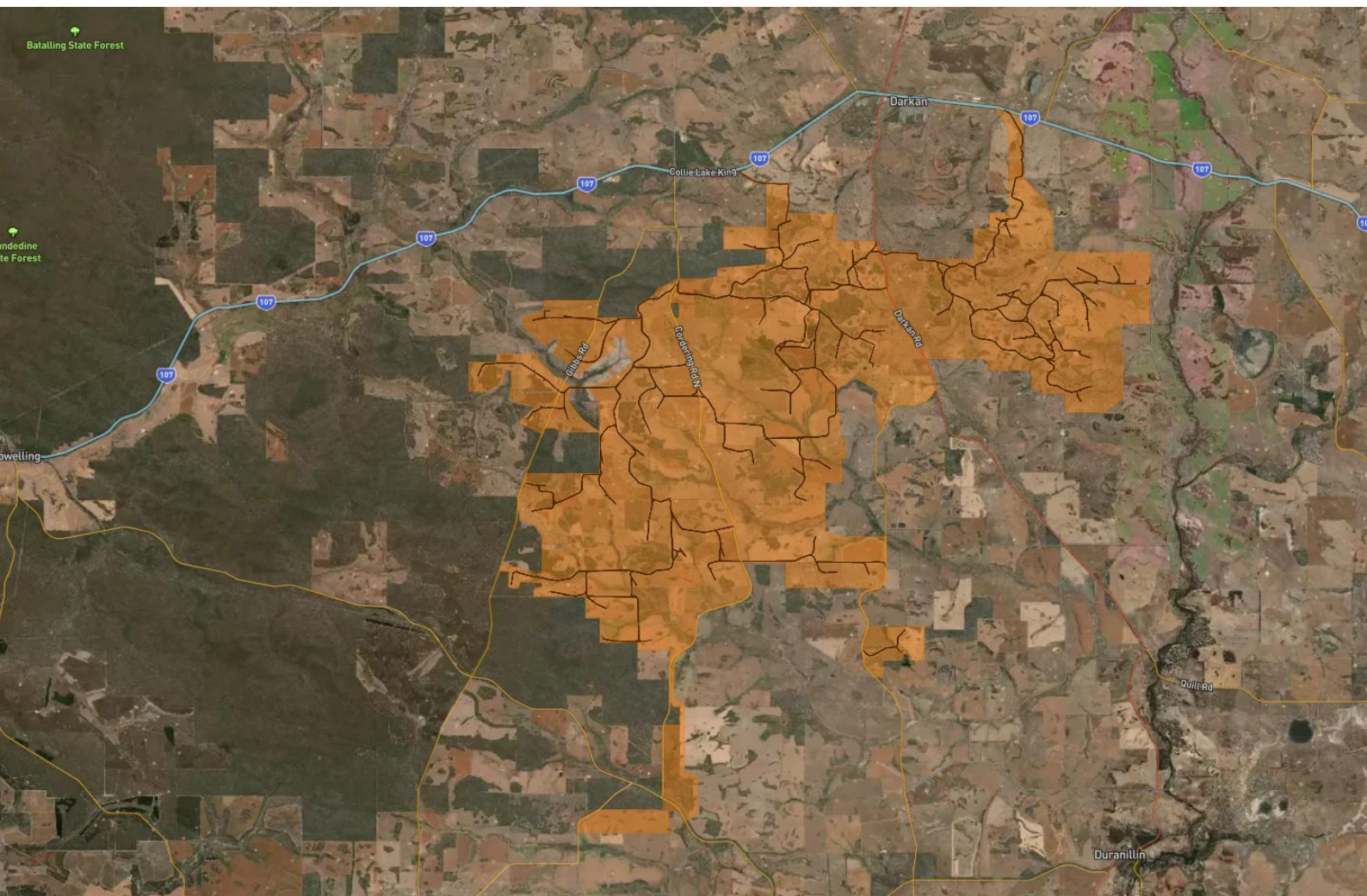




West Arthur Wind Farm

TRANSPORT IMPACT ASSESSMENT



PROJECT	81113-988-FLYT-TIA-0005 Rev2			
TITLE	West Arthur Wind Farm			
Revision	Description	Originator	Review	Date
0	Draft	CXS	CAS/Lacour	06/05/26
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Contents

1.	SUMMARY	5
2.	INTRODUCTION.....	6
2.1	Development Introduction	6
2.2	Transport Impact Assessment.....	7
2.3	Shire of West Arthur Local Planning Policy 5	8
2.4	Report Structure	8
3.	PROPOSED DEVELOPMENT	9
3.1	Development Site.....	9
3.2	Proposed Development.....	9
3.2.1	Operation and Maintenance Facilities.....	11
3.2.2	Internal Accommodation Compound	12
3.2.3	BESS	13
3.2.4	Construction and Operational Workforce.....	13
3.2.5	Development Stages	14
4.	ACCESS ROUTE TO SITE	15
4.1	Routes	15
4.2	Bunbury Port	15
4.3	Bunbury Port to WAWF Project Area via Coalfields Road.....	17
4.3.1	Route One	18
4.3.2	Route Two	24
4.3.3	Management of Roads.....	28
4.3.4	Rail Crossings.....	28
4.4	Swept Path Analysis.....	30
4.4.1	Swept Paths – Forrest Highway Route	30

