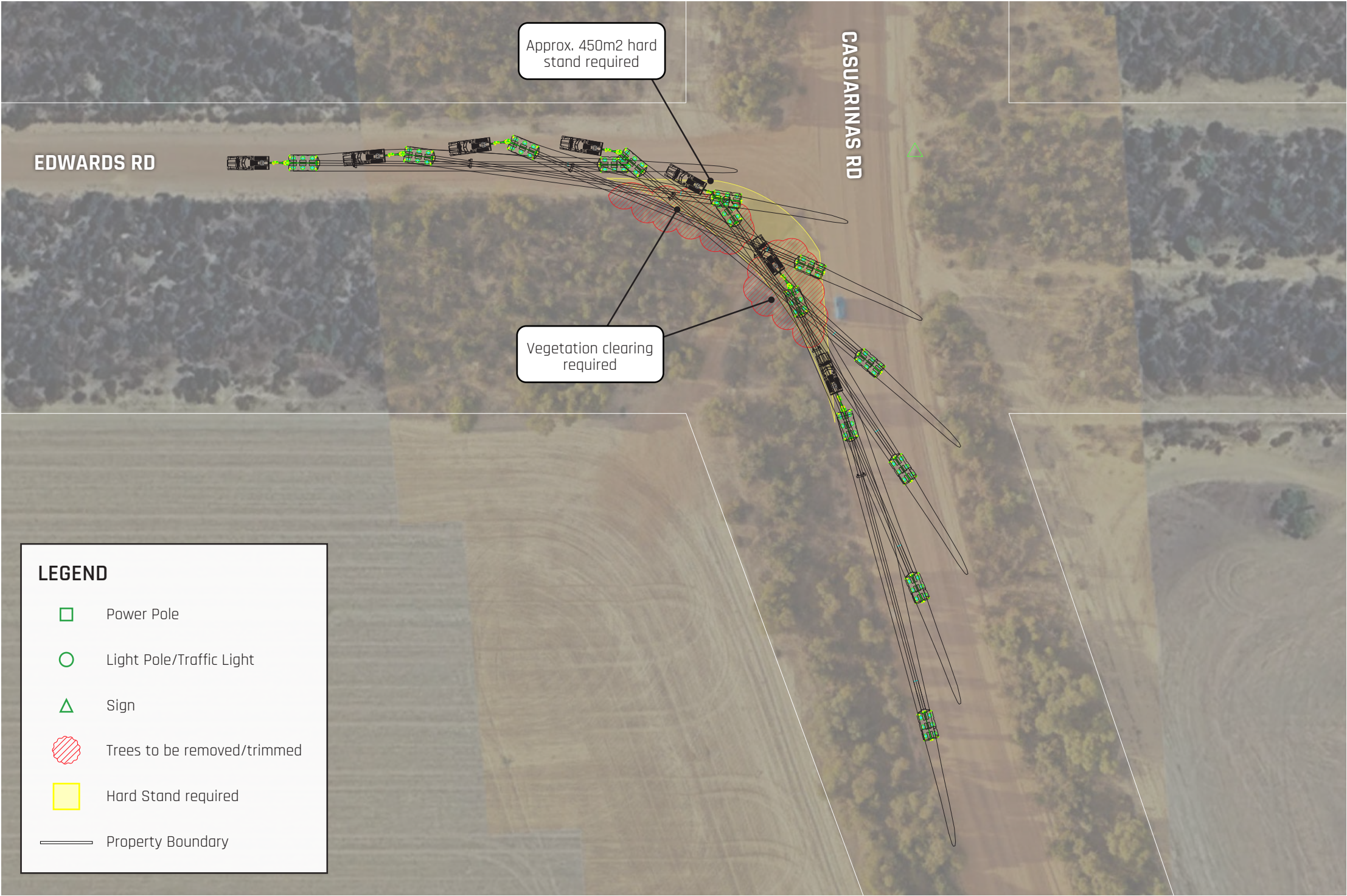
LEFT TURN
Casuarinas Rd &
Edwards Rd

ROUTE 1

The turn onto Edwards Rd is currently too tight for blades and will require widening on the inside. This includes some vegetation clearing and placement of a moderate amount of hard stand material.

The blade tip should clear the vegetation on the east side of Casuarinas Rd.

All works will be within the road reserve.



LEGEND

-  Power Pole
-  Light Pole/Traffic Light
-  Sign
-  Trees to be removed/trimmed
-  Hard Stand required
-  Property Boundary

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CUSTOMER: Vestas

PROJECT: Mid West WF

DRAWING TITLE: SWEPT PATH DRAWING

DRAWING NAME: Route Survey

SIZE:

SCALE NTS

SHEET NO:

REV

ARES PROJECT SERVICES PTY LTD - ABN: 45 643 587 115

Pinch Point

08

RIGHT TURN
Nangetty-Walkaway Rd
& Erangy Springs Rd

ROUTE 1

Blades will have to cut the corner at this turn, requiring clearing of some vegetation on the inside. Hard stand material will need to be laid down to accommodate truck and trailer wheels on both the inside and outside of the corner.

All works will be within the road reserve.



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			PROJECT:	Mid West WF	SCALE NTS
			DRAWING TITLE:	SWEPT PATH DRAWING	SHEET NO:
		DRAWN BY:	DRAWING NAME:	Route Survey	REV
		DRAWN DATE:			
	CHECKED BY:	ARES PROJECT SERVICES PTY LTD - ABN: 45 643 587 115			

Pinch Point

09

RIGHT TURN
Nangetty-Walkaway Rd
& Casuarinas Rd

ROUTE 1

Turning south at Casuarinas Rd will require a small amount of vegetation clearance and a moderate amount of hard stand material for the blades on the inside and outside of the corner.

All works will be within the road reserve.



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		DRAWN DATE:			
	CHECKED BY:	ARES PROJECT SERVICES PTY LTD - ABN: 45 643 587 115			

Pinch Point

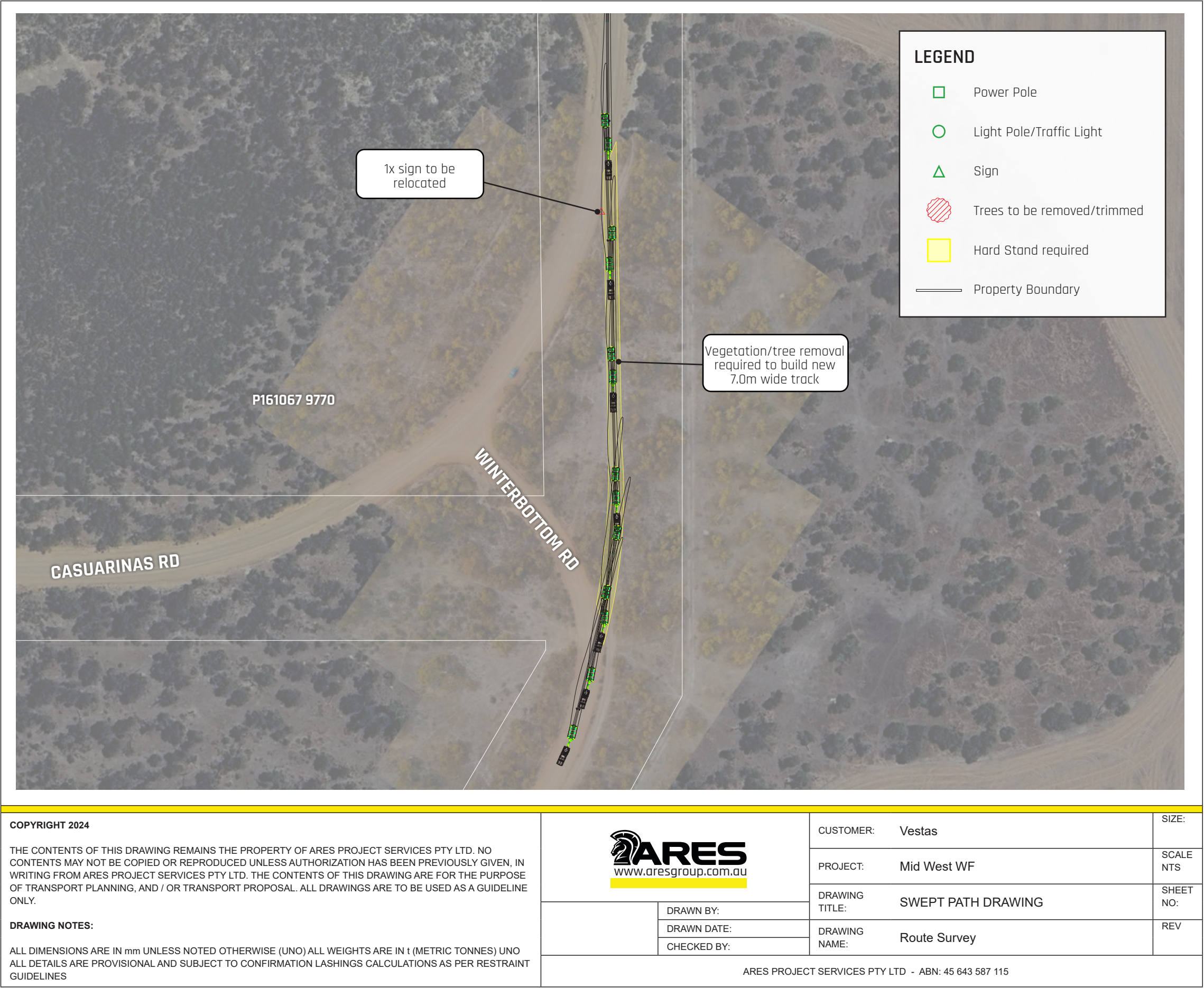
10

LEFT TURN
Casuarinas Rd &
Winterbottom Rd

ROUTE 1

The turn from Casuarinas Rd onto Winterbottom Rd currently does not align with the road reserve boundaries. Building a track that stays within the road reserve will make this intersection very straightforward for all loads.

Some tree clearing will be required to make the track sufficiently wide (7.0m minimum to accommodate the towers). One sign will also need to be relocated.



Pinch Point

11

RIGHT TURN
Nangetty-Walkaway Rd
& Burma Rd

ROUTE 2

Route 2 turns off Nangetty-Walkaway Rd at Burma Rd. A substantial amount of hard stand material will be required to allow the blades to run wide and keep the blade tip within the road reserve.



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CUSTOMER: Vestas

PROJECT: Mid West WF

DRAWING TITLE: SWEPT PATH DRAWING

DRAWING NAME: Route Survey

SIZE:

SCALE NTS

SHEET NO:

REV

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Pinch Point

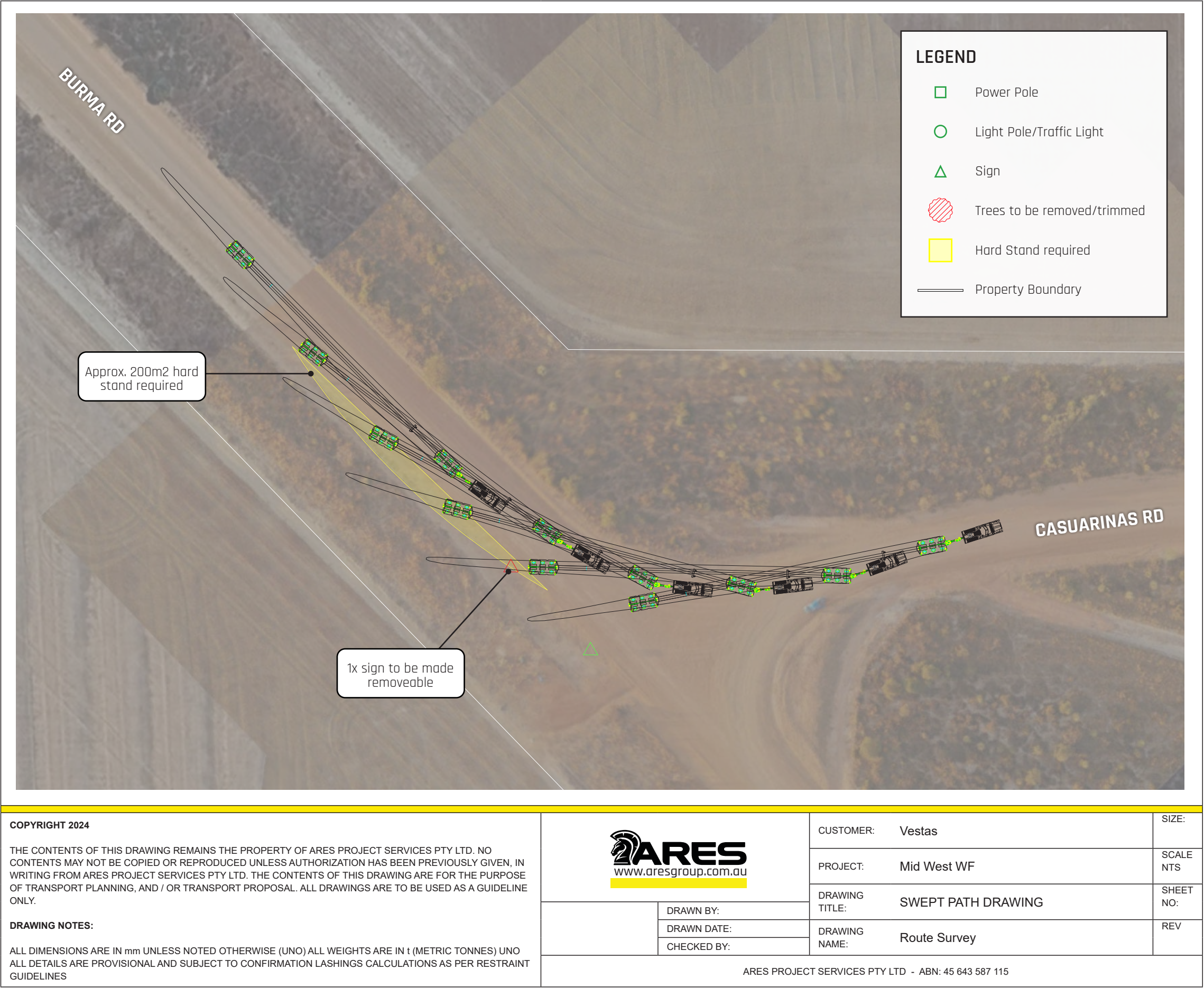
12

LEFT TURN
Burma Rd &
Casuarinas Rd

ROUTE 2

This intersection is very wide and will only require a small amount of hard stand and one sign to be made removeable.

All works will be within the road reserve.





03

Conclusion

Conclusion

A brief outline of the report's major findings and any recommendations for actions.



...transport
of OSOM
components to
Mid West WF is
feasible.

Summary

Following our physical survey and analysis, ARES believe that transport of the oversize overmass (OSOM) components (including 84.3m blades) for the Mid West WF project from the **Port of Geraldton** is feasible with appropriate modifications made to the route as noted in this report.

Geraldton Port has some known issues with receiving wind cargo: not being an FPOE for general goods for biosecurity purposes, Berth 6 being exposed to swells, and having limited storage space at the port. Mid West Port Authority has plans to address all of these points at some point in the future. We recommend close consultation with MWPA during project planning to confirm Geraldton's suitability for the project.

Two transport routes from Geraldton were assessed - Route 1 using Nangetty-Walkaway Rd and Route 2 using Burma Rd. Route 1 is preferred due to Nangetty-Walkaway Rd being paved, although Route 2 is still a viable backup option.

All local roads providing access to the wind farm were surveyed and assessed, there are no issues anticipated on these roads.

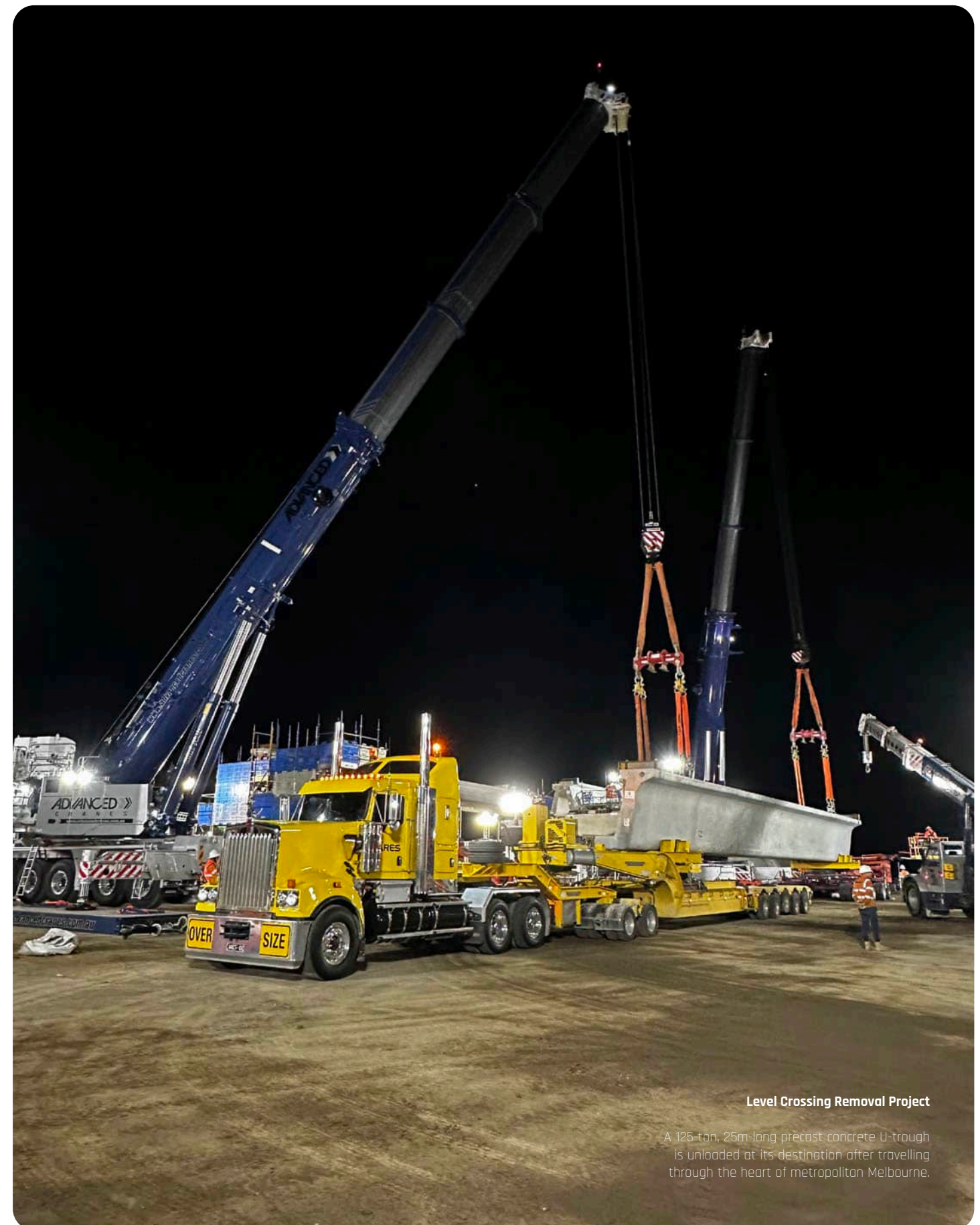
The amount of modifications required to the route is relatively minor considering the size of blade and

associated swept path under consideration. We have provided Summary of Road Modifications tables on the following page for convenient reference. Modifications on State roads will require approvals from Main Roads WA.

Next Steps

To progress the OSOM transport scope further from here, the following steps are recommended:

- Early engagement with transport authorities (MRWA) and local councils (City of Greater Geraldton and Shire of Irwin) to obtain feedback and approval of proposed route, proposed modifications and any special conditions
- Discussion with City of Greater Geraldton to determine the status of the Nangetty-Walkaway Rd Bridge replacement project
- Early engagement of power authorities (Western Power) to perform a formal overhead asset survey for the route
- Early engagement with Mid West Port Authority regarding project timing, berth and storage area availability and proposed port upgrades



Level Crossing Removal Project

A 125-ton, 25m-long precast concrete U-trough is unloaded at its destination after travelling through the heart of metropolitan Melbourne.

Summary of Road Modifications

The following table lists all required modifications to allow transport of components to take place.