4.4.2	Swept Paths – South Western Highway Route.....	37
4.5	Mitigation Measures – Bunbury Route via Coalfields Road	40
5.	ROAD NETWORK.....	45
5.1	Existing Road Network.....	45
5.1.1	Road Network Volumes.....	47
5.1.2	Coalfields Road (Collie Lake King Road)	50
5.1.3	Cordering Road North.....	52
5.1.4	Darkan Road South.....	54
5.1.5	Gibbs Road	56
6.	VEHICLE ACCESS	57
6.1	Vehicle Access.....	57
6.1.1	Project Access Point – Oversize Loads	58
6.1.2	Project Access Point – Workforce Accommodation, BESS and Operations Area	59
6.1.3	Project Crossing Points – Southern Cordering Road North.....	60
6.1.4	Project Crossing Points – Darkan Road	65
6.1.5	Project Crossing Points – Other Roads.....	67
6.2	Track Construction.....	67
6.3	Vehicle Types.....	68
6.3.1	As of Right Vehicles	68
6.3.2	Restricted Access Vehicles – Not Oversize or Overmass.....	68
6.3.3	Oversize and/or Overmass (OSOM) Vehicles.....	69
6.4	Traffic Management.....	70
7.	FORECAST TRAFFIC VOLUMES.....	71
7.1	Introduction	71
7.2	Headline Traffic Movements.....	71
7.3	Trip Generation.....	73

7.3.1	Traffic Generation - WTG.....	74
7.3.2	Traffic Generation - BESS	76
7.3.3	Traffic Generation – Transmission Lines	77
7.3.4	Traffic Generation - Accumulative.....	77
7.4	Safe Intersection Sight Distance Analysis.....	87
7.5	Driveway Policy	87
8.	COMMITTED DEVELOPMENTS AND OTHER TRANSPORT PROPOSALS.....	89
8.1	Projects.....	89
9.	ROAD SAFETY	92
9.1	Crash Information.....	92
9.2	Project Requirements	93
10.	MITIGATION MEASURES	94
10.1	Mitigations.....	94
11.	SUMMARY AND CONCLUSIONS.....	96
11.1	Summary.....	96
12.	CHECKLIST	99
	Appendix A.....	101

1. SUMMARY

Item	Response
Local Government	Shire of West Arthur
ILUA Region	Gnaala Karla Booja
Site Lot(s)	Multiple landholdings
Street Frontage	Multiple roads across land holdings including Gibbs Road, Cordering Road North, Darkan Road South, Beer Bottle Road, Schinzig Buller Road, Capercup Road North
Development Type(s)	Wind Turbine Generator renewables project with adjoining components including a Battery Energy Storage System (BESS), substation, Operations and Maintenance compound and temporary construction workforce accommodation
Local Planning Scheme	Shire of West Arthur Local Planning Scheme No. 2
Access Crossovers	Multiple locations on frontage roads listed above with internal project tracks linking Wind Turbine Generators and project sites
Parking Provision	Not applicable to development, parking on-site at locations as required
Vehicle Trips Generated	Estimation of up to 350+ vehicle trips per day during peak construction period spread around the Project Area of 17km x 12km. Volumes will vary depending on stage of project. Access arrangements designed to minimise impacts where possible

2. INTRODUCTION

2.1 Development Introduction

This Transport Impact Assessment (TIA) has been prepared by Flyt in support of the West Arthur Wind Farm (WAWF) (the project) proposed by West Arthur Energy Pty Ltd. As indicated by the South West Aboriginal Land and Sea Council website; the project sits within the Gnaala Karla Booja ILUA Region.

The general location of the proposed WAWF development south of Darkan is shown in Figure 1. Given it is spread over multiple landholdings, the entire area is generally described as the “Project Area”. The Project Area is located within the Shire of West Arthur, with the Shire administration office based in Darkan.

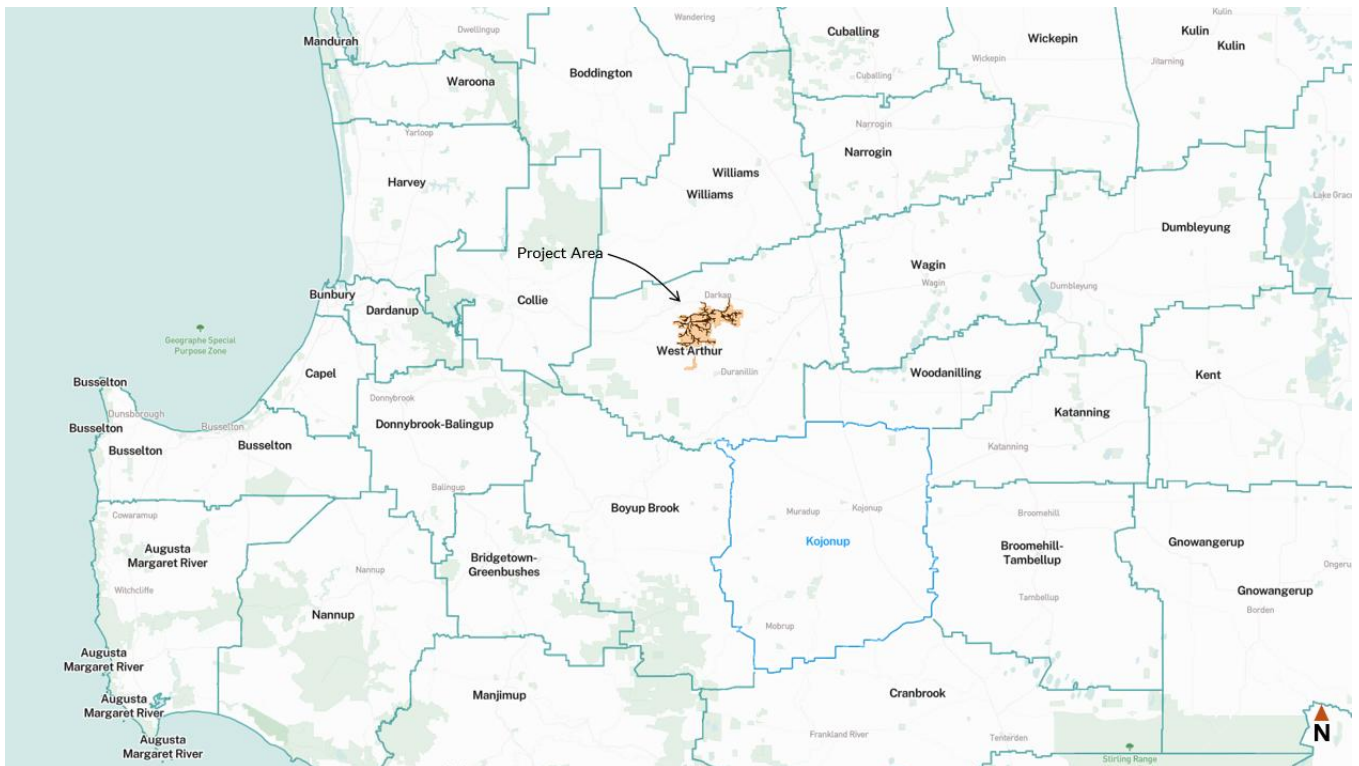


Figure 1 Wind Farm Project Area and Local Government boundaries (source: Planwisely)

The project is considering up to 92 wind turbine generator (WTG) locations using 91m turbine blades with a maximum tip height of up to 253m and hub height of 160m. In addition, there will be a Battery Energy Storage System (BESS) as part of the project along with a range of other site based components – some of which will only be in place for construction purposes.

2.2 Transport Impact Assessment

This TIA has been prepared in keeping with the WA Planning Commission's (WAPC) Transport Impact Assessment Guidelines (Volume 4 – Individual Developments). The Guidelines promote a three level assessment process, where the required level of assessment is dependent on the likely level of impact, as follows (and as shown in Figure 2):

- Low impact – less than 10 peak hour trips, no assessment required;
- Moderate impact – between 10 and 100 peak hour trips, Transport Impact Statement required; and
- High impact – more than 100 peak hour trips, full Transport Impact Assessment required.