Pinch Point	Road/Intersection	Modifications Required	Risk
01	Port Storage & Reg Clarke Rd	Gate 3 to be modified or widened	Medium
02	Reg Clarke Rd & Ian Bogle Rd	1x sign to be made removeable	Low
04	Geraldton-Mt Magnet Rd & Edward Rd	1x sign to be made removeable	Low
05	Nangetty-Walkaway Rd & Kiely Rd	Temporary hardstand to be laid down (approx. 660m2) on private land, fence to be removed or realigned	High
06	Nangetty-Walkaway Rd & Casuarinas Rd (turning north)	Temporary hardstand to be laid down (approx. 150m2)	Low
07	Casuarinas Rd & Edwards Rd	Temporary hardstand to be laid down (approx. 450m2), vegeta- tion to be cleared	Medium
08	Nangetty-Walkaway Rd & Erangy Springs Rd	Temporary hardstand to be laid down (approx. 520m2), vegeta- tion to be cleared	Medium
09	Nangetty-Walkaway Rd & Casuarinas Rd (turning south)	Temporary hardstand to be laid down (approx. 1,100m2), vegeta- tion to be cleared	Medium
10	Casuarinas Rd & Winterbottom Rd	New track required within existing road reserve, vegetation/tree clearing required (approx. 1,200m2), 1x sign to be relocated	High
11	Nangetty-Walkaway Rd & Burma Rd	Temporary hardstand to be laid down (approx. 1,400m2)	Medium
12	Burma Rd & Casuarinas Rd	Temporary hardstand to be laid down (approx. 200m2), 1x sign to be relocated	Medium

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Ares Project Services PTY LTD

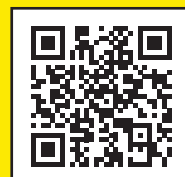
L105, 480 StKilda Rd
Melbourne VIC, 3004

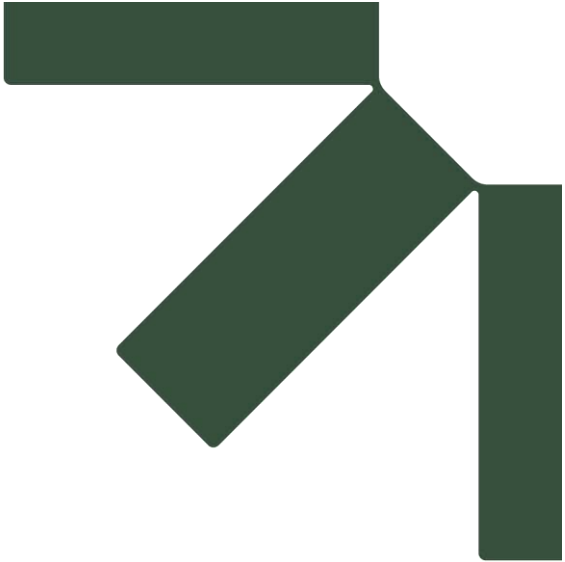
P: 1300 243 289

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E: enquiries@aresgroup.com.au

W: www.aresgroup.com.au





Appendix C VESTAS EnVentus V172-7.2 Wind Turbine Blade Specifications

OSOM Material Route Study

Mid West Wind Farm

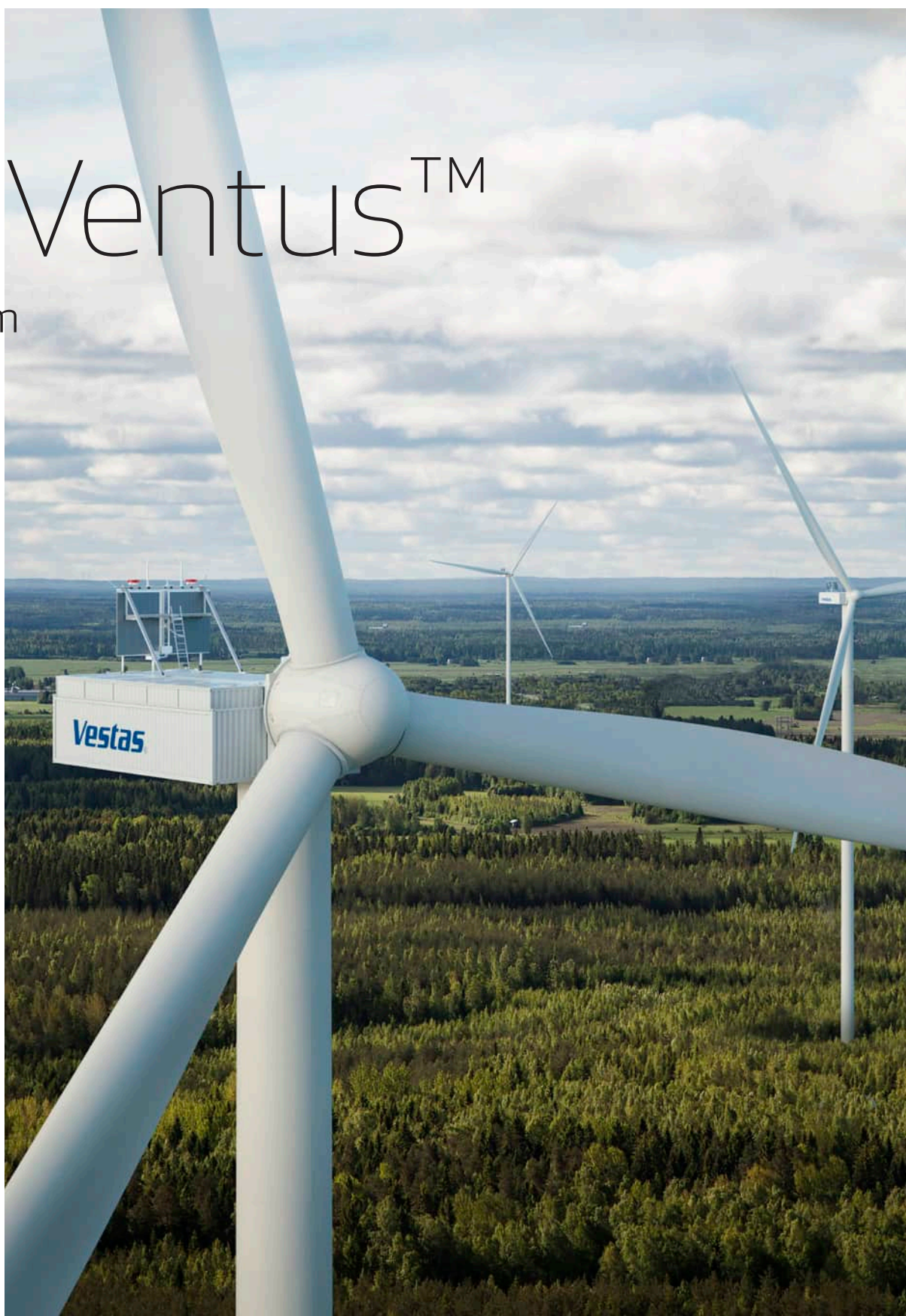
VESTAS

SLR Project No.: 675.072296.00016

11 February 2025

EnVentus™

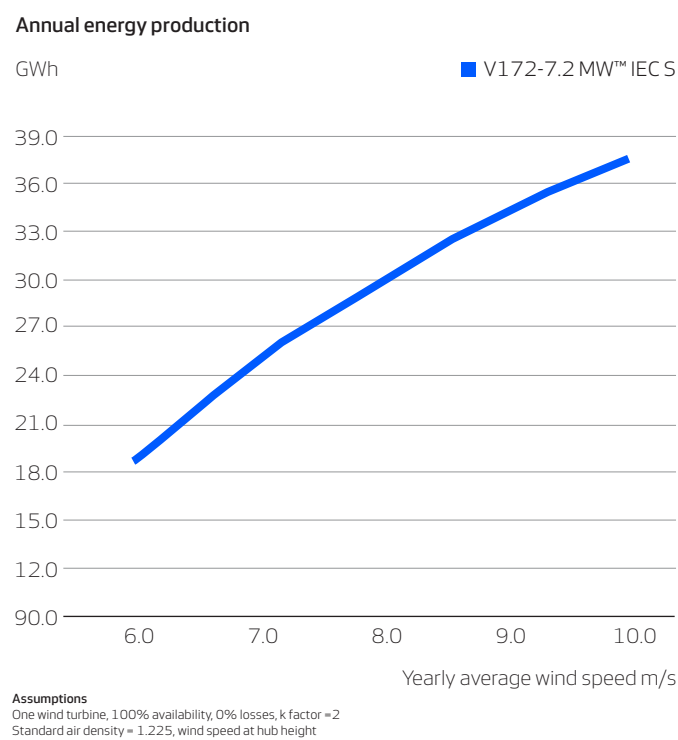
platform



V172-7.2 MW™ IEC S

Power regulation	Pitch regulated with variable speed		
Operating data			
Standard rated power	7,200kW		
Cut-in wind speed	3m/s		
Cut-out wind speed*	25m/s		
Wind class	IEC S		
Standard operating temperature range from -20°C to +45°C			
* High Wind Operation available as standard			
Sound power			
Maximum	106.9dB(A)*		
* Sound Optimised Modes available dependent on site and country			
Rotor			
Rotor diameter	172m		
Swept area	23,235m ²		
Aerodynamic brake	full blade feathering with 3 pitch cylinders		
Electrical			
Frequency	50/60Hz		
Converter	full scale		
Gearbox			
Type	two planetary stages		
Tower			
Hub heights*	114m (IEC S)**		
	150m (IEC S)**		
	164m (DIBt)		
	166m (IEC S)		
	175m (DIBt)		
	199m (DIBt)		
*Site specific towers available on request			
**Preliminary			

Turbine options	
- 6.5 MW Operational Mode	
- 6.8 MW Operational Mode	
- Oil Debris Monitoring System	
- High Temperature CoolerTop	
- Service Personnel Lift	
- Low Temperature Operation to -30°C	
- Vestas Ice Detection™	
- Vestas Anti-Icing System™	
- Vestas Shadow Flicker Control System	
- Aviation Lights	
- Aviation Markings	
- Fire Suppression System	
- Vestas Bat Protection System	
- Lightning Detection System	
Sustainability	
Carbon Footprint	6.4g CO ₂ e/kWh
Return on energy break-even	6.9 months
Lifetime return on energy	34 times
Recyclability rate	86.6%
Configuration: 166m hub height, Vavg=7.4m/s, k=2.48. Depending on site-specific conditions. Metrics are based on an internal streamlined assessment. An externally reviewed Life Cycle Assessment will be made available on vestas.com once finalised.	





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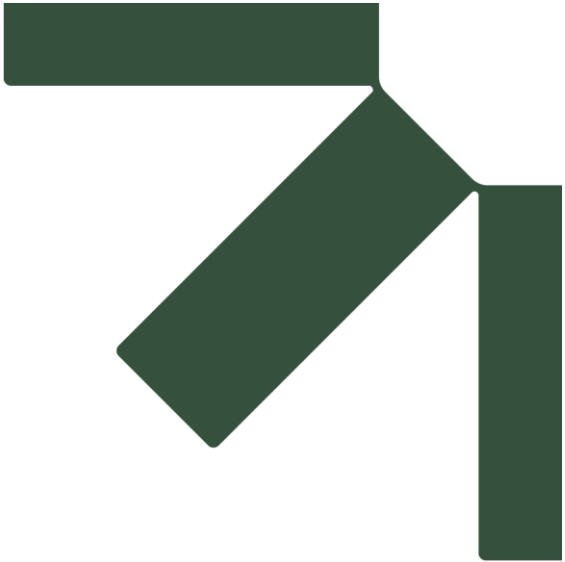
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Afro Asia, Singapore, 068894
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singapore@slrconsulting.com

Making
Sustainability
Happen

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Appendix D Traffic Volume Data

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

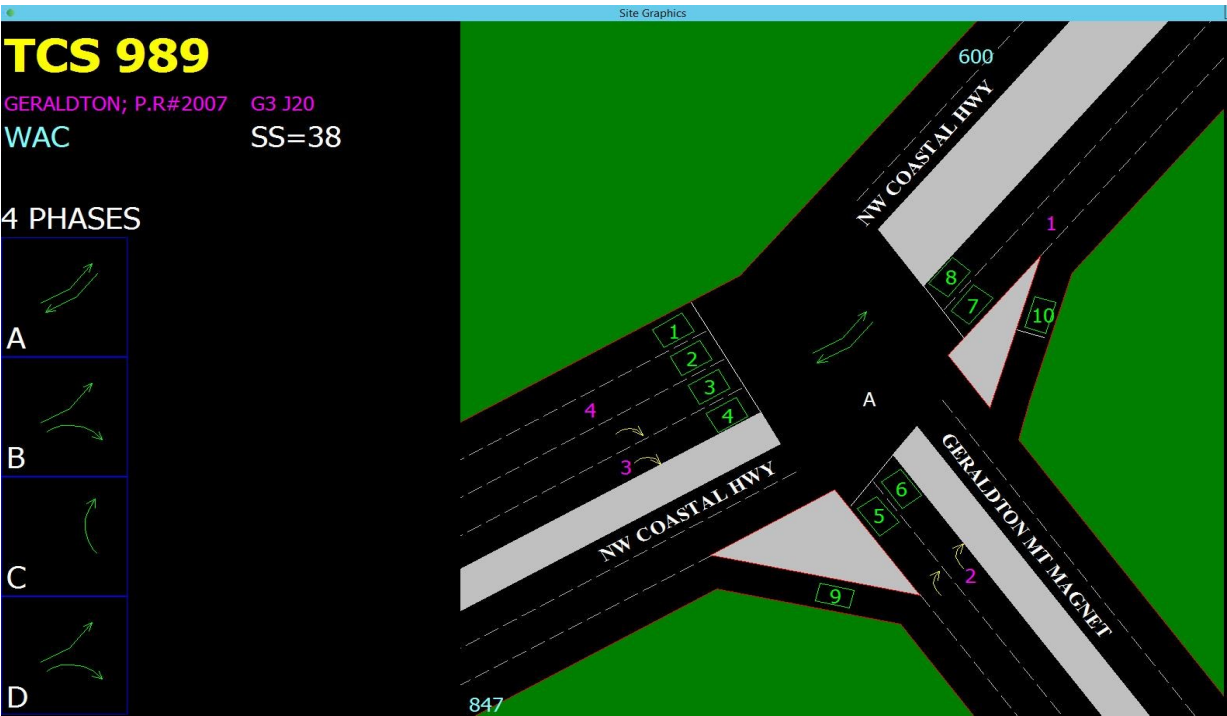
SLR Project No.: 675.072296.00005

5 August 2026



Traffic Signal Vehicle Counts

Traffic Signal	LM00989
Road	H007
Road Name	North West Coastal Hwy
SLK	0.77
Latitude	-28.787863
Longitude	114.623475
Intersection	NWCH & Geraldton - Mt Magnet Rd



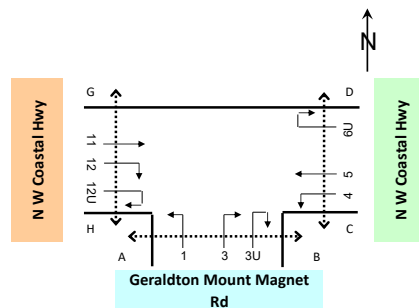
Traffic Signal Vehicle Counts

Traffic Signal LM00989
From 21-06-2023
To 22-06-2023

			Detector										
Day	Date	Hour	1	2	3	4	5	6	7	8	9	10	PEAK
Wednesday	21-06-2023	00:00	19	5	4	2	0	1	9	4	5	1	50
Wednesday	21-06-2023	01:00	11	0	6	2	0	0	6	3	7	0	35
Wednesday	21-06-2023	02:00	3	3	7	2	1	0	7	3	11	1	38
Wednesday	21-06-2023	03:00	5	2	9	4	4	0	5	3	4	8	44
Wednesday	21-06-2023	04:00	21	2	11	8	6	1	27	6	8	3	93
Wednesday	21-06-2023	05:00	52	19	17	33	10	1	46	38	26	42	284
Wednesday	21-06-2023	06:00	133	61	53	54	5	1	75	43	46	60	531
Wednesday	21-06-2023	07:00	213	90	38	54	11	5	165	148	60	32	816
Wednesday	21-06-2023	08:00	273	188	37	35	26	9	255	257	99	35	1214 AM
Wednesday	21-06-2023	09:00	194	143	27	31	16	6	252	136	83	22	910
Wednesday	21-06-2023	10:00	224	109	45	35	26	8	218	112	73	23	873
Wednesday	21-06-2023	11:00	217	120	37	33	8	5	216	112	80	40	868
Wednesday	21-06-2023	12:00	193	142	31	50	28	11	249	125	97	29	955
Wednesday	21-06-2023	13:00	170	117	37	31	20	5	210	115	76	27	808
Wednesday	21-06-2023	14:00	217	156	35	39	29	18	223	153	109	26	1005
Wednesday	21-06-2023	15:00	274	261	44	32	36	13	328	164	92	31	1275 PM
Wednesday	21-06-2023	16:00	249	206	31	34	31	15	343	154	112	23	1198
Wednesday	21-06-2023	17:00	168	158	29	36	23	12	346	149	101	26	1048
Wednesday	21-06-2023	18:00	103	93	26	22	12	4	187	62	78	11	598
Wednesday	21-06-2023	19:00	79	54	6	8	8	3	136	44	23	7	368
Wednesday	21-06-2023	20:00	54	47	6	10	1	1	106	26	6	2	259
Wednesday	21-06-2023	21:00	44	38	7	6	1	0	69	21	13	4	203
Wednesday	21-06-2023	22:00	45	24	7	4	0	1	30	6	9	1	127
Wednesday	21-06-2023	23:00	26	10	6	2	1	1	29	6	8	1	90
Thursday	22-06-2023	00:00	23	3	6	3	0	1	14	6	8	0	64
Thursday	22-06-2023	01:00	10	1	6	2	0	1	12	7	9	0	48
Thursday	22-06-2023	02:00	14	4	3	1	0	0	11	6	5	1	45
Thursday	22-06-2023	03:00	9	2	9	2	5	0	7	6	5	5	50
Thursday	22-06-2023	04:00	25	6	9	11	7	2	13	13	7	5	98
Thursday	22-06-2023	05:00	57	18	18	38	6	2	41	29	33	41	283
Thursday	22-06-2023	06:00	120	54	40	48	3	2	78	46	43	55	489
Thursday	22-06-2023	07:00	238	99	50	69	15	5	151	165	52	37	881
Thursday	22-06-2023	08:00	308	198	36	49	24	8	285	276	121	34	1339 AM
Thursday	22-06-2023	09:00	195	118	30	36	16	7	195	109	68	30	804
Thursday	22-06-2023	10:00	216	102	38	44	15	6	238	129	75	24	887
Thursday	22-06-2023	11:00	221	145	28	36	20	5	219	122	77	18	891
Thursday	22-06-2023	12:00	212	179	39	33	18	5	272	130	60	28	976
Thursday	22-06-2023	13:00	223	145	34	37	17	10	234	106	76	30	912
Thursday	22-06-2023	14:00	236	153	25	37	29	11	270	152	95	24	1032
Thursday	22-06-2023	15:00	249	279	35	37	35	17	343	200	96	29	1320 PM
Thursday	22-06-2023	16:00	243	216	24	39	28	8	333	148	95	29	1163
Thursday	22-06-2023	17:00	197	155	33	37	31	16	280	130	84	23	986
Thursday	22-06-2023	18:00	123	98	23	24	17	3	201	53	94	14	650
Thursday	22-06-2023	19:00	77	58	11	9	4	2	149	51	38	6	405
Thursday	22-06-2023	20:00	57	39	9	11	2	1	104	33	14	3	273
Thursday	22-06-2023	21:00	47	22	4	5	2	0	80	23	12	0	195
Thursday	22-06-2023	22:00	33	19	6	1	1	0	38	9	11	4	122
Thursday	22-06-2023	23:00	20	11	4	2	1	0	20	9	6	2	75

Job No. : W263
 Client : MRWA
 Suburb : Mid-West Gascoyne TSIP
 Location : 3. Geraldton Mount Magnet Rd / N W Coastal Hwy

Day/Date : Wed, 6 Mar 2019
 Weather : Fine
 Description : Classified Intersection Count
 : Peak Hour Summary



Approach		Geraldton Mount Magnet Rd														N W Coastal Hwy														LV	HV	T	%
Time Period		Short	Short Towing	Two Axle Truck or Bus	Three Axle Truck or Bus	Four Axle Truck	Three Axle Articulated	Four Axle Articulated	Five Axle Articulated	Six Axle Articulated	B Double	Double Road Train	Triple Road Train	Cyclist	Total	Short	Short Towing	Two Axle Truck or Bus	Three Axle Truck or Bus	Four Axle Truck	Three Axle Articulated	Four Axle Articulated	Five Axle Articulated	Six Axle Articulated	B Double	Double Road Train	Triple Road Train	Cyclist	Total				
AM	7:45 to 8:45	134	3	5	2	0	0	0	1	2	0	6	1	0	154	529	12	14	4	1	0	0	2	1	0	8	0	0	571	678	47	725	0.065
PM	16:30 to 17:30	135	1	1	0	0	0	0	1	8	0	7	3	0	156	459	0	6	0	0	0	0	2	2	0	4	0	0	473	595	34	629	0.054