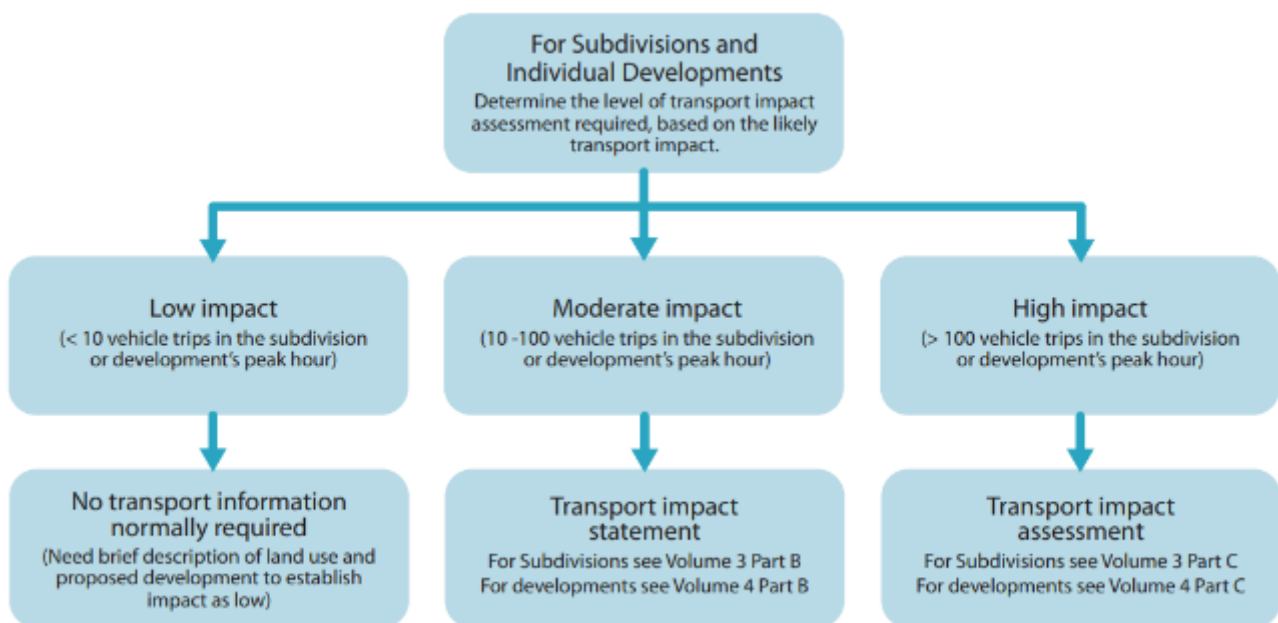


Figure 2 Level of transport impact assessment required (source: WAPC)

Traffic and transport impacts associated with this form of development proposal are not standard or typical of urban based development. Impacts on the network will be primarily associated with construction and initial commissioning of the project and they will likely be spread out over 18 months to 2 years with some more intense periods of activity.

Therefore, the key considerations of the assessment are not based around volumes of traffic within a given peak hour, but the wider area and more specific impacts of transporting and installing wind turbine generator components. The focus of the assessment sets out impacts to the local and State road network adjacent to the site. Some typical considerations generally included in site development assessments such as pedestrian, cycling, public transport and parking are not covered in this assessment.

2.3 Shire of West Arthur Local Planning Policy 5

The Shire of West Arthur has a policy specific to wind farms which includes a statement on Site Access and Traffic Management. The section of the Policy relevant to this assessment is:

“These provisions apply to both the construction and operation of the facility. No works can occur within a State Road Reserve controlled by Main Roads WA (MRWA) without MRWA’s authorisation. Local roads are managed by the Shire.

Any application is to nominate the proposed site access/egress and includes documents that condition the proposed access, including for the construction of the facility. It is noted that the removal of vegetation within a road reserve may require approval under the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

The use of unconstructed roads for site access is unlikely to be supported and the Shire is not responsible for providing access to any development site.

The Shire and/or Main Roads WA may require lodgement of a ~~Traffic~~ (Transport) Impact Assessment prepared by a suitably qualified traffic engineer in accordance with Volume 4 Individual Development of the WAPC Traffic (Transport) Impact Assessment Guidelines (2016).

The Shire Council may place conditions on any development approval to ensure any costs associated with road damaged, widening or upgrading are met by the developer”.

This TIA covers the requirements of the Shire of West Arthur Local Planning Policy 5.

2.4 Report Structure

The report is structured using elements from the WAPC Transport Impact Assessment Guidelines, and addresses the following:

- Proposed development
- Route assessment
- Road network
- Vehicle access
- Forecast traffic volumes and vehicle types
- Committed developments
- Road safety
- Site specific context
- Summary and conclusions.

3. PROPOSED DEVELOPMENT

3.1 Development Site

The WAWF Project Area is located to the east of the Darling Scarp, 100km east of Bunbury along Coalfields Road south of Darkan. The Project Area is spread over an area of approximately 17km by 12km. The Project Area plan showing internal track layouts and wind turbine generator locations is shown in Figure 3.