Approach	Geraldton Mount Magnet Rd														N W Coastal Hwy													
Time Period	Short	Short Towing	Two Axle Truck or Bus	Three Axle Truck or Bus	Four Axle Truck	Three Axle Articulated	Four Axle Articulated	Five Axle Articulated	Six Axle Articulated	B Double	Double Road Train	Triple Road Train	Cyclist	Total	Short	Short Towing	Two Axle Truck or Bus	Three Axle Truck or Bus	Four Axle Truck	Three Axle Articulated	Four Axle Articulated	Five Axle Articulated	Six Axle Articulated	B Double	Double Road Train	Triple Road Train	Cyclist	Total
6:30 to 7:30	51	0	4	3	1	0	0	1	0	0	5	1	0	66	194	9	14	4	0	0	0	0	1	0	4	1	0	227
6:45 to 7:45	61	0	2	2	2	0	0	2	0	0	5	2	0	76	226	9	19	1	0	0	0	0	1	0	7	1	0	264
7:00 to 8:00	79	0	3	2	2	0	0	2	1	0	5	1	0	95	299	16	19	2	0	0	0	1	1	0	5	1	0	344
7:15 to 8:15	93	0	3	3	2	0	0	2	1	0	4	1	0	109	397	18	19	2	0	0	0	2	1	0	6	1	0	446
7:30 to 8:30	107	2	4	2	1	0	0	1	2	0	3	2	0	124	476	13	15	3	0	0	0	2	1	0	8	0	0	518
7:45 to 8:45	134	3	5	2	0	0	0	1	2	0	6	1	0	154	529	12	14	4	1	0	0	2	1	0	8	0	0	571
8:00 to 9:00	127	4	4	3	0	0	0	2	3	0	6	2	0	151	542	6	16	2	1	0	0	2	1	0	7	0	0	577
8:15 to 9:15	118	5	7	4	0	0	0	2	3	0	7	2	0	148	480	6	13	3	1	0	0	3	1	0	7	0	0	514
8:30 to 9:30	98	3	6	6	0	0	0	2	2	0	10	2	0	129	434	12	13	2	1	0	0	3	2	0	7	0	0	474
AM Totals	256	5	14	11	2	0	0	4	4	0	18	5	0	319	1,104	34	42	9	1	0	0	5	4	0	19	1	0	1,219
15:30 to 16:30	135	4	3	0	0	0	0	1	14	0	6	4	0	167	385	6	7	2	0	0	0	2	1	0	5	0	0	408
15:45 to 16:45	139	2	1	0	0	0	0	1	13	0	6	5	0	167	372	4	5	2	0	0	0	1	1	0	2	0	0	387
16:00 to 17:00	143	2	2	0	0	0	0	1	16	0	6	5	0	175	413	2	4	2	0	0	0	1	0	0	3	0	0	425
16:15 to 17:15	143	2	2	0	0	0	0	1	5	0	5	4	0	162	433	1	6	2	0	0	0	1	0	0	4	0	0	447
16:30 to 17:30	135	1	1	0	0	0	0	1	8	0	7	3	0	156	459	0	6	0	0	0	0	2	2	0	4	0	0	473
16:45 to 17:45	125	1	2	0	0	0	0	0	12	0	7	2	0	149	454	1	5	0	0	0	0	2	2	0	4	0	0	468
17:00 to 18:00	131	0	3	1	0	0	0	0	12	0	9	4	0	160	420	2	4	1	0	0	0	1	2	0	2	0	0	432
17:15 to 18:15	123	1	3	1	0	0	0	0	13	0	10	4	0	155	357	2	3	1	0	0	0	1	2	0	1	0	0	367
17:30 to 18:30	115	1	3	1	0	0	0	0	14	0	10	3	0	147	299	2	2	1	0	0	0	0	0	0	1	0	0	305
PM Totals	385	6	7	1	0	0	0	2	36	0	23	10	0	470	1,143	8	15	3	0	0	0	4	3	0	10	0	0	1,186

	N W Coastal Hwy													Grand Total		
	Short	Short Towing	Two Axle Truck or Bus	Three Axle Truck or Bus	Four Axle Truck	Three Axle Articulated	Four Axle Articulated	Five Axle Articulated	Six Axle Articulated	B Double	Double Road Train	Triple Road Train	Cyclist		Total	
	490	8	34	2	1	0	0	0	1	0	12	1	0		549	1,274
	446	4	8	4	0	0	0	0	12	2	10	3	0		489	1,118

	N W Coastal Hwy														Grand Total
	Short	Short Towing	Two Axle Truck or Bus	Three Axle Truck or Bus	Four Axle Truck	Three Axle Articulated	Four Axle Articulated	Five Axle Articulated	Six Axle Articulated	B Double	Double Road Train	Triple Road Train	Cyclist	Total	
267	5	10	2	3	0	0	0	0	2	0	4	0	1	294	587
295	4	10	2	3	0	0	0	0	5	0	5	1	1	326	666
367	4	11	1	4	0	0	0	0	4	0	5	1	0	397	836
419	7	19	2	2	0	0	0	0	5	0	7	2	0	463	1,018
470	6	29	2	1	0	0	0	0	4	0	13	2	0	527	1,169
490	8	34	2	1	0	0	0	0	1	0	12	1	0	549	1,274
459	12	34	4	0	0	0	0	0	3	0	14	2	0	528	1,256
448	9	30	4	0	0	0	0	0	2	0	16	1	0	510	1,172
396	12	21	4	0	0	0	0	0	2	0	14	4	0	453	1,056
1,133	23	60	8	4	0	0	0	0	8	0	31	6	1	1,274	2,812
420	4	15	0	0	0	1	0	0	5	0	6	4	0	455	1,030
435	4	10	1	0	0	0	0	0	9	1	8	2	0	470	1,024
452	4	9	2	0	0	0	0	0	11	1	6	4	0	489	1,089
439	3	6	3	0	0	0	0	0	13	1	11	4	0	480	1,089
446	4	8	4	0	0	0	0	0	12	2	10	3	0	489	1,118
412	5	8	3	0	0	0	0	0	11	1	11	2	0	453	1,070
383	4	7	2	0	0	0	0	0	14	1	12	0	0	423	1,015
321	3	6	1	0	0	0	0	0	15	1	10	0	0	357	879
277	3	2	0	0	0	0	0	0	18	0	11	1	0	312	764
1,143	11	25	4	0	0	1	0	0	35	2	27	8	0	1,256	2,912



Hourly Vehicle Type Volumes

Geraldton Mount Magnet Rd (H050)

East of Eradu North Rd (SLK 45.00)

SITE 52992

2022/23

Monday to Friday

	E Eastbound												
	Vehicle Type												
	1	2	3	4	5	6	7	8	9	10	11	12	All
00:00	2	0	0	0	0	0	0	0	0	0	0	2	4
01:00	4	0	0	0	0	0	0	0	0	0	0	3	7
02:00	2	0	0	0	0	0	0	0	0	0	0	3	5
03:00	2	0	0	0	0	0	0	0	0	0	0	3	5
04:00	4	0	2	0	0	0	0	0	0	0	1	4	11
05:00	8	0	4	1	1	0	0	1	0	0	2	6	23
06:00	12	1	11	1	1	0	1	0	1	0	1	5	34
07:00	22	1	10	1	1	1	1	0	1	0	2	5	45
08:00	17	1	8	1	0	1	1	1	1	0	3	3	37
09:00	16	1	7	1	0	0	1	0	1	0	3	4	34
10:00	13	2	4	0	0	0	1	0	1	0	3	4	28
11:00	14	1	3	0	1	1	0	0	0	0	2	4	26
12:00	10	1	3	1	1	0	0	0	1	0	2	4	23
13:00	12	1	3	1	0	0	1	0	1	0	2	4	25
14:00	11	1	2	0	0	0	0	0	1	0	1	3	19
15:00	11	1	2	0	0	0	0	0	0	1	1	4	20
16:00	12	1	2	0	0	0	0	0	0	0	1	5	21
17:00	15	1	2	0	0	0	0	0	0	0	1	4	23
18:00	5	0	1	0	0	0	0	0	0	0	0	3	9
19:00	5	0	0	0	0	0	0	0	0	0	0	3	8
20:00	5	0	0	0	0	0	0	0	0	0	0	2	7
21:00	2	0	1	0	0	0	0	0	0	0	0	2	5
22:00	3	0	0	0	0	0	0	0	0	0	0	2	5
23:00	2	0	0	0	0	0	0	0	0	0	0	2	4
TOTAL	209	13	65	7	5	3	6	2	8	1	25	84	428



Peak Statistics

AM	TIME	07:00	08:30	06:15	07:15	05:15	06:45	07:45	05:00	07:15	09:30	04:30	07:00	
	VOL	22	2	12	2	2	1	2	1	2	4	6	45	
PM	TIME	17:00	14:30	16:30	13:45	12:30		13:00		12:45	15:15	12:15	16:45	12:15
	VOL	15	2	3	1	1		1		2	1	3	6	26



Hourly Vehicle Type Volumes

Geraldton Mount Magnet Rd (H050)

East of Eradu North Rd (SLK 45.00)

SITE 52992

2022/23

Monday to Friday

	← Westbound												
	Vehicle Type												
	1	2	3	4	5	6	7	8	9	10	11	12	All
00:00	3	0	0	0	0	0	0	0	0	0	0	2	5
01:00	4	0	0	0	0	0	0	0	0	0	0	3	7
02:00	2	0	0	0	0	0	0	0	0	0	0	3	5
03:00	2	0	0	0	0	0	0	0	0	0	0	3	5
04:00	2	0	0	0	0	0	0	0	0	0	0	2	4
05:00	3	0	1	0	0	0	0	0	0	0	0	2	6
06:00	6	0	1	0	0	0	0	0	0	0	1	3	11
07:00	10	0	3	0	0	0	0	0	0	0	1	3	17
08:00	11	1	3	1	0	0	0	0	0	1	2	4	23
09:00	12	1	3	0	0	0	1	0	0	0	2	5	24
10:00	11	1	4	0	1	1	1	0	1	0	2	3	25
11:00	11	1	5	1	1	1	0	0	0	0	2	4	26
12:00	12	2	5	1	0	0	0	0	1	0	2	5	28
13:00	12	2	7	1	0	1	1	0	0	0	2	5	31
14:00	15	1	11	1	0	1	1	1	1	0	2	5	39
15:00	17	1	11	1	1	1	0	1	1	1	2	4	41
16:00	19	2	13	1	0	0	1	0	1	0	2	5	44
17:00	13	1	9	0	1	0	0	0	1	0	1	4	30
18:00	6	1	5	0	0	0	0	0	0	0	1	3	16
19:00	4	0	3	0	0	0	0	0	0	0	1	3	11
20:00	5	0	1	0	0	0	0	0	0	0	0	3	9
21:00	2	0	1	0	0	0	0	0	0	0	0	2	5
22:00	2	0	1	0	0	0	0	0	0	0	0	3	6
23:00	2	0	0	0	0	0	0	0	0	0	0	1	3
TOTAL	186	14	87	7	4	5	5	2	6	2	23	80	421

Peak Statistics														
AM	TIME	11:15	09:45	11:15	07:15	10:15	09:45	09:30		09:45	07:15	09:15	08:15	10:30
	VOL	13	2	6	1	2	1	2		1	1	3	5	28
PM	TIME	16:00	12:15	16:15	14:15	17:00	14:45	16:15	14:30	15:30	15:00	15:15	12:30	16:00
	VOL	19	3	13	2	1	2	1	2	2	1	3	6	44



Hourly Vehicle Type Volumes

Walkaway-Nangetty Rd (5051400)

East of Arthur Rd (SLK 3.87)

SITE 53979

2023/24

Monday to Friday

	E Eastbound												
	Vehicle Type												
	1	2	3	4	5	6	7	8	9	10	11	12	All
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	2	0	1	0	0	0	0	0	0	0	0	0	3
06:00	14	0	3	0	0	0	0	0	0	0	0	0	17
07:00	10	1	1	0	0	0	0	0	1	0	0	0	13
08:00	8	1	2	0	0	0	0	0	0	0	1	0	12
09:00	9	0	2	1	0	0	0	0	1	0	0	0	13
10:00	8	1	2	1	0	0	0	0	0	0	0	0	12
11:00	7	1	1	0	0	0	0	1	0	0	0	0	10
12:00	7	1	1	0	0	0	1	0	0	0	0	0	10
13:00	8	1	1	0	0	0	0	0	0	0	1	0	11
14:00	6	2	1	0	0	0	0	0	1	0	1	0	11
15:00	7	1	1	0	0	0	0	0	0	0	1	0	10
16:00	6	1	0	0	0	0	0	0	0	0	0	0	7
17:00	5	1	1	0	0	0	0	0	0	0	0	0	7
18:00	3	0	0	0	0	0	0	0	0	0	0	0	3
19:00	2	0	0	0	0	1	0	0	0	0	0	0	3
20:00	2	0	1	0	0	0	0	0	0	0	0	0	3
21:00	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	105	11	18	2	0	1	1	1	3	0	4	0	146



Peak Statistics

AM	TIME	06:00	07:45	06:15	08:15	11:45	11:00	07:00	07:45	06:15
	VOL	14	2	4	1	1	1	1	1	18
PM	TIME	13:00	13:45	13:45	19:00	12:30	14:15	14:45	13:45	13:45
	VOL	8	3	2	1	1	1	2	1	13



Hourly Vehicle Type Volumes

Walkaway-Nangetty Rd (5051400)

East of Arthur Rd (SLK 3.87)

SITE 53979

2023/24

Monday to Friday

	← Westbound												
	Vehicle Type												
	1	2	3	4	5	6	7	8	9	10	11	12	All
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	3	0	0	0	0	0	0	0	0	0	0	0	3
08:00	6	1	2	0	0	0	0	0	1	0	0	0	10
09:00	6	2	2	0	0	1	0	0	0	0	1	0	12
10:00	7	1	2	0	0	0	1	0	1	0	0	0	12
11:00	6	1	3	1	0	0	0	0	0	0	1	0	12
12:00	6	1	2	0	0	0	0	0	0	0	0	0	9
13:00	10	1	2	0	0	0	1	1	0	0	0	0	15
14:00	8	1	3	0	0	0	0	0	0	0	0	0	12
15:00	11	0	3	0	0	0	0	0	0	0	1	0	15
16:00	12	1	4	1	0	0	0	0	0	0	0	0	18
17:00	9	0	2	0	0	0	0	0	0	0	1	0	12
18:00	6	0	2	0	0	0	0	0	0	0	0	0	8
19:00	2	0	1	0	0	0	0	0	0	0	0	0	3
20:00	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	94	9	28	2	0	1	2	1	2	0	4	0	143

Peak Statistics										
AM	TIME	09:30	08:45	09:15	10:45	08:15	09:30	08:00	09:00	09:30
	VOL	8	3	3	1	1	1	1	1	15
PM	TIME	16:00	13:30	16:15	16:15	13:45	13:15	17:30		16:00
	VOL	12	2	4	1	1	1	1		18



Hourly Vehicle Type Volumes

Walkaway-Nangetty Rd (5051400)

East of Arthur Rd (SLK 3.87)

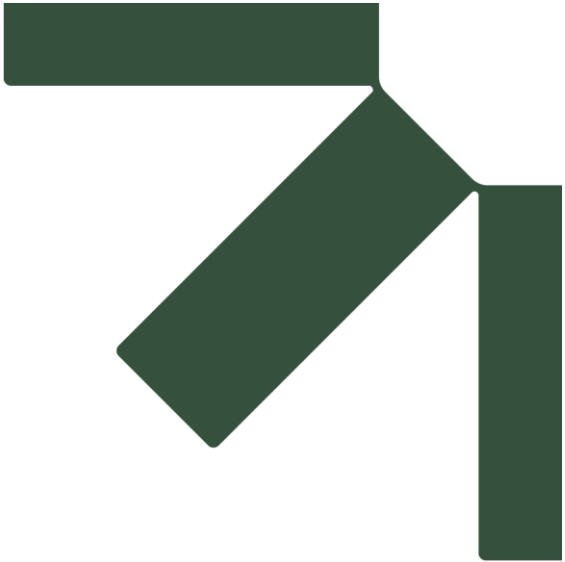
SITE 53979

2023/24

Monday to Friday

	 Both Directions												
	Vehicle Type												
	1	2	3	4	5	6	7	8	9	10	11	12	All
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	2	0	1	0	0	0	0	0	0	0	0	0	3
06:00	15	0	3	0	0	0	0	0	0	0	0	0	18
07:00	13	1	1	0	0	0	0	0	1	0	0	0	16
08:00	14	2	4	0	0	0	0	0	1	0	1	0	22
09:00	15	2	4	1	0	1	0	0	1	0	1	0	25
10:00	15	2	4	1	0	0	1	0	1	0	0	0	24
11:00	13	2	4	1	0	0	0	1	0	0	1	0	22
12:00	13	2	3	0	0	0	1	0	0	0	0	0	19
13:00	18	2	3	0	0	0	1	1	0	0	1	0	26
14:00	14	3	4	0	0	0	0	0	1	0	1	0	23
15:00	18	1	4	0	0	0	0	0	0	0	2	0	25
16:00	18	2	4	1	0	0	0	0	0	0	0	0	25
17:00	14	1	3	0	0	0	0	0	0	0	1	0	19
18:00	9	0	2	0	0	0	0	0	0	0	0	0	11
19:00	4	0	1	0	0	1	0	0	0	0	0	0	6
20:00	3	0	1	0	0	0	0	0	0	0	0	0	4
21:00	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	199	20	46	4	0	2	3	2	5	0	8	0	289

 Peak Statistics											
AM	TIME	08:15	10:15	09:30	08:15	08:15	09:30	11:00	09:30	07:45	08:15
	VOL	17	4	6	1	1	1	1	2	1	27
PM	TIME	15:30	13:45	16:15	16:15	19:00	13:45	13:15	14:15	14:45	13:45
	VOL	19	4	5	1	1	1	1	1	3	27



Appendix E Road Safety Record

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

5 August 2026



Figure 18 Geraldton Crash Data

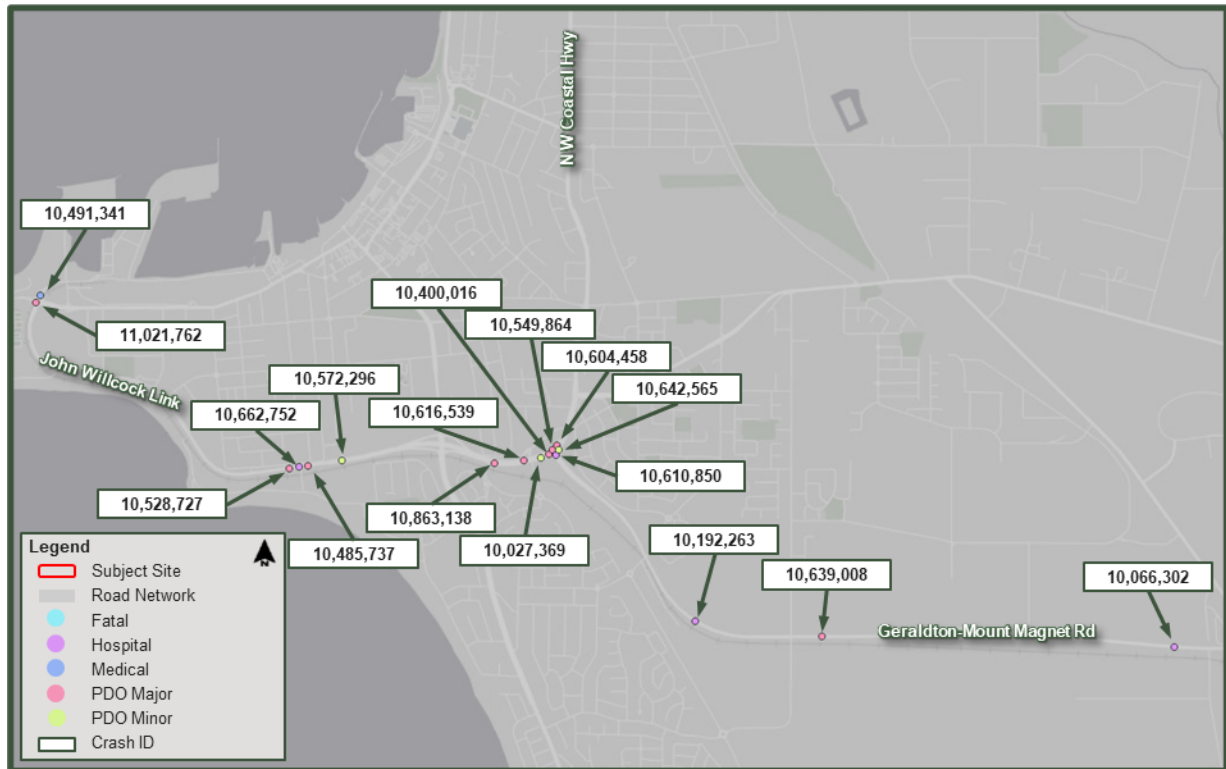
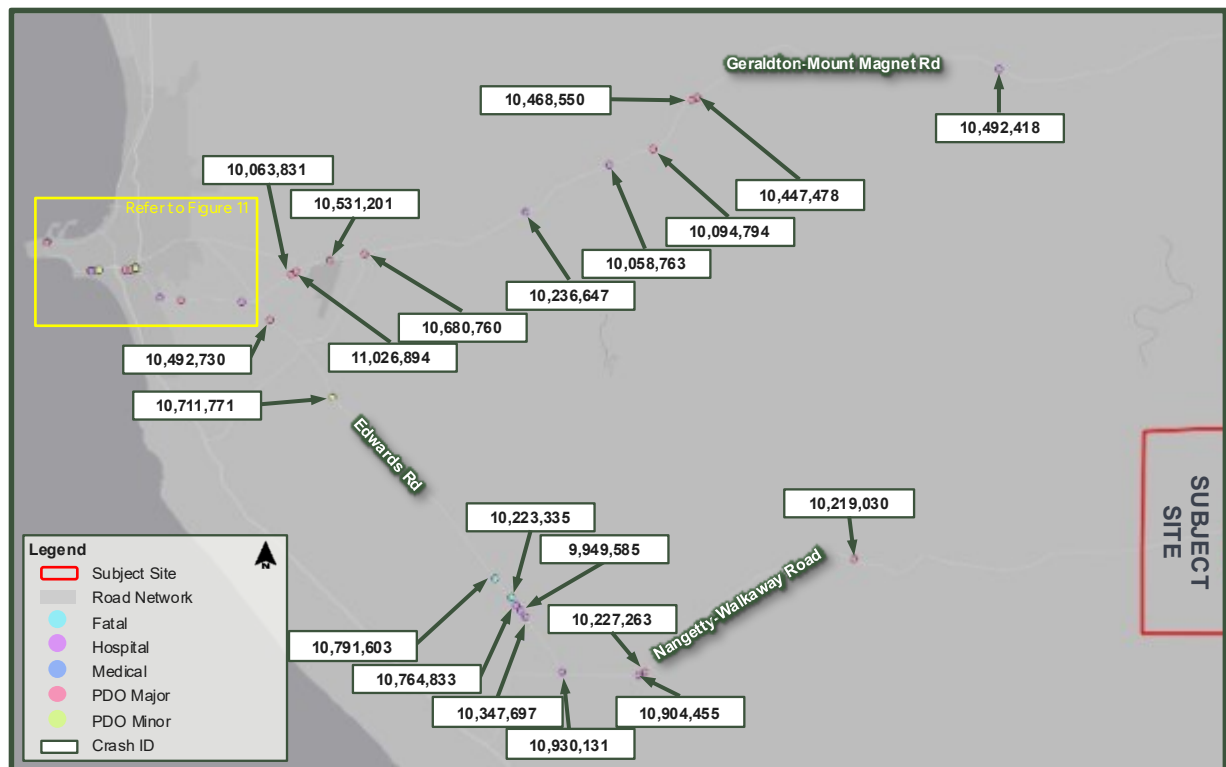
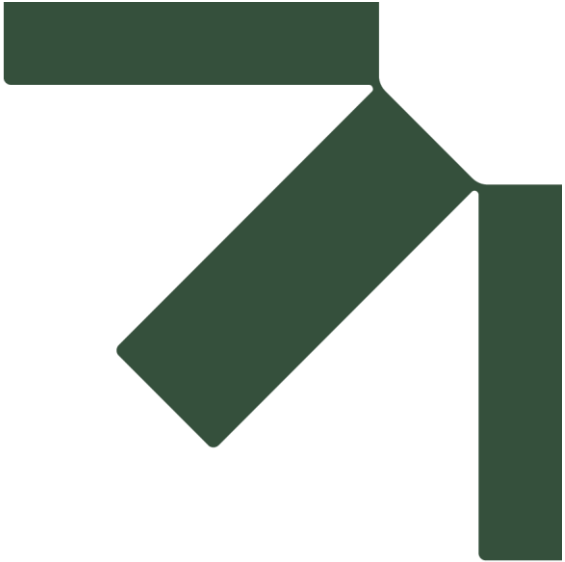


Figure 19 Crash locations on State and Local Road Options





Appendix F Wind Farm Construction Traffic Generation Potential

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

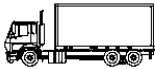
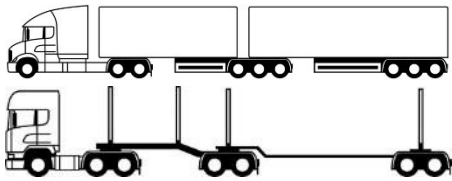
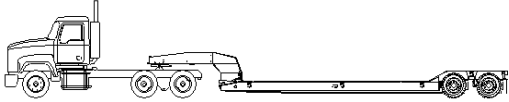
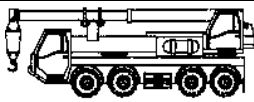
SLR Project No.: 675.072296.00005

5 August 2026

Traffic Generation

The vehicle fleet anticipated to be associated with the development is shown in **Table 21**.