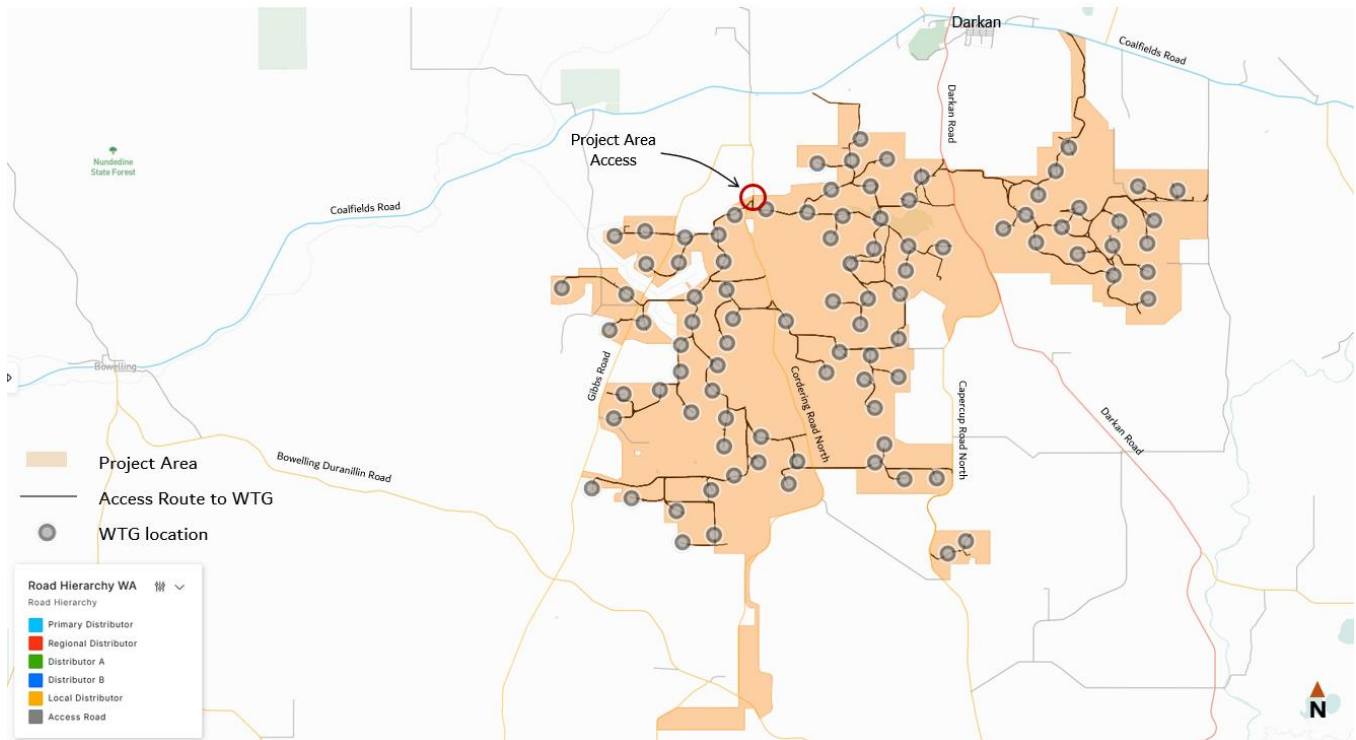


Figure 3 Access and layout for West Arthur Wind Farm (source: West Arthur Energy / Planwisely)

3.2 Proposed Development

The overall development proposition relevant to the TIA assessment is:

- 92 WTG sites, with 38 located to the west of Cordering Road North, 18 to the east of Darkan Road and the remainder (36) generally in between those two roads
- Hardstands at the base of each turbine
- Onsite electrical substation
- Internal site access tracks
- Operations and maintenance facilities
- On-site temporary workers accommodation for 300 personnel (construction only)
- Battery Energy Storage System (BESS).

- Transmission connection

The proposed development will result in the movement of large indivisible components to the site which include WTG tower components, nacelles and wind turbine blades. The assessment of the network connections and route to site has been based on understanding implications for the wind turbine blades as an Over Size Over Mass (OSOM) load. The configuration examined for the proposed 91m blade is shown in Figure 4.

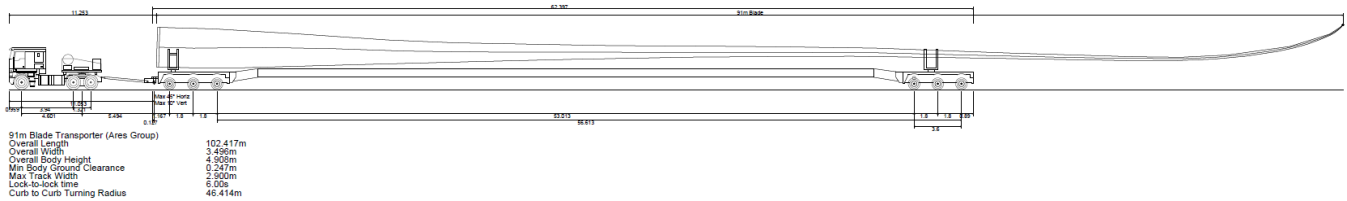


Figure 4 Vehicle profile for turbine blades used in assessment (source: Access Traffic)

This configuration has been applied for the purpose of this assessment however the transport operator engaged to complete the transport task may use an alternative vehicle format or the turbine blades may evolve. Additionally, over width components such as the transformers associated with the BESS facility would see use of low-loader trucks and loads which would typically sit within the swept path of the turbine blades.

The completion of a Traffic Management Plan (TMP) for the transport task associated with the site construction would include additional details on truck configurations and movements at intersection points as required by Main Roads WA and the Shire of West Arthur.

There would be nine proposed crossing points of the road network to allow for movement of components during the delivery stage, as shown in Figure 5. In addition, seven other connections may be used for exiting movements of empty trucks to reduce any issues on the internal network and crossing points or for right of way vehicle access. Within Figure 5, access points or crossings are labelled for each frontage road:

- GR 01- GR04 – connections on Gibbs Road
- CR01 – CR05 – connections on Cordering Road North for project access
- CR06-CR09 – connections on Cordering Road North for transmission tower build only
- DA01-DA03 - connections on Darkan Road
- CA01-CA02 - connections on Capercup Road North
- CO01-CO02 - connections on to Coalfields Road with CO02 for emergency egress only
- SB01 (leading to BB01-BB03) - connection on Schinzig Buller Road and subsequently Beer Bottle Road.

The overall access plan for the WAWF will see the movement of larger loads and OSOM deliveries accessing the site via the main points on Cordering Road North (CR01 and CR02). For the WTG components, including the blades, there will be connections to either side of Cordering Road North which will then allow for the delivery of components to pads around the Project Area.