Table 21 Vehicle Fleet (Wnd Farm)

Vehicle	Typical Vehicle Profile	Haulage Material
Private Vehicle (B99 design vehicle)		Supervision Workforce: Assumed occupancy of 1 person per vehicle
Toyota Coaster Bus (22-seater)		Labour Workforce: Assumed occupancy of 19 persons per vehicle
Concrete Truck (7.4 cubic meters)		Concrete
Heavy Rigid Vehicle (12.5m long HRV)		Waste removal
32t truck and dog (17m long)		Aggregates
Six Axle Articulated (20m long AV)		40ft Container (one full-size) Quarry products Miscellaneous materials and equipment Fuel delivery Contractor supplies
B-Double (19m or 27.5m long)		27.5m long: 40ft and 20ft Containers (one full-size and one half-size) 19m long: energy storage batteries Miscellaneous materials Miscellaneous equipment Construction mobilisation Construction de-mobilisation
Low Loader (20m long)		Excavator, bulldozer, grader, compactor, piling rig, miscellaneous equipment, construction mobilisation and de-mobilisation
Crane		Construction mobilisation
OSOM		Miscellaneous equipment Construction mobilisation Construction de-mobilisation



Traffic that will be generated during the construction of the proposed development will largely be associated with the haulage of the workforce and materials/ equipment. In order to simplify the construction traffic, SLR has broken down the traffic-generating elements of the proposed works into four classes, as follows:

- Construction workforce.
- Erection of turbines, including engineering materials and consumables.
- Transportation of concrete.
- Construction of transmission line and sub-stations.

Table 22 provides an overview of the workforce assumptions.

Table 23 provides an overview of the anticipated traffic associated with the haulage of WTG components.

Table 24 provides an overview of the anticipated traffic associated with the haulage of concrete from the batching plant to the 100 turbine locations.

Table 25 provides an overview of the anticipated traffic associated with the construction of the transmission line and installation of substations.



Table 22 Traffic Generation Assumptions (Construction Workforce) (Wind Farm)

Element	Assumption	Anticipated Trips	Note
Travel Arrangements	Labour via 22-seater Toyota Coaster style shuttle bus. Supervisors via private vehicle.		
Workforce	300 persons maximum on-site. 20 passengers per vehicle, excluding the driver.	28 x shuttle bus trips and 40 x light vehicle trips a day. Total: 34 inbound trips and 34 outbound trips a day.	SLR assumption based on previous similar projects. Assumed 280 workers and 20 supervisors across peak and average. Assumed staff will not travel to accommodation for lunch. It is also assumed that buses will stay on site all day and supervisors will drive on their own.
Roster	5 days on / 2 day off		
Shift rotation	Up to 9 hours during daylight (8 hours average)		
Construction Duration	22 months, minimum 475 working days		Based on working days for the assumed 22-month construction duration.
Construction Deliveries	Spaced across 22 months to minimise disruption		SLR assumption based on previous similar projects.
22-seater Coaster bus occupancy	20 passengers per vehicle		
Accommodation	100% to/from the West Geraldton		SLR assumes all accommodation will be based in the Geraldton area
Workforce Distribution	100% to/from the West		Geraldton (100%)
Haulage Distribution	100% from the West		



Table 23 Traffic Generation Assumptions (Erection of Turbines) (Wind Farm)

Element	Assumption	Delivery Method	Anticipated Trips
Wind Turbine Blades	3 blades per turbine	OSOM	300 inbound trips and 300 outbound trips
Wind Turbine Towers	Assumed 7 parts per tower	OSOM	700 inbound trips and 700 outbound trips
Consumables		20m AV	100 inbound trips and 100 outbound trips
Fuel		20m AV	100 inbound trips and 100 outbound trips
Road base: quarry product	50,000m*7m*0.3m =105,000m ³ 210,000t @2t per m ³ Road Base	32t truck and dog (20m)	10,500 inbound trips and 10,500 outbound trips
Wearing course: quarry product	50,000m x 7m x 0.1m =35,000m ³ 70,000t @2t per m ³ Wearing Coarse	32t truck and dog (20m)	3,500 inbound trips and 3,500 outbound trips
Miscellaneous materials		32t truck and dog (20m)	300 inbound trips and 300 outbound trips
Miscellaneous equipment		20m AV	30 inbound trips and 30 outbound trips
Construction mobilisation		20m AV	100 inbound trips and 100 outbound trips
Site Offices	20 Demountable Buildings	20m AV / Low Loader	20 inbound and 20 outbound trips
Site Clearing & Earthworks	10 x Bulldozer 10 x Grader 10 x Excavator 10 x Mulcher 10 x Compactor	Low Loader	50 inbound and 50 outbound trips



Table 24 Traffic Generation Assumptions (Transportation of Concrete) (Wind Farm)

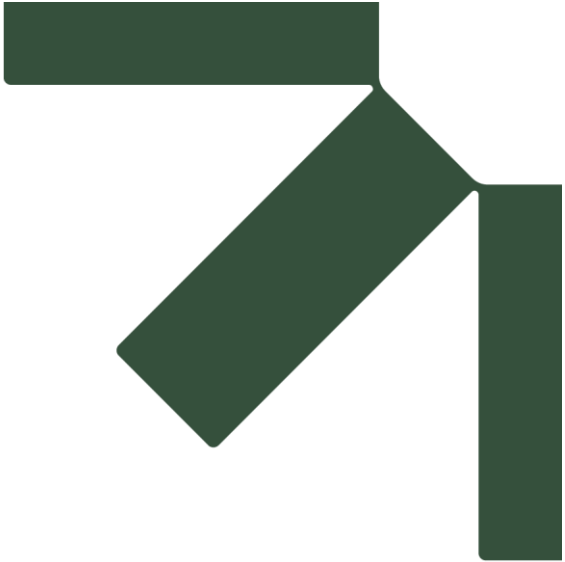
Element	Assumption	Vehicle Type	Anticipated Trips
Steel	110 tons per turbine & 3 trips per turbine	Road Train Type 1 (up to 36.5m)	300 inbound trips and 300 outbound trips
Aggregates for structural concrete	2.5t aggregate per m ³ concrete = 2,125t aggregate per turbine	32t truck and dog (20m)	6,641 inbound trips and 6,641 outbound trips
Aggregates for blinding concrete (cleaning and levelling of excavation funds)	Assumed 3,000m ³ needed and 2.5t aggregate per m ³ concrete	32t truck and dog (20m)	235 inbound trips and 235 outbound trips
Aggregates for structural concrete (WTG pedestal foundations)	Assumed 1,500m ³ needed and 2.5t aggregate per m ³ concrete	32t truck and dog (20m)	118 inbound trips and 118 outbound trips
Aggregates for cyclopean concrete	Assumed 1,500m ³ needed and 2.5t aggregate per m ³ concrete	32t truck and dog (20m)	118 inbound trips and 118 outbound trips
Aggregates for Crane Pads	2.5t aggregate per m ³ concrete = 1,125t aggregate per crane pad	32t truck and dog (20m)	3,500 inbound trips and 3,500 outbound trips



Table 25 Traffic Generation Assumptions (Transmission Line and Transformers) (Wind Farm)

Element	Assumption	Vehicle Type	Anticipated Trips	
330/33kV Substation	Previous SLR study	Trucks	750 inbound trips and 750 outbound trips	
	Previous SLR study	B-Double (27.5m)	85 inbound trips and 85 outbound trips	
	Previous SLR study	Crane	25 inbound trips and 25 outbound trips	
	Previous SLR study	OSOM	25 inbound trips and 25 outbound trips	
Transmission (Assumed to be approx. 9km long)	Lines	Previous SLR study	2,000 inbound trips and 2,000 outbound trips	
		Previous SLR study	B-Double	160 inbound trips and 160 outbound trips
		Previous SLR study	Crane	10 inbound trips and 10 outbound trips
		Previous SLR study	OSOM	10 inbound trips and 10 outbound trips





Appendix G BESS Construction Traffic Generation Potential

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

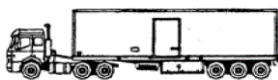
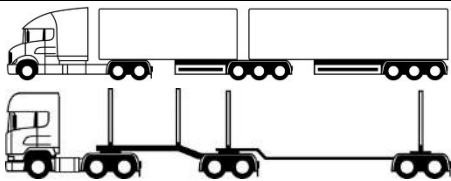
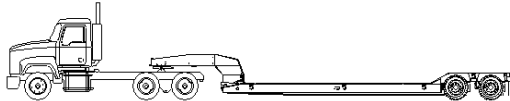
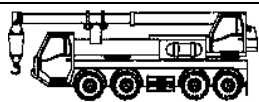
SLR Project No.: 675.072296.00005

5 August 2026

Traffic Generation

The vehicle fleet anticipated to be associated with the development is shown in **Table 21**.

Table 26 Vehicle Fleet (BESS)

Vehicle	Typical Vehicle Profile	Haulage Material
Private Vehicle (B99 design vehicle)		Supervision Workforce: Assumed occupancy of 1 person per vehicle
Toyota Coaster Bus (22-seater)		Labour Workforce: Assumed occupancy of 19 persons per vehicle
Concrete Truck (7.4 cubic meters)		Concrete
Heavy Rigid Vehicle (12.5m long HRV)		Waste removal
32t truck and dog (17m long)		Aggregates
Six Axle Articulated (20m long AV)		40ft Container (one full-size) Quarry products Miscellaneous materials and equipment Fuel delivery Contractor supplies
B-Double (19m or 27.5m long)		27.5m long: 40ft and 20ft Containers (one full-size and one half-size) 19m long: energy storage batteries Miscellaneous materials Miscellaneous equipment Construction mobilisation Construction de-mobilisation
Low Loader (20m long)		Excavator, bulldozer, grader, compactor, piling rig, miscellaneous equipment, construction mobilisation and de-mobilisation
Crane		Construction mobilisation
OSOM		Miscellaneous equipment Construction mobilisation Construction de-mobilisation



Traffic that will be generated during the construction of the proposed BESS development will largely be associated with the haulage of the workforce and materials/ equipment. In order to simplify the construction traffic, SLR has broken down the traffic-generating elements of the proposed works into four classes, as follows:

- Construction workforce.
- BESS, substation and transmission line, site clearance and establishment
- Construction materials and equipment
- Battery area - construction materials and equipment
- Transmission line - construction materials and equipment
- Miscellaneous items

Table 22 provides an overview of the workforce assumptions.

Table 23 provides an overview of the anticipated traffic associated with the site clearance and establishment of BESS Site.

Table 24 provides an overview of the anticipated traffic associated with the haulage of the construction materials and equipment to the BESS site.

Table 25 provides an overview of the anticipated traffic associated with the construction of the battery area.

Table 31 provides an overview of the anticipated traffic associated with the construction of the transmission line and installation of substations.

Table 32 provides an overview of the miscellaneous items of the BESS site.



Table 27 Traffic Generation Assumptions (Construction Workforce) (BESS)

Element	Assumption	Anticipated Trips	Note
Travel Arrangements	Labour via 22-seater Toyota Coaster style shuttle bus. Supervisors via private vehicle.		
Workforce	100 persons maximum on-site. 18 passengers per vehicle, excluding the driver.	10 x shuttle bus trips and 20 x light vehicle trips a day. Total: 15 inbound trips and 15 outbound trips a day.	SLR assumption based on previous similar projects. Assumed 90 workers and 10 supervisors across peak and average. Assumed staff will not travel to accommodation for lunch. It is also assumed that buses will stay on site all day and supervisors will drive on their own.
Roster	5 days on / 2 day off		
Shift rotation	Up to 9 hours during daylight (8 hours average)		
Construction Duration	22 months, minimum 475 working days		Based on working days for the assumed 22-month construction duration.
Construction Deliveries	Spaced across 22 months to minimise disruption		SLR assumption based on previous similar projects.
22-seater Coaster bus occupancy	18 passengers per vehicle		
Accommodation	100% to/from the West Geraldton		SLR assumes all accommodation will be based in the Geraldton area
Workforce Distribution	100% to/from the West		Geraldton (100%)
Haulage Distribution	100% from the West		



Table 28 Traffic Generation Assumptions (BESS, Substation and Transmission Line Site Clearance and Establishment) (BESS)

Element	Assumption	Delivery Method	Anticipated Trips
Site compound	Dongers or similar	19m AV	80 inbound and 80 outbound trips.
Site compound	Storage containers	19m AV	80 inbound and 80 outbound trips.
Site compound	Workshop area	19m AV	100 inbound and 100 outbound trips.
Site compound	Gravel	19m Truck & Dog	70 inbound and 70 outbound trips.
Site compound	Workstations and other equipment	HRV	80 inbound and 80 outbound trips.
Site compound	Sewerage tank	19m AV	40 inbound and 40 outbound trips.
Construction vehicles	Roller compactor	Low Loader (25m)	40 inbound and 40 outbound trips.
Construction vehicles	Excavator	Low Loader (25m)	70 inbound and 70 outbound trips.
Construction vehicles	Grader	Low Loader (25m)	30 inbound and 30 outbound trips.
Construction vehicles	Dozer (e.g. D5)	Low Loader (25m)	40 inbound and 40 outbound trips.
Construction vehicles	Crane	Prime Mover and Low Loader with Dolly (Gooseneck) (30m)	20 inbound and 20 outbound trips.
Construction vehicles	Crane ballast and accessories	19m AV	80 inbound and 80 outbound trips.
Construction vehicles	Concrete pump	HRV	18 inbound and 18 outbound trips.
Construction vehicles	Dump truck	Low Loader (25m)	70 inbound and 70 outbound trips.
Materials	Bench - road base	19m Truck & Dog	2,805 inbound and 2,805 outbound trips.
Materials	Access track	19m Truck & Dog	195 inbound and 195 outbound trips.
Equipment	Culverts or similar	19m AV	15 inbound and 15 outbound trips.
TOTAL Trips for Site Clearance and Establishment			3,833 inbound and 3,833 outbound trips.



Table 29 Traffic Generation Assumptions (Substation – Construction Materials and Equipment) (BESS)

Element	Assumption	Delivery Method	Anticipated Trips
Construction vehicles	Fuel, oil and hydraulic fluids	HRV	30 inbound and 30 outbound trips.
Construction vehicles	Elevated work platform	HRV	40 inbound and 40 outbound trips.
Equipment	Transformer accessories	19m AV	30 inbound and 30 outbound trips.
Equipment	Transformer oil	19m AV	45 inbound and 45 outbound trips.
Equipment	Switch room	Prime Mover and Low Loader with Dolly (Gooseneck) (30m)	5 inbound and 5 outbound trips.
Equipment	Control room	Prime Mover and Low Loader with Dolly (Gooseneck) (30m)	5 inbound and 5 outbound trips.
Equipment	Auxiliary transformers	19m AV	15 inbound and 15 outbound trips.
Equipment	Earthing transformers	19m AV	10 inbound and 10 outbound trips.
Equipment	Gantry superstructure	19m AV	20 inbound and 20 outbound trips.
Equipment	Structures, outdoor bus bars, CBs, VTs, surge arrestors, disconnectors etc.	19m AV	100 inbound and 100 outbound trips.
Equipment	Harmonic filters	19m AV	20 inbound and 20 outbound trips.
Equipment	Fencing	19m AV	50 inbound and 50 outbound trips.
Equipment	Conductors	19m AV	25 inbound and 25 outbound trips.
Materials	Foundation - concrete	Concrete Mixer Truck (6.0m ³)	125 inbound and 125 outbound trips.
Materials	Gravel (earthing)	19m Truck & Dog	75 inbound and 75 outbound trips.
TOTAL Trips for Substation – Construction Materials and Equipment			600 inbound and 600 outbound trips.



Table 30 Traffic Generation Assumptions (Battery Area - Construction Materials and Equipment) (BESS)

Element	Assumption	Delivery Method	Anticipated Trips
Construction vehicles	Fuel, oil and hydraulic fluids	HRV	30 inbound and 30 outbound trips.
Equipment	Battery containers	Prime Mover and Low Loader with Dolly (Gooseneck) (30m)	1000 inbound and 1000 outbound trips.
Equipment	PCSs	19m AV	250 inbound and 250 outbound trips.
Equipment	MV Transformers - MV Twin Skid Unit	19m AV	125 inbound and 125 outbound trips.
Equipment	Auxiliary transformers	19m AV	20 inbound and 20 outbound trips.
Equipment	Conductors	19m AV	50 inbound and 50 outbound trips.
Equipment	Operations and maintenance building	19m AV	15 inbound and 15 outbound trips.
Equipment	Water tanks	19m AV	20 inbound and 20 outbound trips.
Materials	Foundation - concrete	Concrete Mixer Truck (6.0m ³)	1,180 inbound and 1,180 outbound trips.
TOTAL Trips for Battery Area – Construction Materials and Equipment			2,690 inbound and 2,690 outbound trips.



Table 31 Traffic Generation Assumptions (Transmission Line - Construction Materials and Equipment) (BESS)

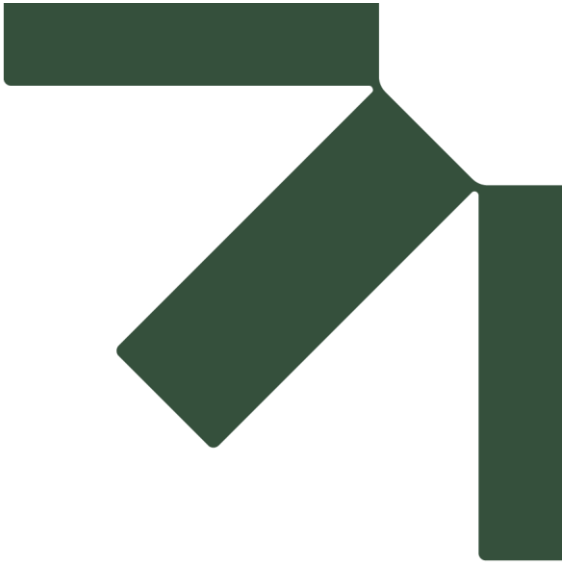
Element	Assumption	Delivery Method	Anticipated Trips	Source
Construction vehicles	Fuel, oil and hydraulic fluids	HRV	20 inbound and 20 outbound.	SLR assumption.
Construction vehicles	Franna / small crane	HRV	10 inbound and 10 outbound.	SLR assumption.
Construction vehicles	Crane for stringing	Prime Mover and Low Loader with Dolly (Gooseneck) (30m)	10 inbound and 10 outbound.	SLR assumption.
Construction vehicles	Crane accessories	19m AV	10 inbound and 10 outbound.	SLR assumption.
Equipment	Monopole towers	19m AV	30 inbound and 30 outbound.	SLR assumption.
Equipment	Conductors	19m AV	40 inbound and 40 outbound.	SLR assumption.
Equipment	Stays, fixtures and fittings	19m AV	10 inbound and 10 outbound.	SLR assumption.
Equipment	Gantry superstructure	19m AV	20 inbound and 20 outbound.	SLR assumption.
Equipment	Structures, outdoor bus bars, CBs, VTs, surge arrestors, disconnectors etc.	19m AV	25 inbound and 25 outbound.	SLR assumption.
Equipment	Optical Ground Wire - 900m of cable	19m AV	10 inbound and 10 outbound.	SLR assumption.
Equipment	Overhead Earth Wire - 900m of cable	19m AV	10 inbound and 10 outbound.	SLR assumption.
Equipment	132kV Transmission Line - 900m of cable x 3 lines	19m AV	30 inbound and 30 outbound.	SLR assumption.
Materials	Foundation - concrete	Concrete Mixer Truck (6.0m3)	55 inbound and 55 outbound.	SLR assumption.
TOTAL Trips for Transmission Line – Construction Materials and Equipment			280 inbound and 280 outbound trips.	