As part of the site, there would be a permanent Operations and Maintenance compound located off Cordering Road North which would sit alongside the BESS and sub-station being developed as part of the project (via CR04). Access information for the different components of the Project Area is set out in the following sub-sections.

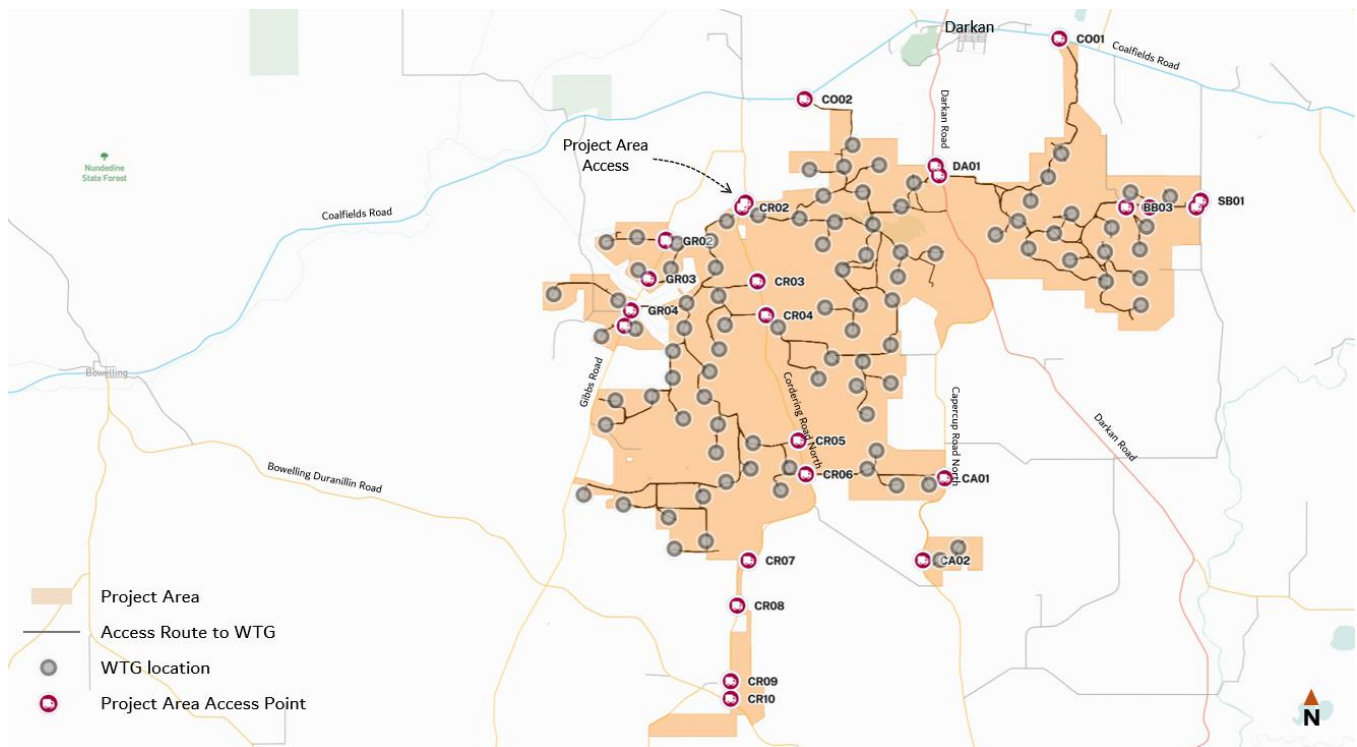


Figure 5 Project area access point and crossing locations of road network (source: Planwisely / West Arthur Energy)

3.2.1 Operation and Maintenance Facilities

The Operations and Maintenance facility for the project would be a permanent compound which would be adjacent to the BESS and substation. The compound would be located approximately 800m to the west of Cordering Road North, with a proposed access track constructed for the project (CR04), approximately 6.2km south of Coalfields Road. The location of the compound and the adjoining facilities are shown in Figure 6.

This site would also be used during the construction stage as the main compound for the project. The configuration of the site would be subject to detailed design as part of the project, including any layout of compound parking and access locations. Given the nature of the activities on the site, the compound access and layout would be based on the appropriate design vehicle being considered.