Table 32 Traffic Generation Assumptions (Miscellaneous Item) (BESS)

Element	Assumption	Delivery Method	Anticipated Trips	Source
Miscellaneous	Various minor components, parcels, office supplies etc.	HRV	3,600 inbound and 3,600 outbound trips.	SLR assumption based on previous similar projects.
Miscellaneous	Water – an average of 120 water trucks per week, for construction duration.	HRV	11,540 inbound and 11,540 outbound trips.	SLR assumption based on previous similar projects.
Miscellaneous	Sewerage – an average of 3 sewerage pump truck per week for construction duration	HRV	285 inbound and 285 outbound trips.	SLR assumption based on previous similar projects.
Miscellaneous	Waste, landscaping, soil – an average of 35 waste trucks per week for construction duration	HRV	3,380 inbound and 3,380 outbound trips.	SLR assumption based on previous similar projects.
Miscellaneous	Fuel, Oils and Hydraulic Fluids – an average of 3 fuel truck per week for construction duration	HRV	285 inbound and 285 outbound trips.	SLR assumption based on previous similar projects.
Miscellaneous	Various Plant Equipment	19m AV	500 inbound and 500 outbound trips.	SLR assumption based on previous similar projects.
TOTAL Trips for Miscellaneous Items			19,590 inbound and 19,590 outbound trips.	





Appendix H Turn Warrant Assessments

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

5 August 2026

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q _{T1} =	50	36	16
Q _R =	99	0	70
Q _{T2} =	19	18	24
Q _L =	0	0	0
Q _{LM} =	49	0	100
Q _{RM} =	0	0	0

RIGHT TURN ASSESSMENT

Q _M =	69.44
% HV =	48.387
x =	1.03
TREATMENT =	AUR

LEFT TURN ASSESSMENT

Q _M =	19.04
% HV =	41.18
x =	0.00
TREATMENT =	SL
OFFSET?	NO

Intersection 3 - AM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Geraldton-Mount Magnet Road & Casuarinas Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q _{T1} =	24	14	29
Q _R =	49	0	100
Q _{T2} =	49	41	16
Q _L =	0	0	0
Q _{LM} =	99	0	70
Q _{RM} =	0	0	0

RIGHT TURN ASSESSMENT

Q _M =	72.8
% HV =	52.308
x =	0.83
TREATMENT =	BAR

LEFT TURN ASSESSMENT

Q _M =	49.28
% HV =	56.82
x =	0.00
TREATMENT =	SL
OFFSET?	NO

Intersection 3 - PM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Geraldton-Mount Magnet Road & Casuarinas Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q _{T1} =	33	17	62
Q _R =	0	0	0
Q _{T2} =	50	9	50
Q _L =	64	0	69
Q _{LM} =	0	0	0
Q _{RM} =	30	0	100

RIGHT TURN ASSESSMENT

Q _M =	146.1666667
% HV =	67.982
x =	0.00
TREATMENT =	SR

LEFT TURN ASSESSMENT

Q _M =	49.56
% HV =	59.48
x =	0.81
TREATMENT =	BAL
OFFSET?	NO

Intersection 4 - AM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and Kiely Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q _{T1} =	52	11	48
Q _R =	0	0	0
Q _{T2} =	31	7	64
Q _L =	30	0	100
Q _{LM} =	0	0	0
Q _{RM} =	64	0	69

RIGHT TURN ASSESSMENT

Q _M =	113.2866667
% HV =	73.377
x =	0.00
TREATMENT =	SR

LEFT TURN ASSESSMENT

Q _M =	31.48666667
% HV =	71.54
x =	0.44
TREATMENT =	BAL
OFFSET?	NO

Intersection 4 - PM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and Kiely Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q_{T1} =	13	42	8
Q_R =	0	0	0
Q_{T2} =	15	31	0
Q_L =	64	0	69
Q_{LM} =	0	0	0
Q_{RM} =	30	0	100

RIGHT TURN ASSESSMENT

Q_M =	92
% HV =	60.000
x =	0.00
TREATMENT =	SR

LEFT TURN ASSESSMENT

Q_M =	14.56
% HV =	30.77
x =	0.16
TREATMENT =	BAL
OFFSET?	NO

Intersection 5 NORTH - AM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and Casuarinas Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q_{T1} =	17	33	0
Q_R =	0	0	0
Q_{T2} =	12	18	9
Q_L =	30	0	100
Q_{LM} =	0	0	0
Q_{RM} =	64	0	69

RIGHT TURN ASSESSMENT

Q_M =	59.12
% HV =	65.900
x =	0.00
TREATMENT =	SR

LEFT TURN ASSESSMENT

Q_M =	12.32
% HV =	27.27
x =	0.11
TREATMENT =	BAL
OFFSET?	NO

Intersection 5 NORTH - PM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and Casuarinas Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q_{T1} =	15	31	0
Q_R =	64	0	69
Q_{T2} =	13	42	8
Q_L =	0	0	0
Q_{LM} =	30	0	100
Q_{RM} =	0	0	0

RIGHT TURN ASSESSMENT

Q_M =	28
% HV =	40.000
x =	0.32
TREATMENT =	BAR

LEFT TURN ASSESSMENT

Q_M =	13.44
% HV =	50.00
x =	0.00
TREATMENT =	SL
OFFSET?	NO

Intersection 5 SOUTH - AM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and Casuarinas Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q _{T1} =	12	18	9
Q _R =	30	0	100
Q _{T2} =	17	33	0
Q _L =	0	0	0
Q _{LM} =	64	0	69
Q _{RM} =	0	0	0

RIGHT TURN ASSESSMENT

Q _M =	29.12
% HV =	30.769
x =	0.23
TREATMENT =	BAR

LEFT TURN ASSESSMENT

Q _M =	16.8
% HV =	33.33
x =	0.00
TREATMENT =	SL
OFFSET?	NO

Intersection 5 SOUTH - PM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and Casuarinas Road

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q _{T1} =	79	6	56
Q _R =	35	0	55
Q _{T2} =	43	13	72
Q _L =	0	0	0
Q _{LM} =	19	0	100
Q _{RM} =	0	0	0

RIGHT TURN ASSESSMENT

Q _M =	122
% HV =	69.836
x =	1.59
TREATMENT =	AUR

LEFT TURN ASSESSMENT

Q _M =	43.44
% HV =	84.53
x =	0.00
TREATMENT =	SL
OFFSET?	NO

Intersection 6 - AM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and BESS Access

INTERSECTION WARRANTS

Main Roads WA Supplement to Austroads Guide to Traffic Management - Part 6, Sec 3.3.6

Version: 2.01

DESIGN SPEED =	120km/h
SPLITTER ISLAND YES / NO =	No
DUAL CARRIAGEWAY YES / NO =	No

MOVEMENT	COUNT (v/h)	Std HV (Class 2-9) (%)	Road Trains (Class 10+) (%)
Q _{T1} =	42	5	74
Q _R =	19	0	100
Q _{T2} =	81	7	79
Q _L =	0	0	0
Q _{LM} =	35	0	71
Q _{RM} =	0	0	0

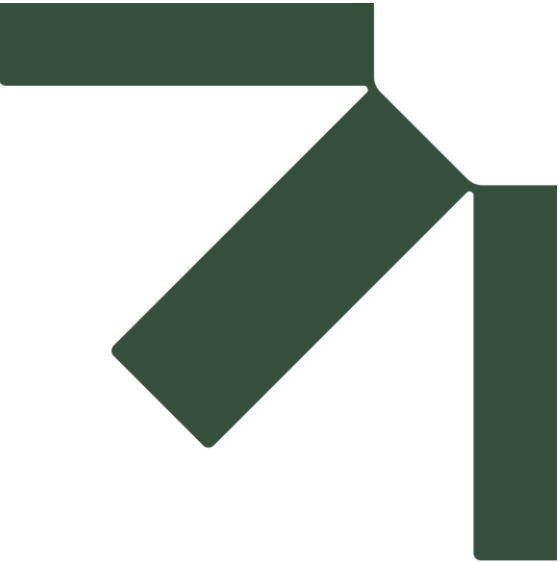
RIGHT TURN ASSESSMENT

Q _M =	123.12
% HV =	83.626
x =	1.42
TREATMENT =	AUR

LEFT TURN ASSESSMENT

Q _M =	80.8
% HV =	86.14
x =	0.00
TREATMENT =	SL
OFFSET?	NO

Intersection 6 - PM Peak Hour - 2029 DEVELOPMENT TRAFFIC SCENARIO
Intersection of Walkaway-Nangetty Road and BESS Access



Appendix I Desktop Models

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

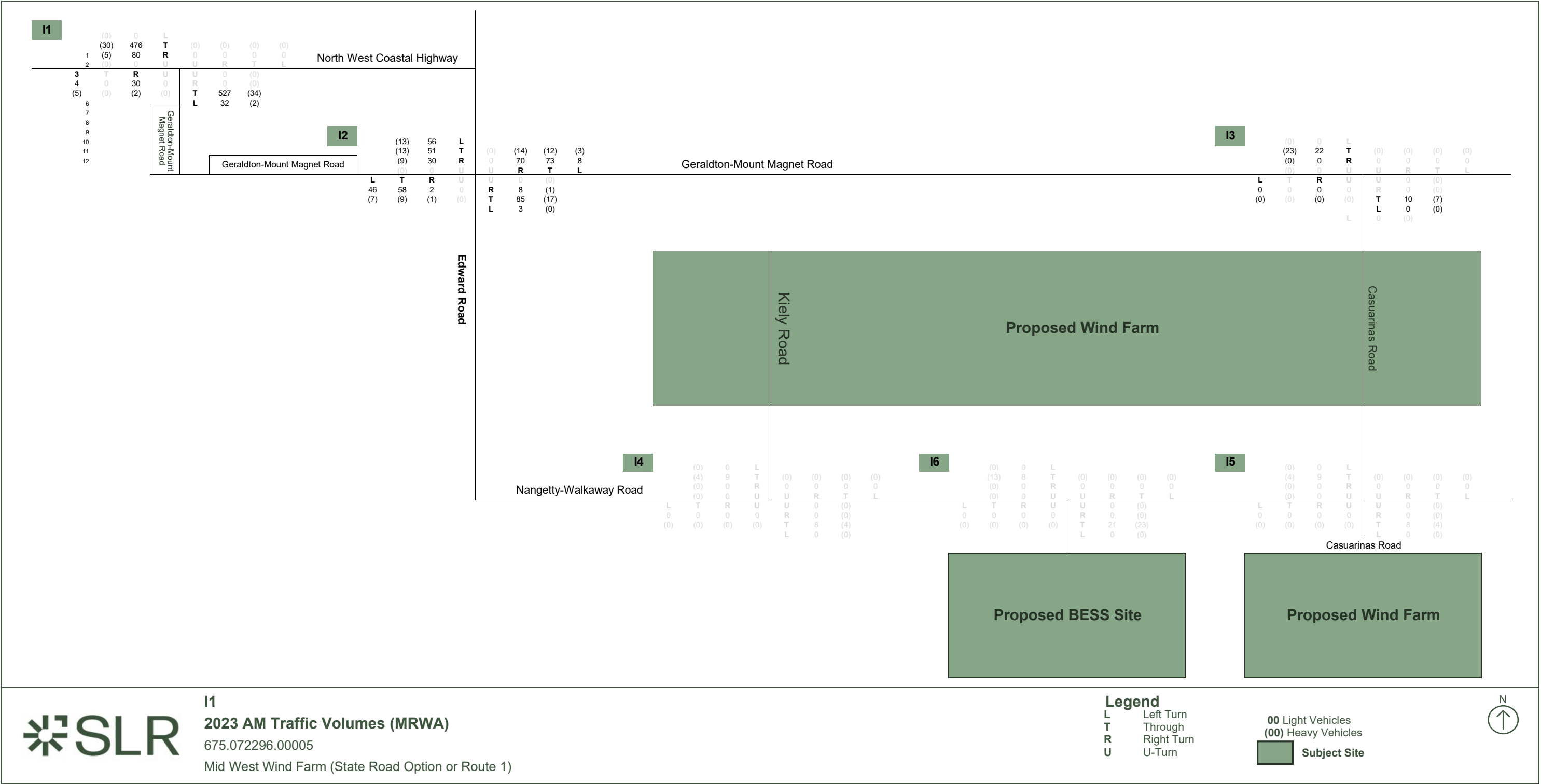
5 August 2026

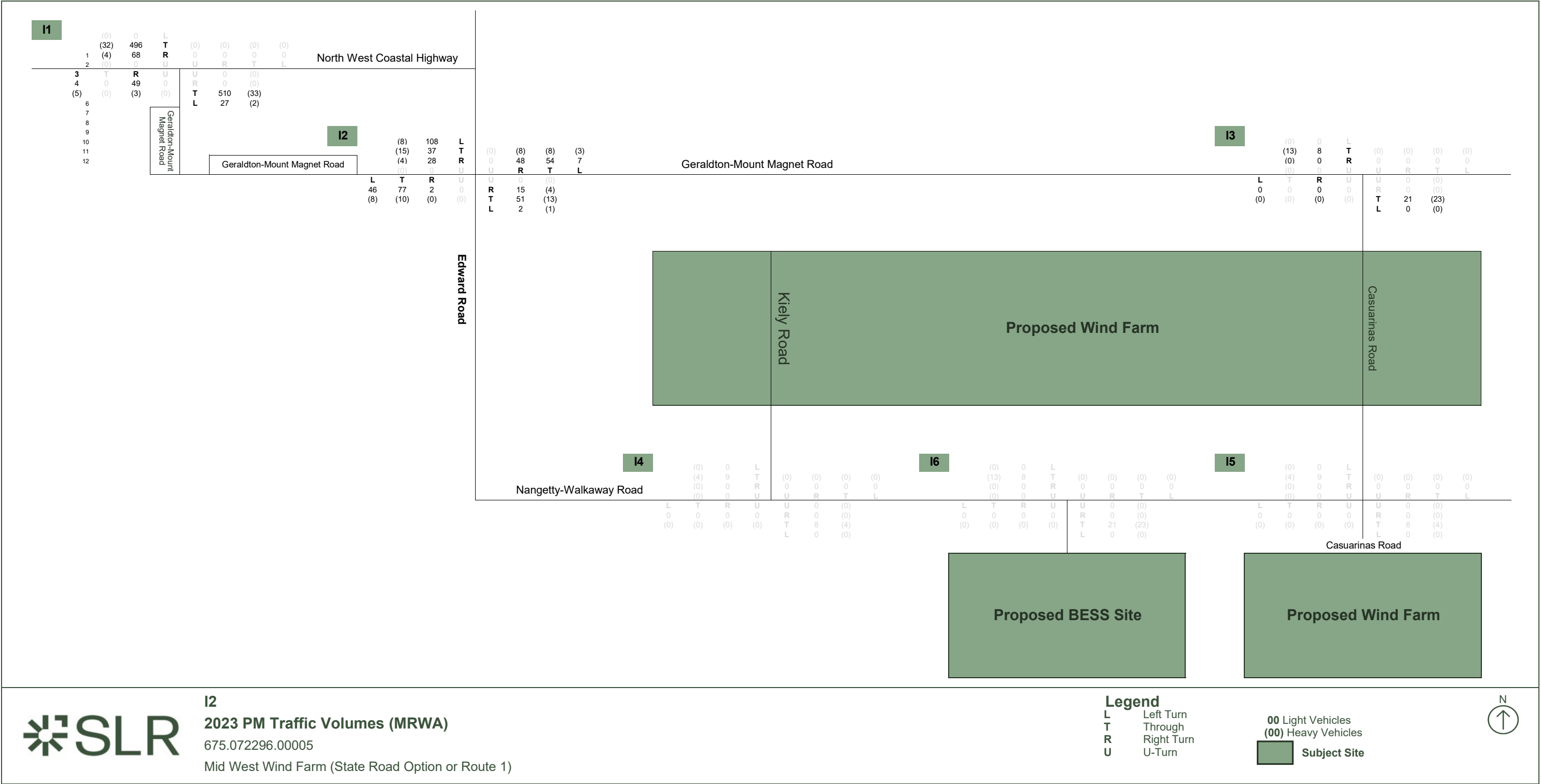
Project Mid West Wind Farm (State Road Option or Route 1)
Project number 675.072296.00005
Prepared by JC
Reviewed by CS/GD