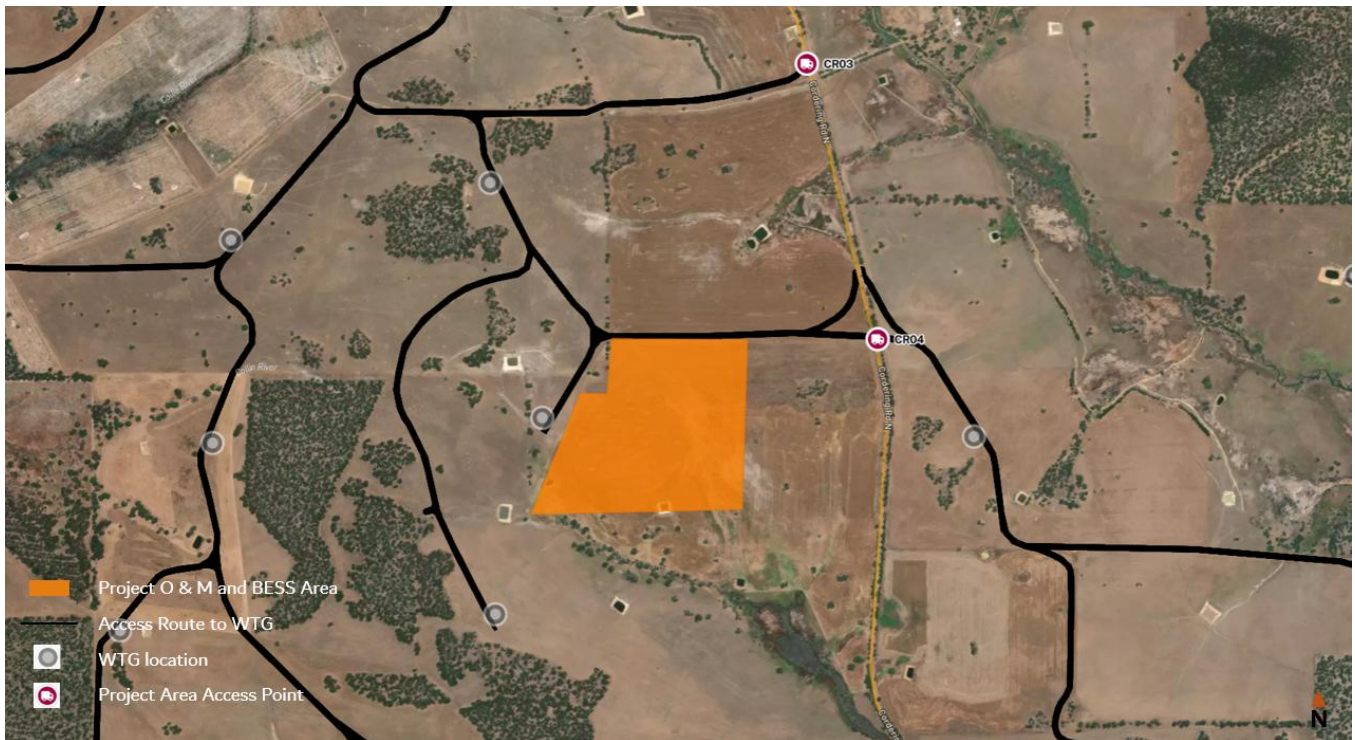


Figure 6 Location of Operations and Maintenance compound and BESS for WAWF (source: West Arthur Energy / Planwisely)

3.2.2 Internal Accommodation Compound

To cater for the construction stage of the project, a 300-bed workforce accommodation compound is proposed to be constructed. The compound would be located to the east of Cordnering Road North, less than 2km from the Operations and Maintenance Compound and BESS facility. The location of the compound, which would be accessed off the internal track that runs along the northern and eastern sides of the area via CR04, is shown in Figure 7.

The configuration of the compound would be subject to detailed design as part of the project, including any layout of compound parking and access locations. The location of the compound would mean that movements through to WTG sites would be generally through the internal track network via crossovers where necessary.

The development of an on-site accommodation compound would reduce the volume of vehicle trips experienced on the surrounding network and minimise impacts during existing peak periods during construction. Post construction, the accommodation compound would be demobilised.