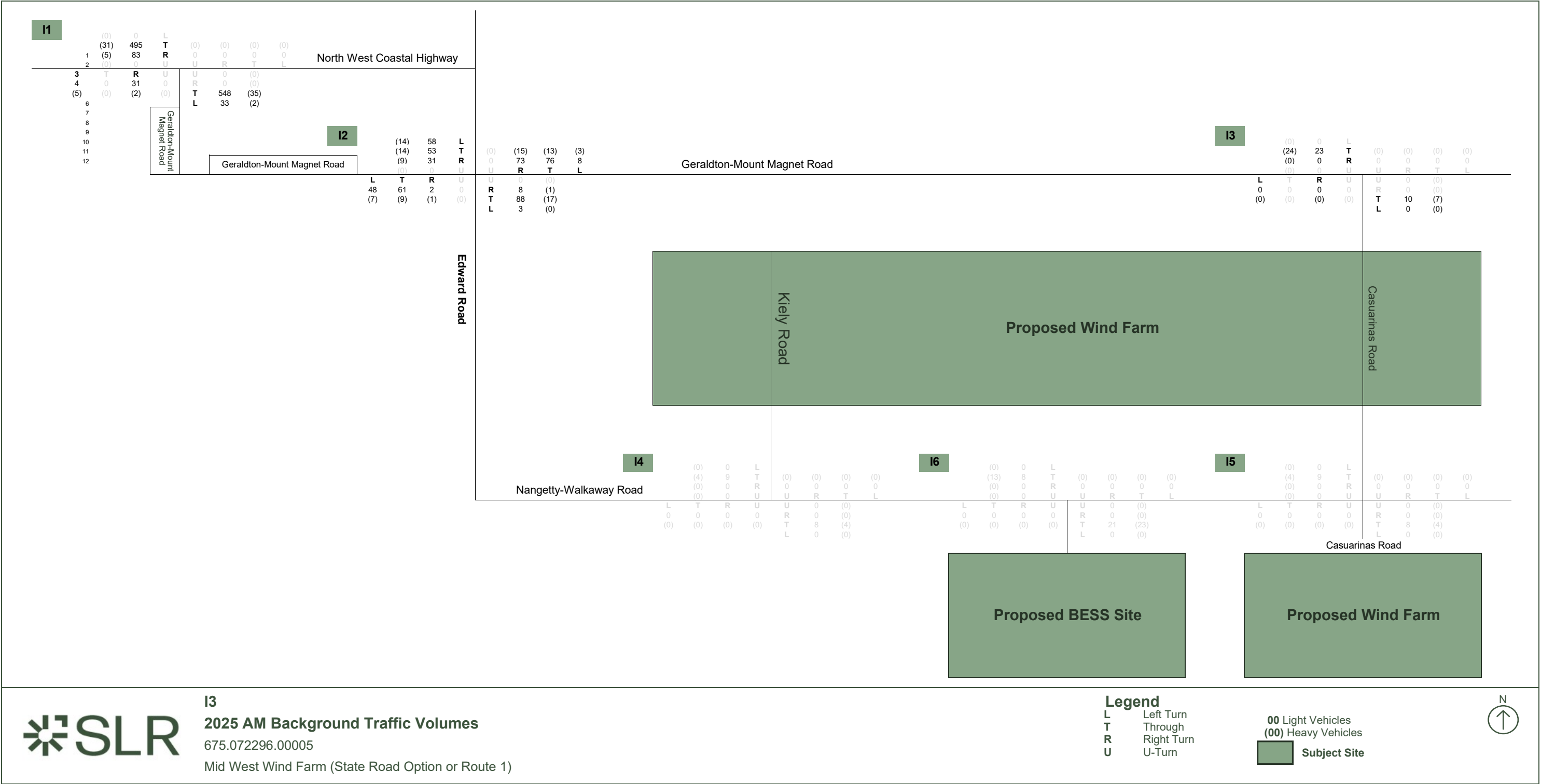
Appendix I

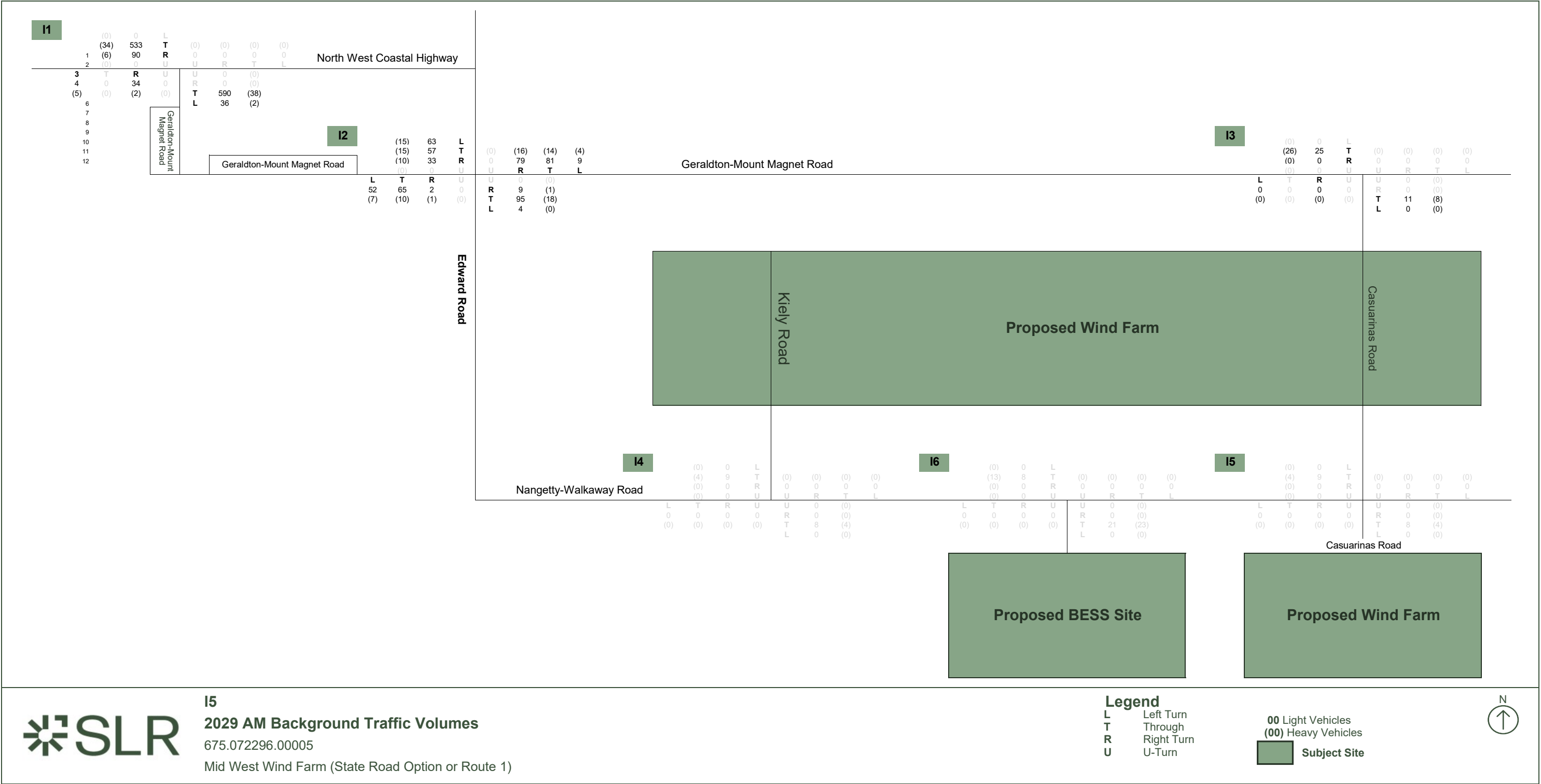
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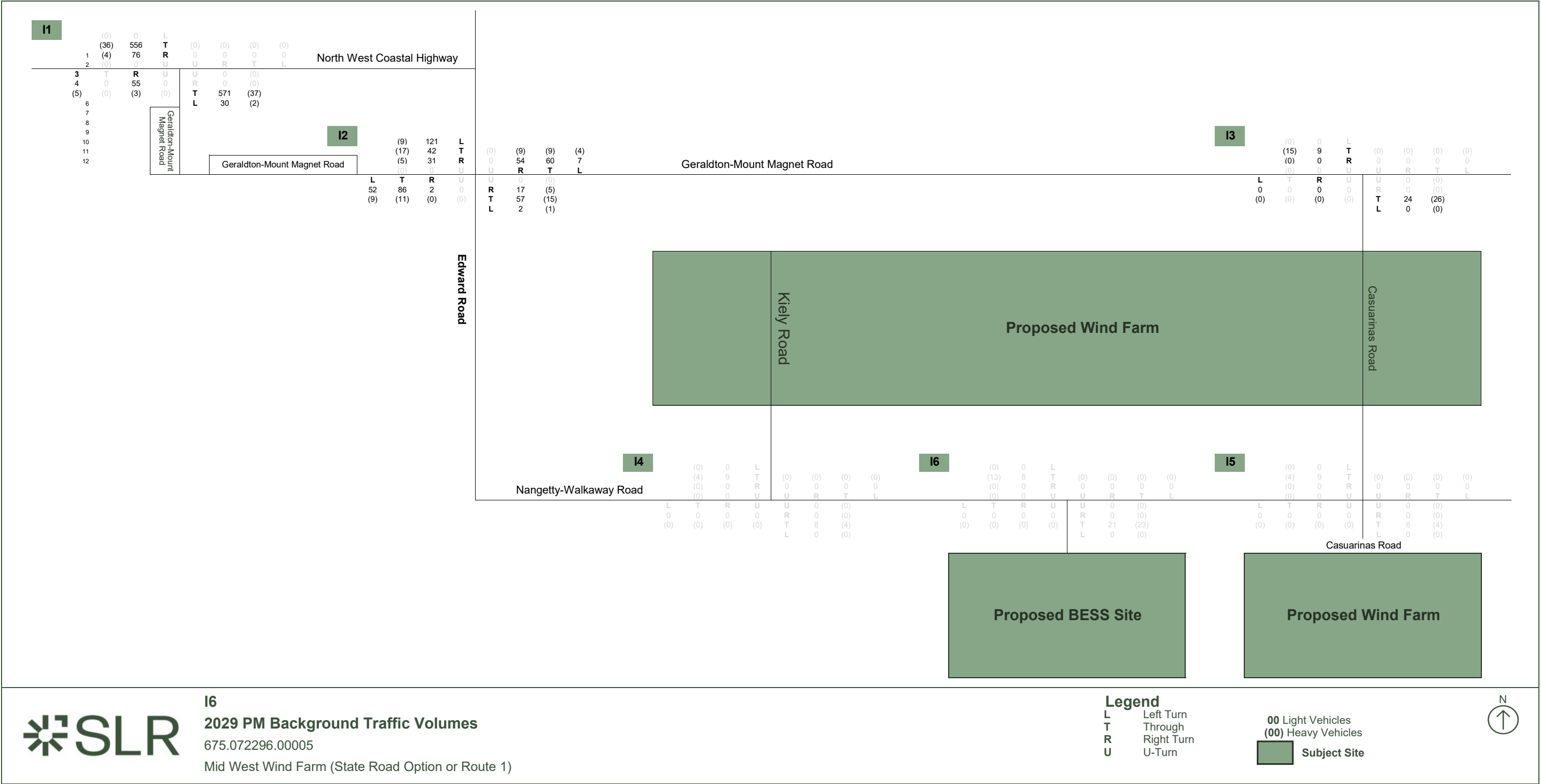
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2023 Traffic Data AM	1	2023 AM Traffic Volumes (MRWA)
2023 Traffic Data PM	2	2023 PM Traffic Volumes (MRWA)
2025 BG AM	3	2025 AM Background Traffic Volumes
2025 BG PM	4	2025 PM Background Traffic Volumes
2029 BG AM	5	2029 AM Background Traffic Volumes
2029 BG PM	6	2029 PM Background Traffic Volumes
DEV AM	7	Construction Traffic AM
DEV PM	8	Construction Traffic PM
2025 BG+DEV AM	9	2025 AM Background with Construction Traffic Volumes
2025 BG+DEV PM	10	2025 AM Background with Construction Traffic Volumes
2029 BG+DEV AM	11	2029 AM Background with Construction Traffic Volumes
2029 BG+DEV PM	12	2029 PM Background with Construction Traffic Volumes

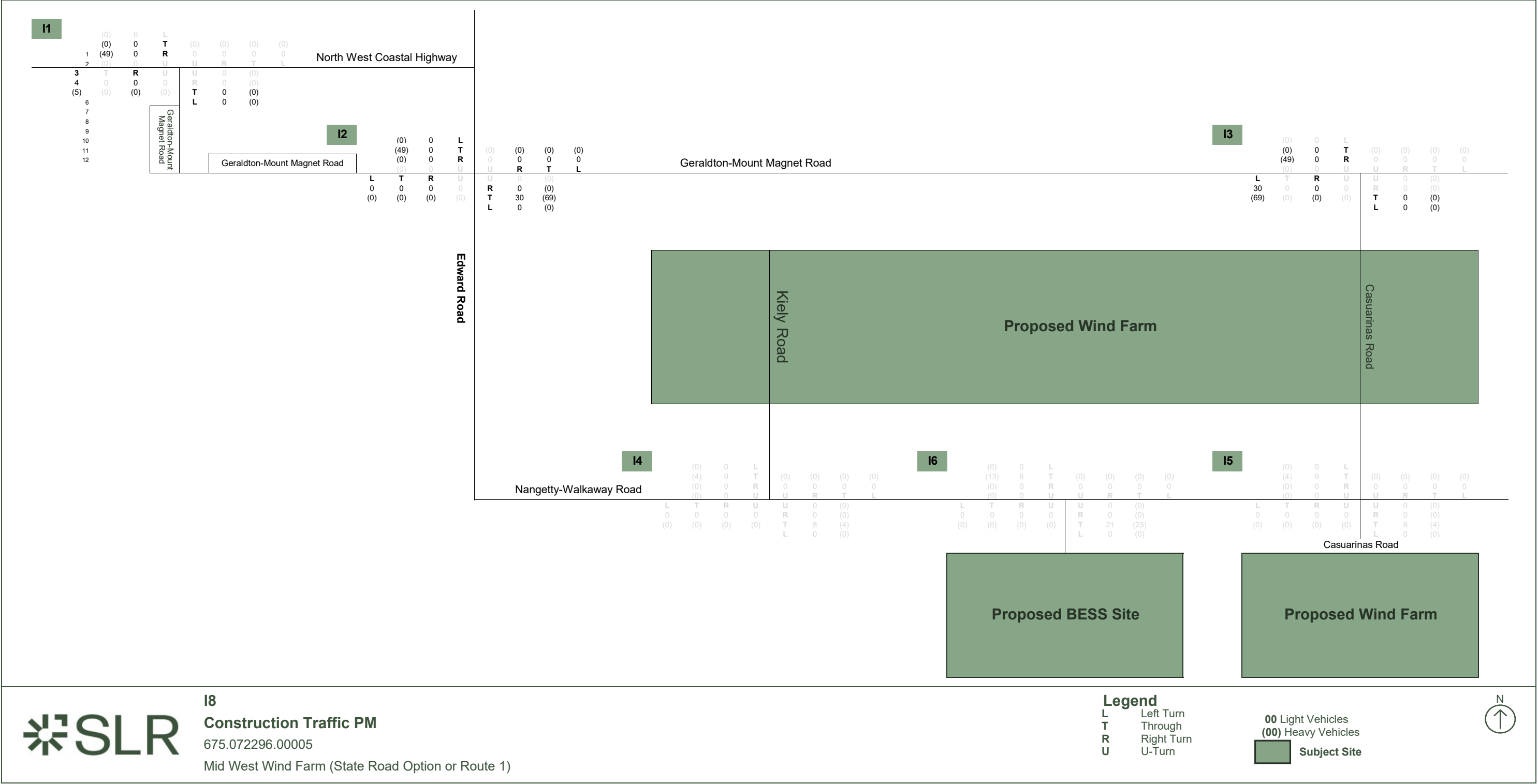


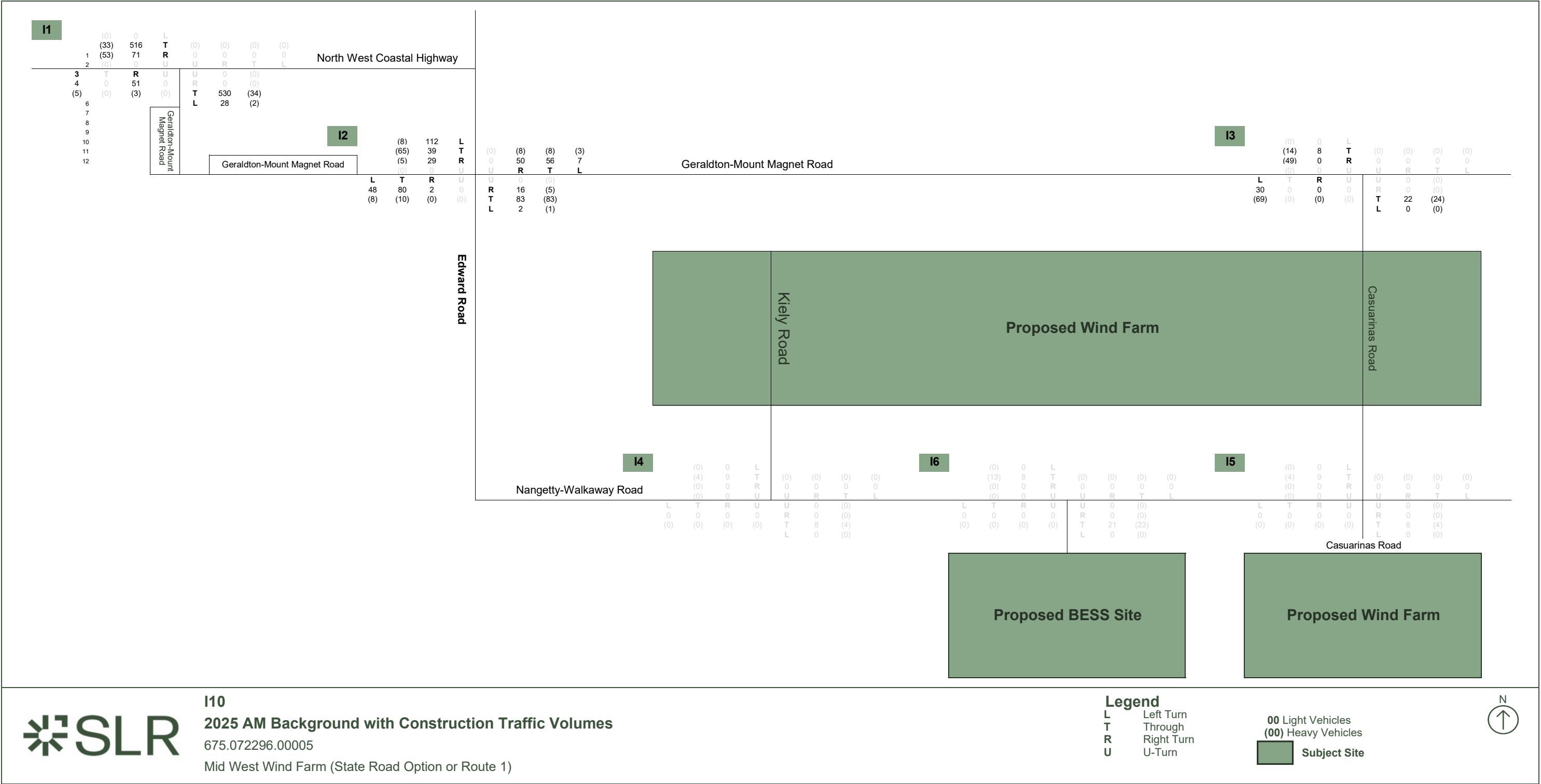














I10

2025 AM Background with Construction Traffic Volumes

675.072296.00005

Mid West Wind Farm (State Road Option or Route 1)

Legend

L Left Turn

T Through

R Right Turn

U U-Turn

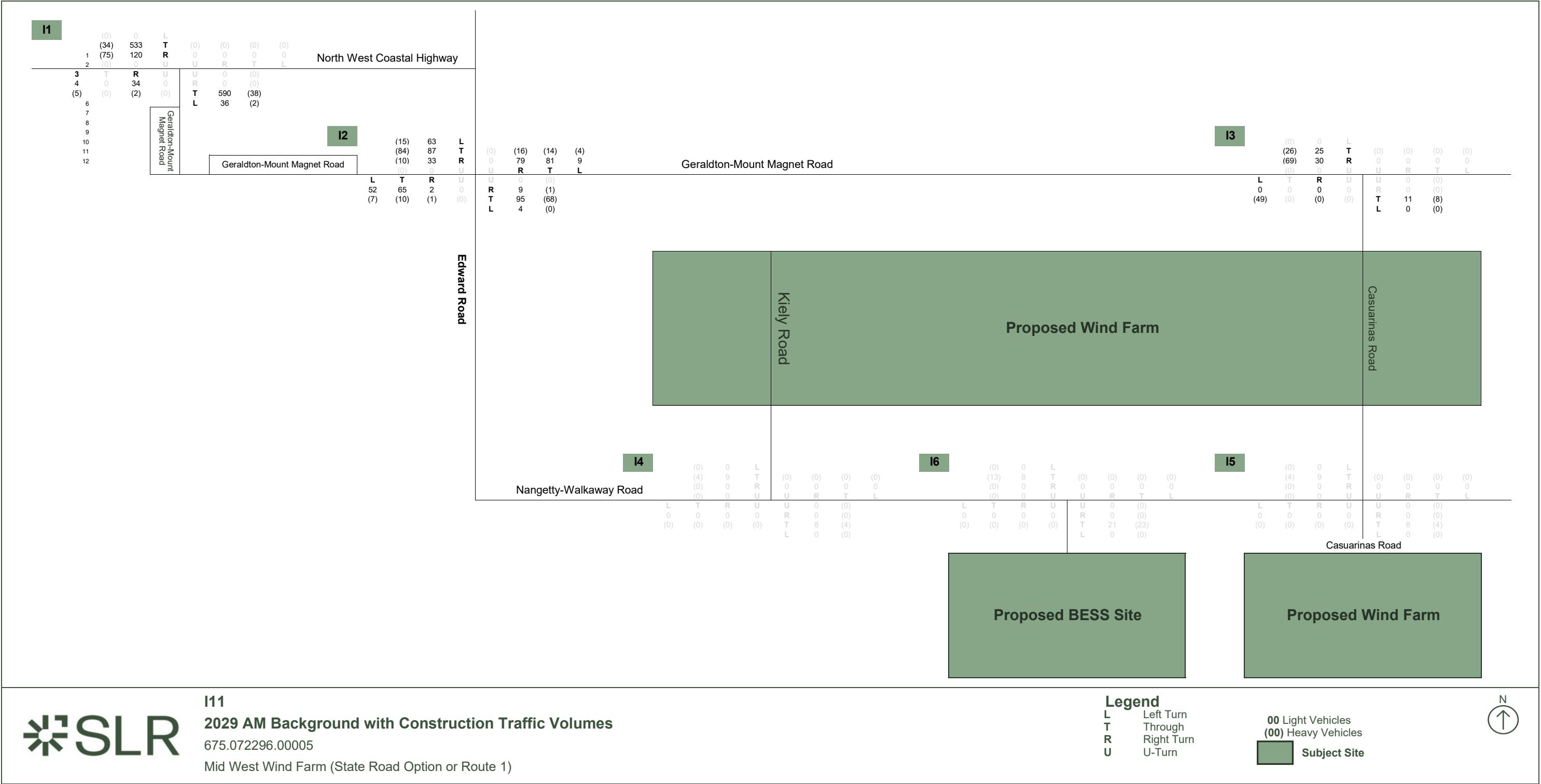
00 Light Vehicles

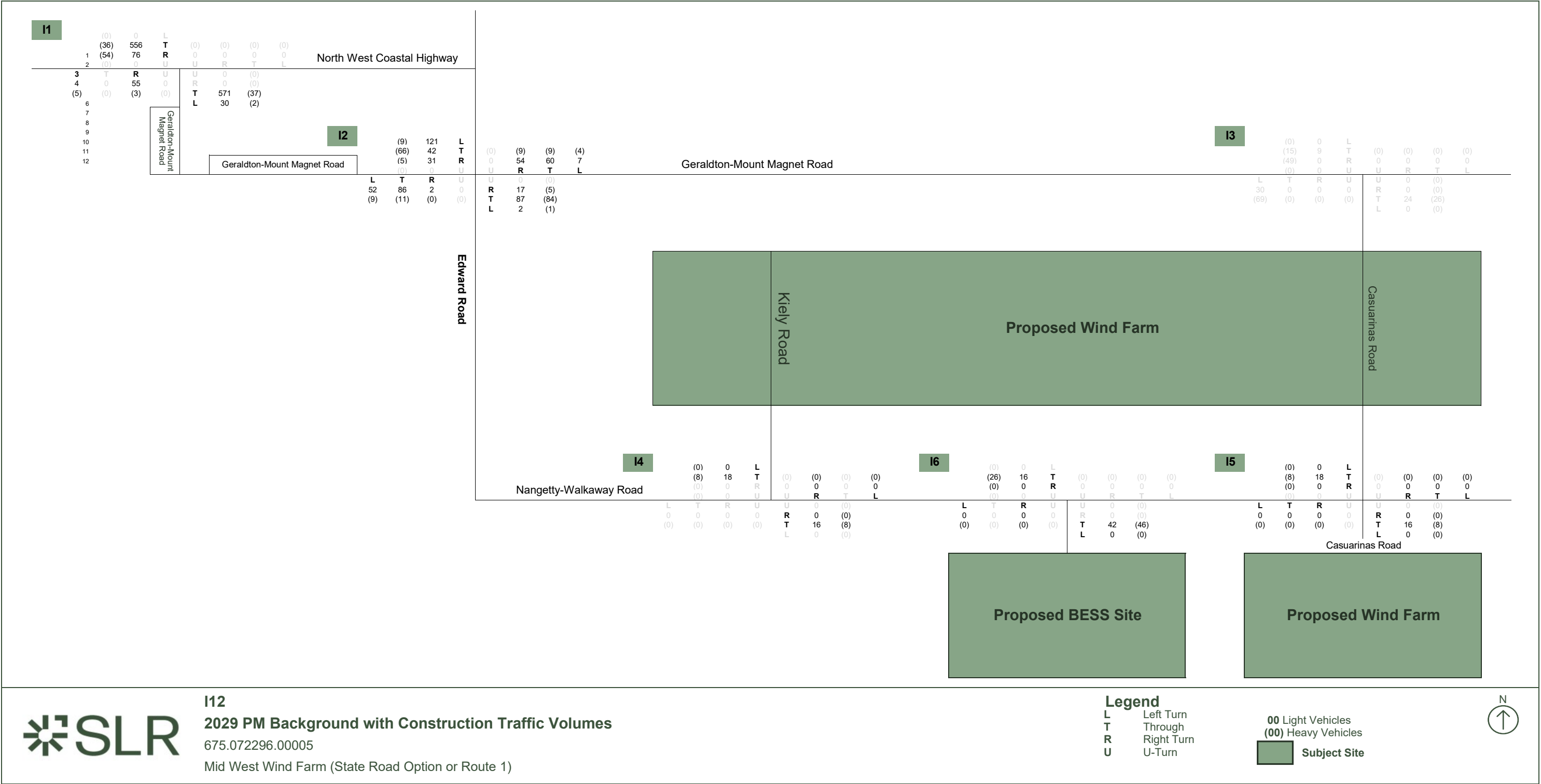
(00) Heavy Vehicles

Subject Site

N

↑



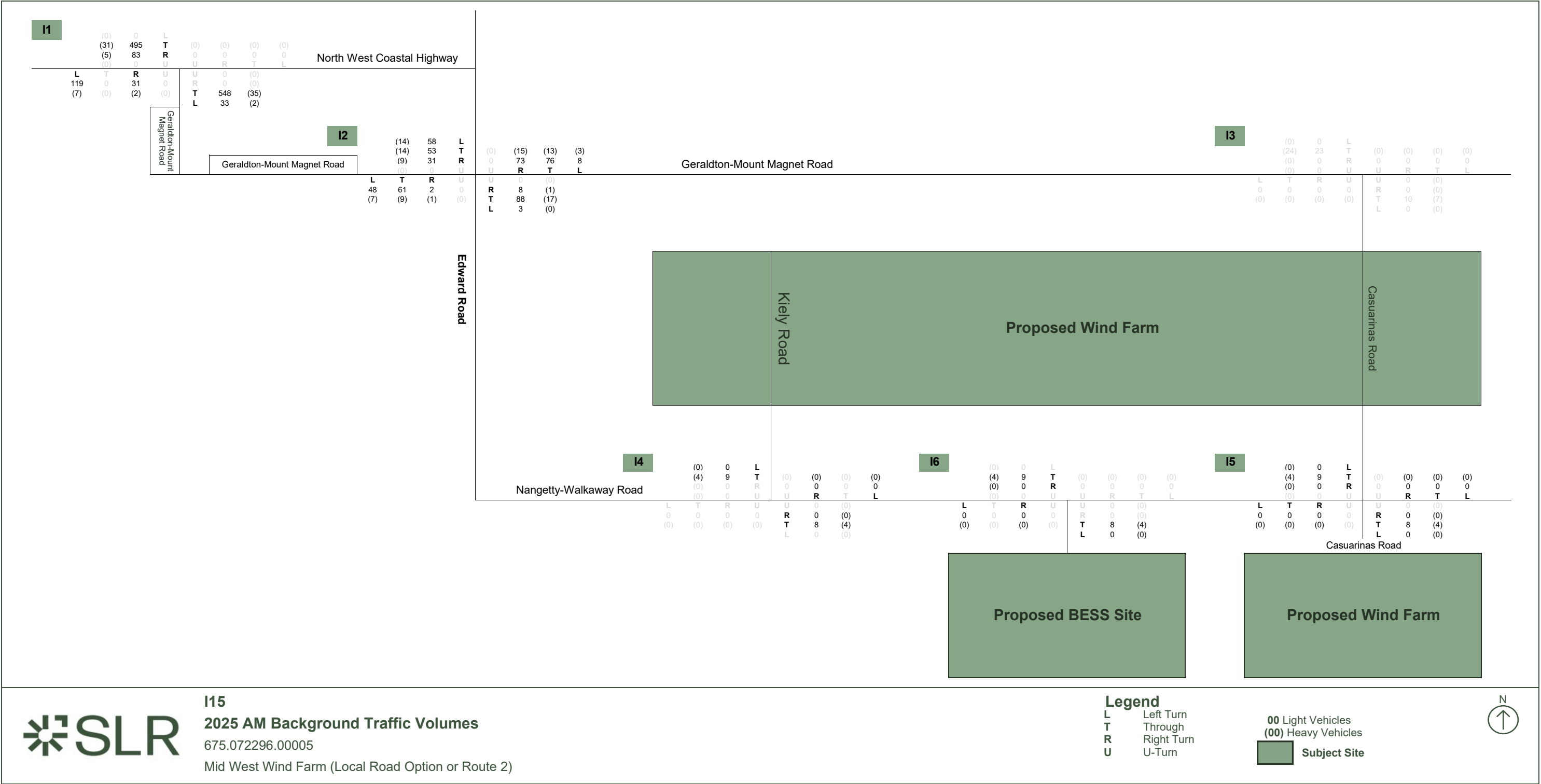


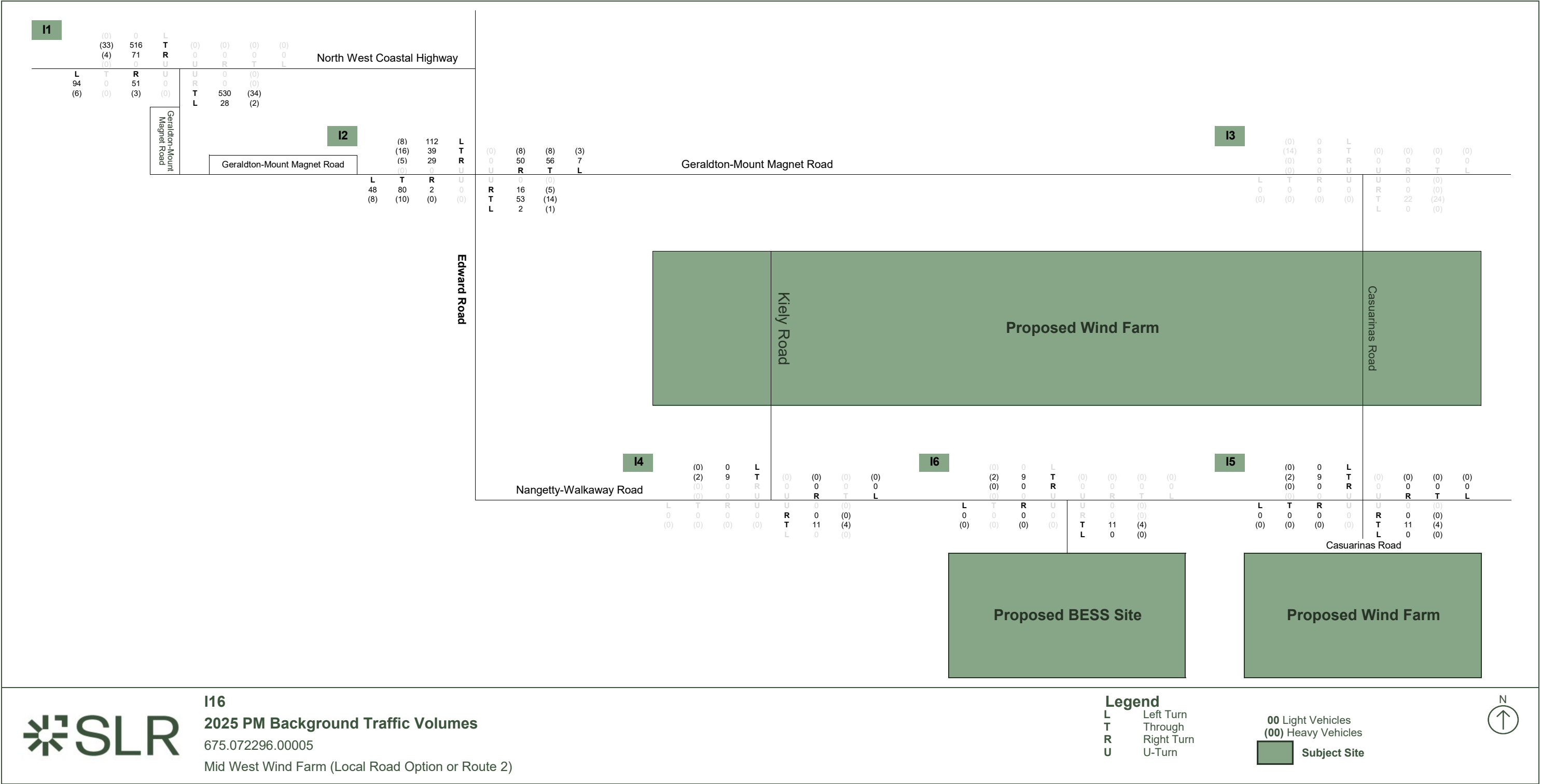
Project Mid West Wind Farm (Local Road Option or Route 2)
Project number 675.072296.00005
Prepared by JC
Reviewed by CS/GD

Appendix I

TITLE BLOCK REGISTER

Sheet Name	Figure #	Figure Title
2023 Traffic Data AM	13	2023 AM Traffic Volumes (MRWA)
2023 Traffic Data PM	14	2023 PM Traffic Volumes (MRWA)
2025 BG AM	15	2025 AM Background Traffic Volumes
2025 BG PM	16	2025 PM Background Traffic Volumes
2029 BG AM	17	2029 AM Background Traffic Volumes
2029 BG PM	18	2029 PM Background Traffic Volumes
DEV AM	19	Construction Traffic AM
DEV PM	20	Construction Traffic PM
2025 BG+DEV AM	21	2025 AM Background with Construction Traffic Volumes
2025 BG+DEV PM	22	2025 AM Background with Construction Traffic Volumes
2029 BG+DEV AM	23	2029 AM Background with Construction Traffic Volumes
2029 BG+DEV PM	24	2029 PM Background with Construction Traffic Volumes







I16

2025 PM Background Traffic Volumes

675.072296.00005

Mid West Wind Farm (Local Road Option or Route 2)

Legend

L

Left Turn

T

Through

R

Right Turn

U

U-Turn

00

Light Vehicles

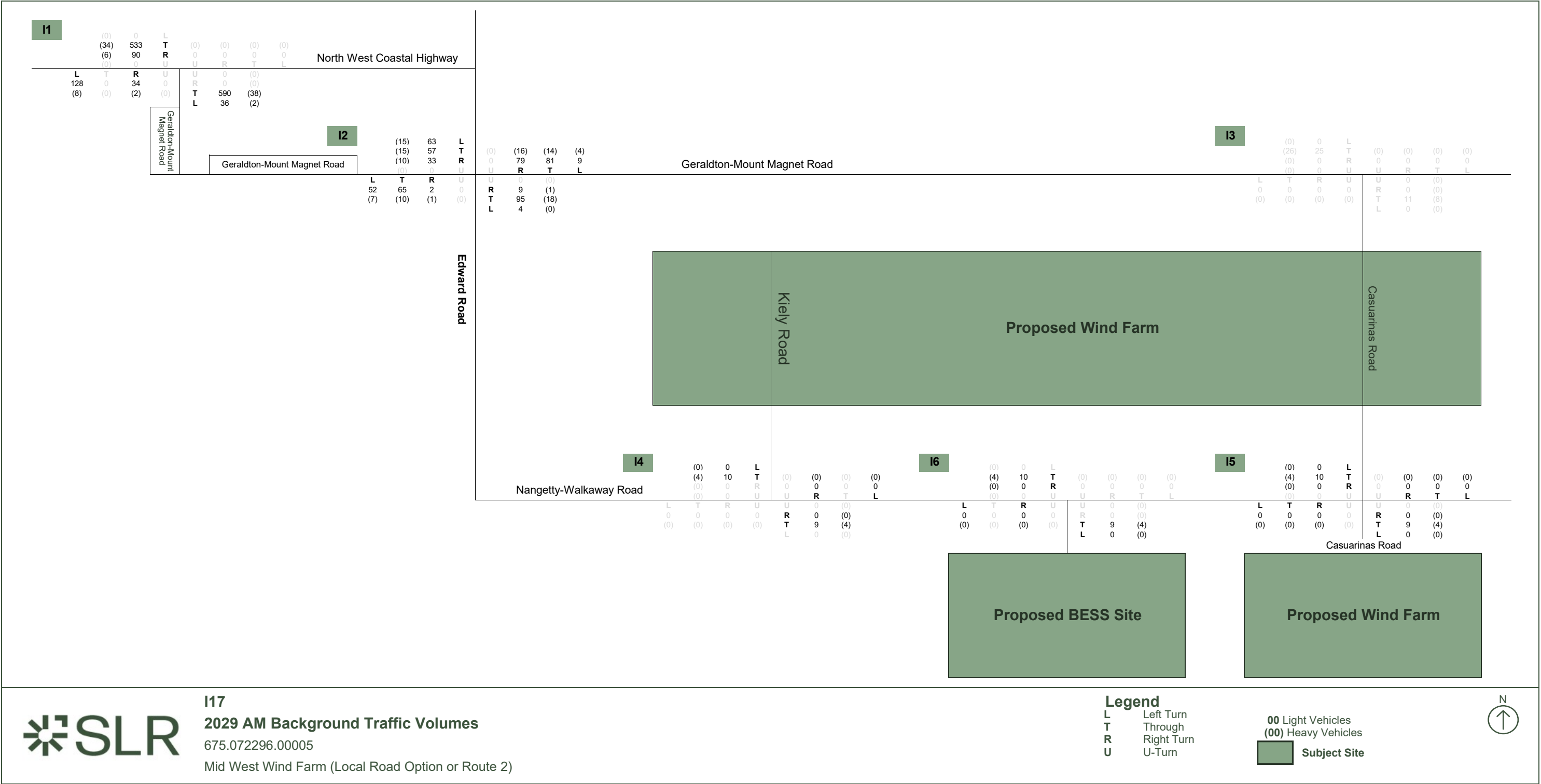
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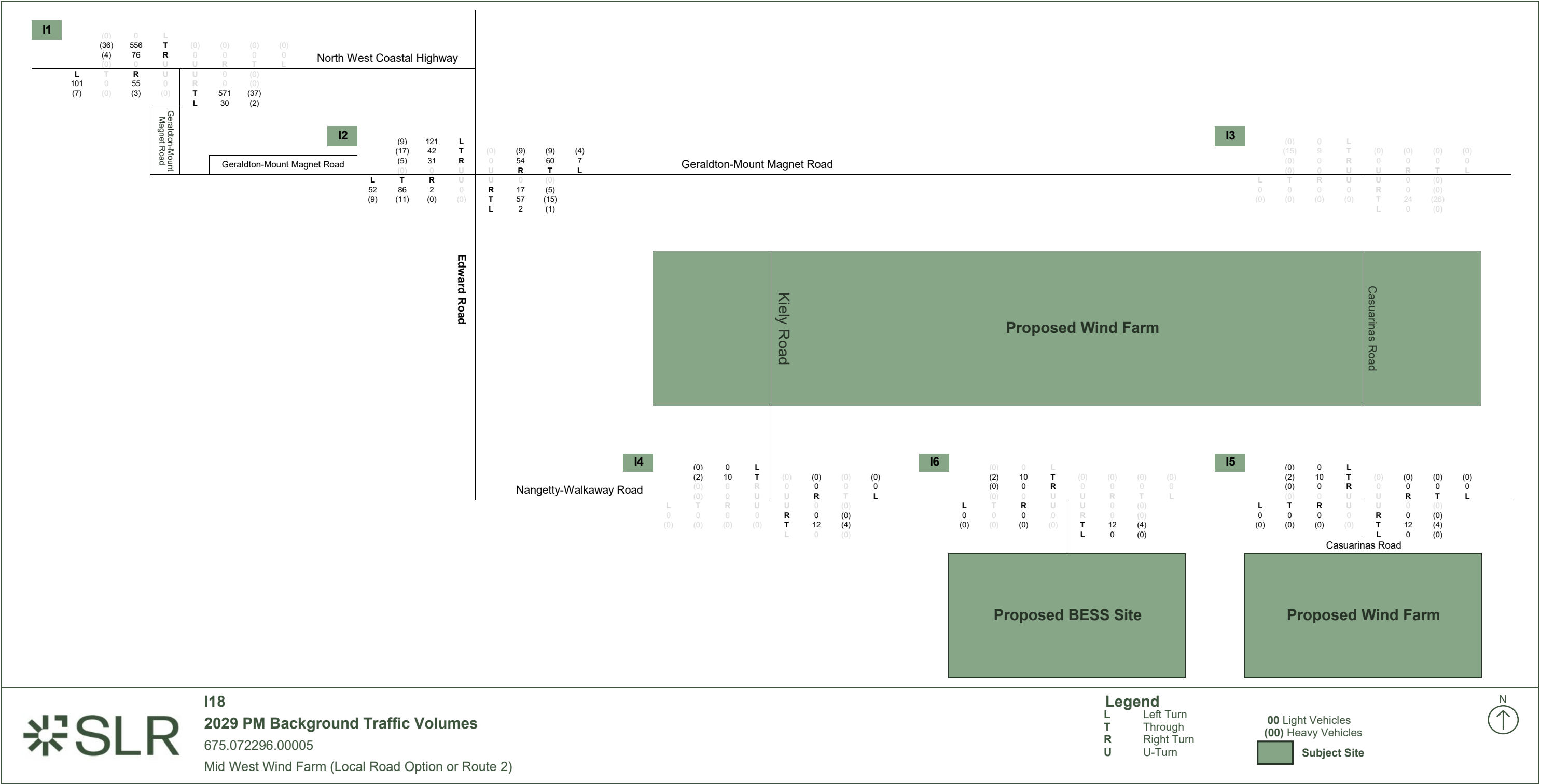
Heavy Vehicles

Subject Site

N

↑







I18

2029 PM Background Traffic Volumes

675.072296.00005

Mid West Wind Farm (Local Road Option or Route 2)

Legend

L Left Turn

T Through

R Right Turn

U U-Turn

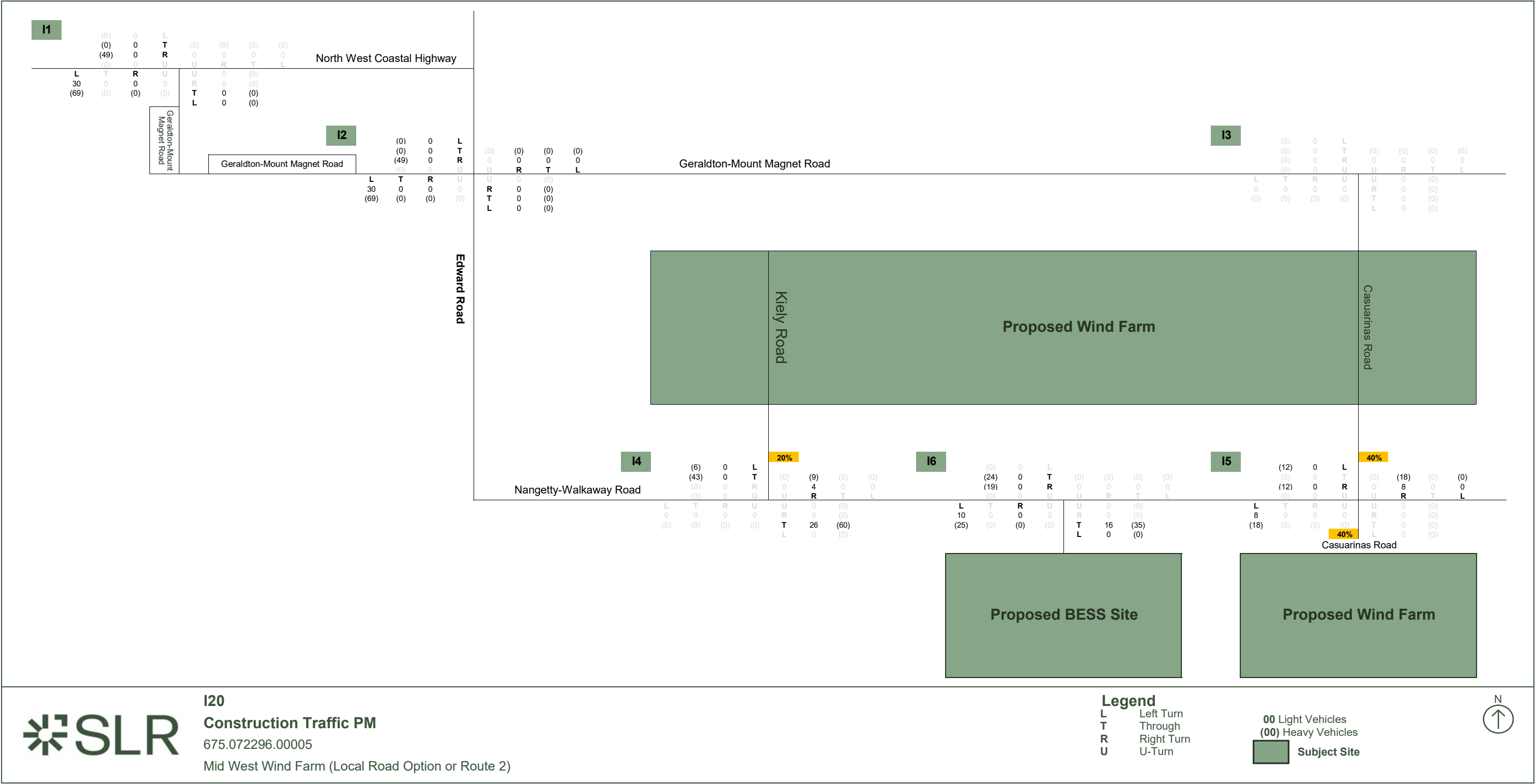
00 Light Vehicles

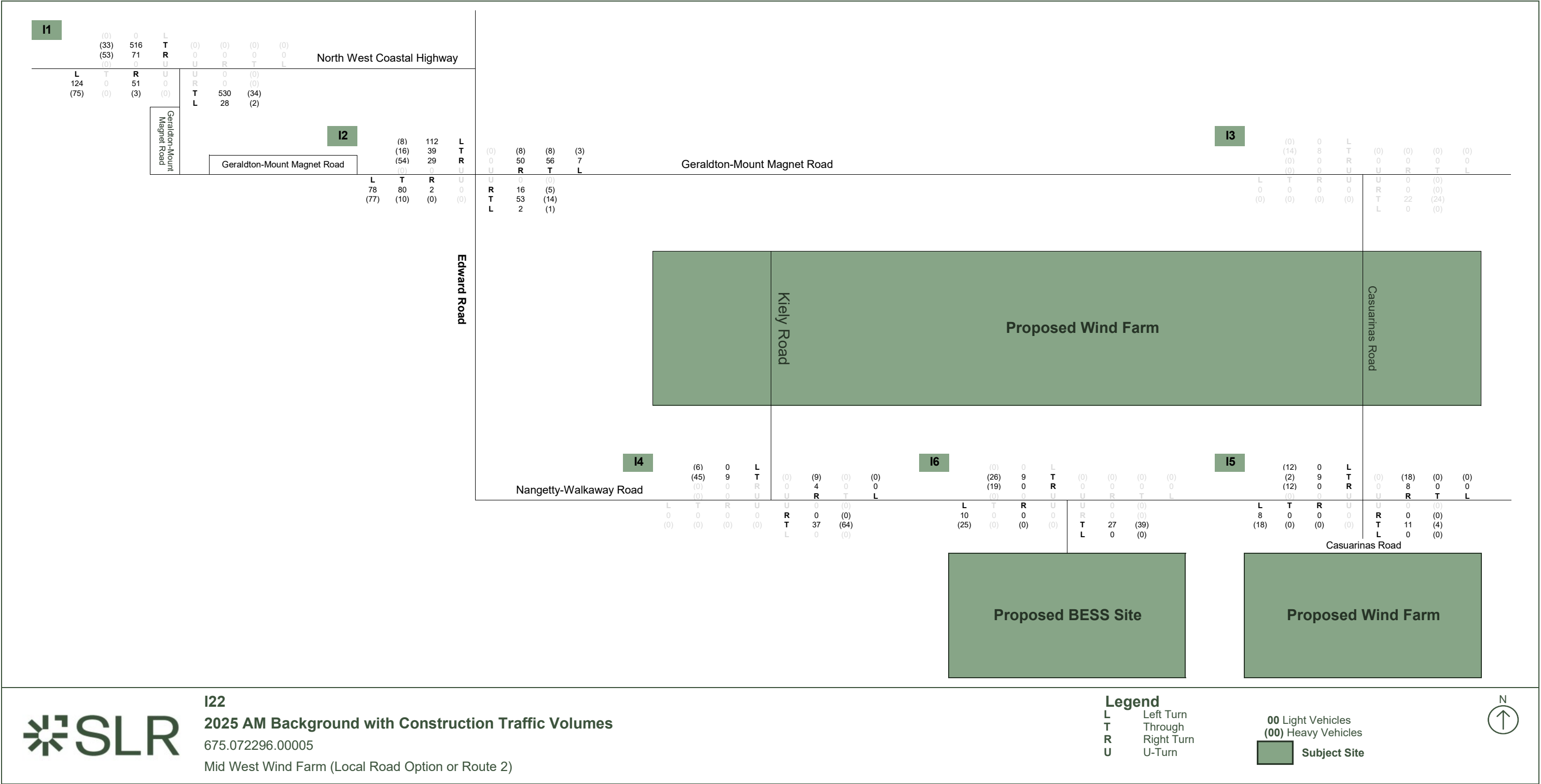
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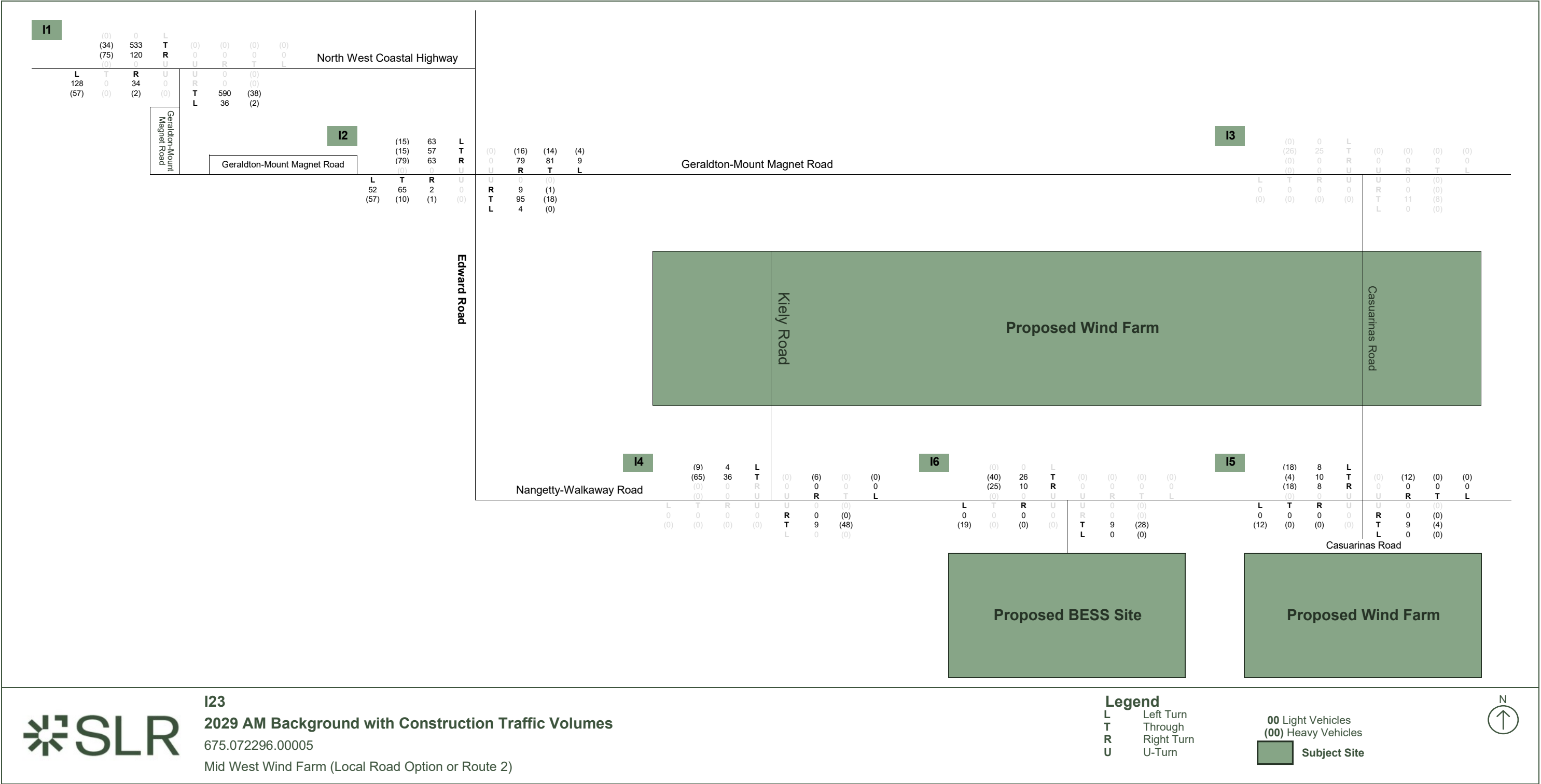
 Subject Site

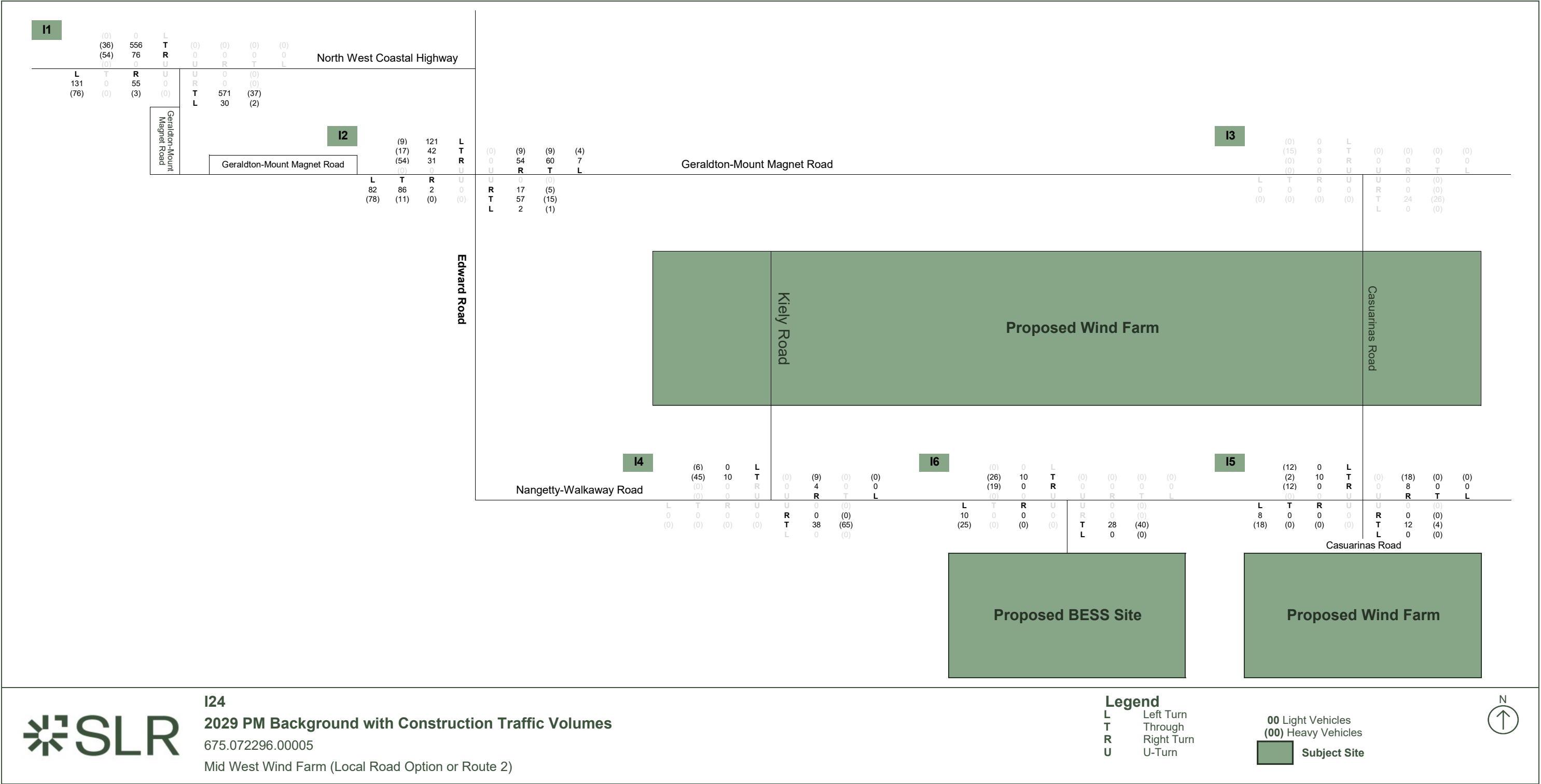
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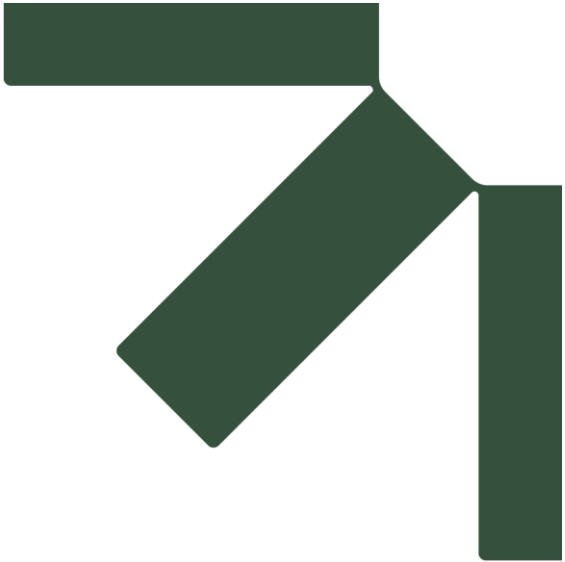












Appendix J Drivers' Code of Conduct

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

5 August 2026

DRIVERS CODE OF CONDUCT

Safe Driving Policy for Mid West Wind Farm, Casuarinas Road WA.

1. Objectives

- To minimise the impact of earthworks and construction on the local and state road network:
 - Minimise conflict with other road users.
 - Minimise road traffic noise.
 - Ensure truck drivers use specified routes.

2. Code of Conduct

All vehicle operators accessing the site must:

- Take reasonable care for his or her own personal health and safety.
- Not adversely, by way of actions or otherwise, impact on the health and safety of other persons.
- Notify their employer if they are not fit for duty prior to commencing their shift.
- Obey all applicable road rules and laws at all times.
- In the event an emergency vehicle is behind your vehicle, pull over and allow the emergency vehicle to pass immediately.
- Obey the applicable driving hours per legislation and take all reasonable steps to manage your fatigue and not drive with high drowsiness.
- Obey all on-site signposted speed limits and comply with directions of traffic control supervisors in relation to movements in and around temporary or fixed work areas.
- Ensure all loads are safely restrained, as necessary.
- If available and required, drive over cattle grids that are located at the site's access to vibrate off any loose material attached to construction vehicles.
- Operate your vehicles in a safe and professional manner, with consideration for all other road users.
- Hold a current Australian State or Territory issued driver's licence.
- Notify your employer or operator immediately should the status or conditions of their driver's licence change in any way.
- Comply with other applicable workplace policies, including a zero tolerance of driving while under the influence of alcohol and/or illicit drugs.
- Not use mobile phones when driving a vehicle or operating equipment. If the use of a mobile device is required, the driver shall pull over in a safe and legal location before using any mobile device.
- Advise management of any situations in which you know or think may present a threat to workplace health and safety.
- Drive according to prevailing conditions (such as during inclement weather) and reduce speed, if necessary.

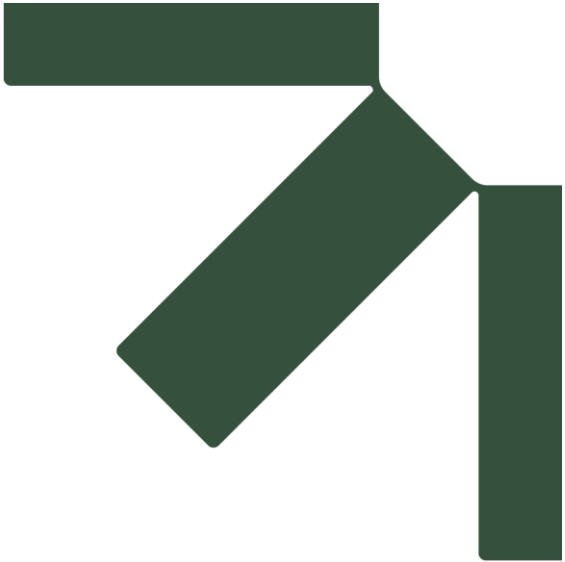


- Have necessary identification documentation at hand and ready to present to security staff on entry and departure from the site, as necessary, to avoid unnecessary delays to other vehicles.

3. Crash or Incident Procedure

- Stop your vehicle as close to it as possible to the scene, making sure you are not hindering traffic.
- Ensure your safety first, then help injured people and seek assistance immediately if required.
 - Ensure the following information is noted:
 - Details of the other vehicles and registration numbers.
 - Names and addresses of the other vehicle drivers.
 - Names and addresses of witnesses.
 - Insurers details.
- Give the following information to the involved parties:
 - Name, address, and company details.
- If the damaged vehicle is not occupied, provide a note with your contact details for the owner to
- contact the company.
- Ensure that the Police are contacted should the following circumstances occur:
 - If there is a disagreement over the cause of the crash.
 - If there are injuries.
 - If you damage property other than your own.
- As soon as reasonably practical, report all details gathered to your manager.





Appendix K BESS Access Swept Path Assessment

Transport Impact Assessment

Mid West Wind Farm

Mid West Wind Farm Pty

SLR Project No.: 675.072296.00005

5 August 2026



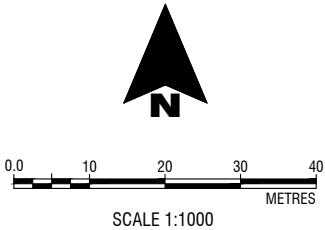
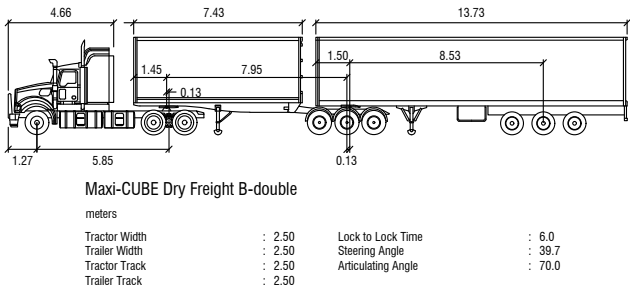


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Project No:	675.072296
Date:	30/07/2026
Drawn by:	JC
Certified by:	CS
Sheet Size:	A3
Projection:	GDA2020 MGA Zone 50

- SWEPT PATH LEGEND
- Vehicle Path
 - Vehicle Body
 - Body Clearance
 - Front Wheels
 - Rear Wheels

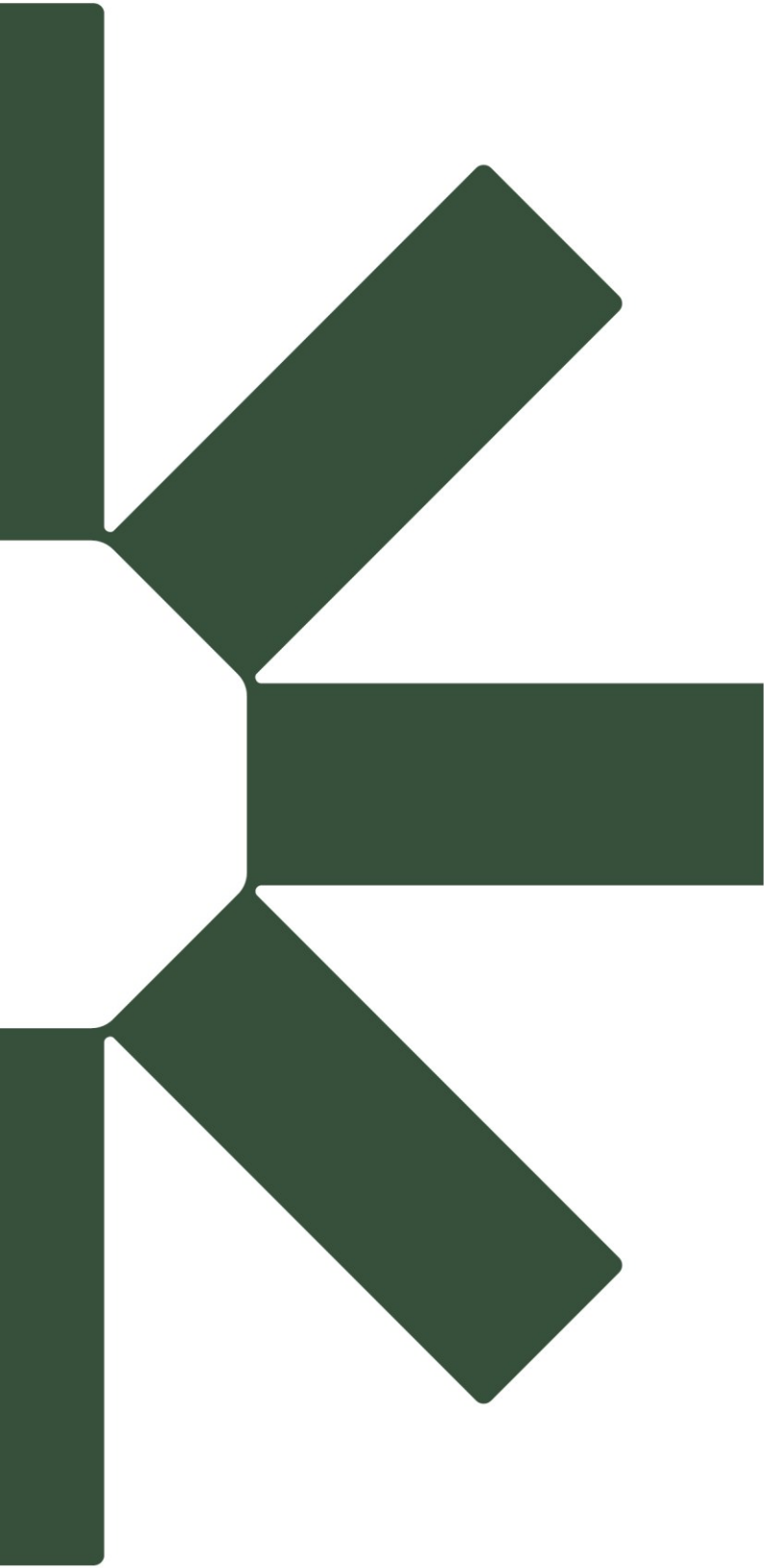


Mid West Wind Farm Pty

Mid West WF BESS Access

**Largest Design Vehicle 27.30m B-Double
Swept Path Assessments (Site Access)**

FIGURE SK01



Making Sustainability Happen