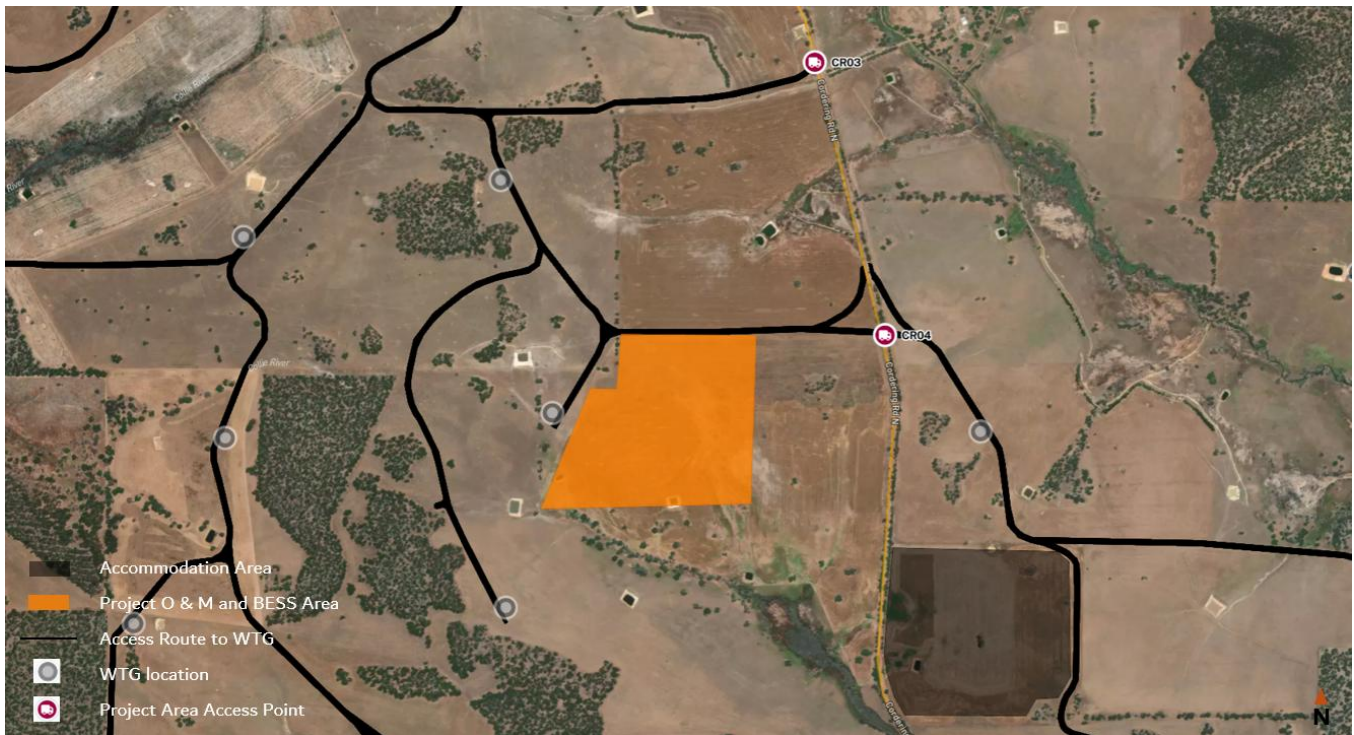


Figure 7 Location of Workforce Accommodation Compound (source: West Arthur Energy / Planwisely)

3.2.3 BESS

The project also includes a proposed 500MW/4000MWh BESS and adjacent electrical substation located next to the Operations and Maintenance Compound, as shown in Figure 6. Access to the BESS would be via the same access track off Cordering Road North which is proposed to provide access to the Operations and Maintenance Compound (CR04).

During the construction stage, most movements associated with the BESS would be through as-of-right vehicles up to the size of a semi-trailer. The only deliveries to require permits would be those associated with a transformer. This means that the majority of movements to the site could be made from Cordering Road North.

3.2.4 Construction and Operational Workforce

Traffic associated with the workforce has been estimated within this assessment, noting that the majority of the WAWF construction workforce will be housed within the accommodation compound proposed be constructed as shown in Figure 7.

A small number of workers or contractors would travel between the Project Area and towns in the region including Collie and Darkan. This may include specialist contractors who are not part of on-going construction activities.

During operations, the project will be managed by both on-site and off-site personnel, employed by, or contracted to WAWF. Traffic associated with that stage of the project is expected to be minimal and not subject to ongoing impacts.

3.2.5 Development Stages

This assessment has been based on a rolling stage of construction over an 18 month period, broadly moving from the western side of the site to the eastern side. This would also allow the development of the construction tracks to take place on an as needed basis as the project progresses.

The Operations and Maintenance Compound and adjoining components of the project would be developed alongside the initial WTG sites, including the provision of the workforce accommodation. The overall staging of the project, and the timeframes for construction commencement, would be refined by the project as required. For the purposes of this assessment, it has been assumed construction will commence in 2027. That date may not however reflect the actual project delivery program.

4. ACCESS ROUTE TO SITE

4.1 Routes

The WAWF Project Area is located to the east of the Darling Scarp and, for transport assessment purposes, is located within the Wheatbelt Region of Main Roads WA. The Project team has examined potential access to a number of port locations that may be suitable for the purposes of importing and storing all larger scale manufactured components of the proposed development. On the basis of that assessment, Bunbury Port was identified as the most appropriate and likely route for the majority of the over sized components.

For many smaller or divisible components associated with the Project, there would still be the potential for some trans-shipment through Fremantle Port, AMC (if available depending on Department of Defence usage) or Albany Port. Those movements would be as-of-right vehicles and therefore are permitted already.

Bunbury Port has recently seen wind farm components imported and transported out of it and it has been assessed for a range of other renewables projects of a similar scale to West Arthur with similar components.

4.2 Bunbury Port

Bunbury Port is located in the City of Bunbury, with the berth layout shown in Figure 8. The port has catered for a range of major industrial projects, including the recent movement of components for the Flat Rocks (Moonies Hill) Wind Farm and Kings Rocks Wind Farm into and out of the port. It is also being considered for a range of other renewables projects in the Wheatbelt and Great Southern.

For Flat Rocks, the laydown area used for the movement of those components was within the Inner Harbour area which would be adjacent to Berth 5 – or the large vacant area seen in Figure 9. The vacant laydown area adjacent to Berth 5 is around 11ha in area, with additional space available around the port.

The type of laydown configuration used for Flat Rocks at Bunbury Port can be seen in Figure 10 which is taken from the City of Bunbury Mapping site. Blades used for that project were 73.7m long, with the overall transportation task for that project using laydown from May 2023 to October 2023.

This establishes the suitability for Bunbury Port to be considered the appropriate location from which the indivisible loads will be transported.

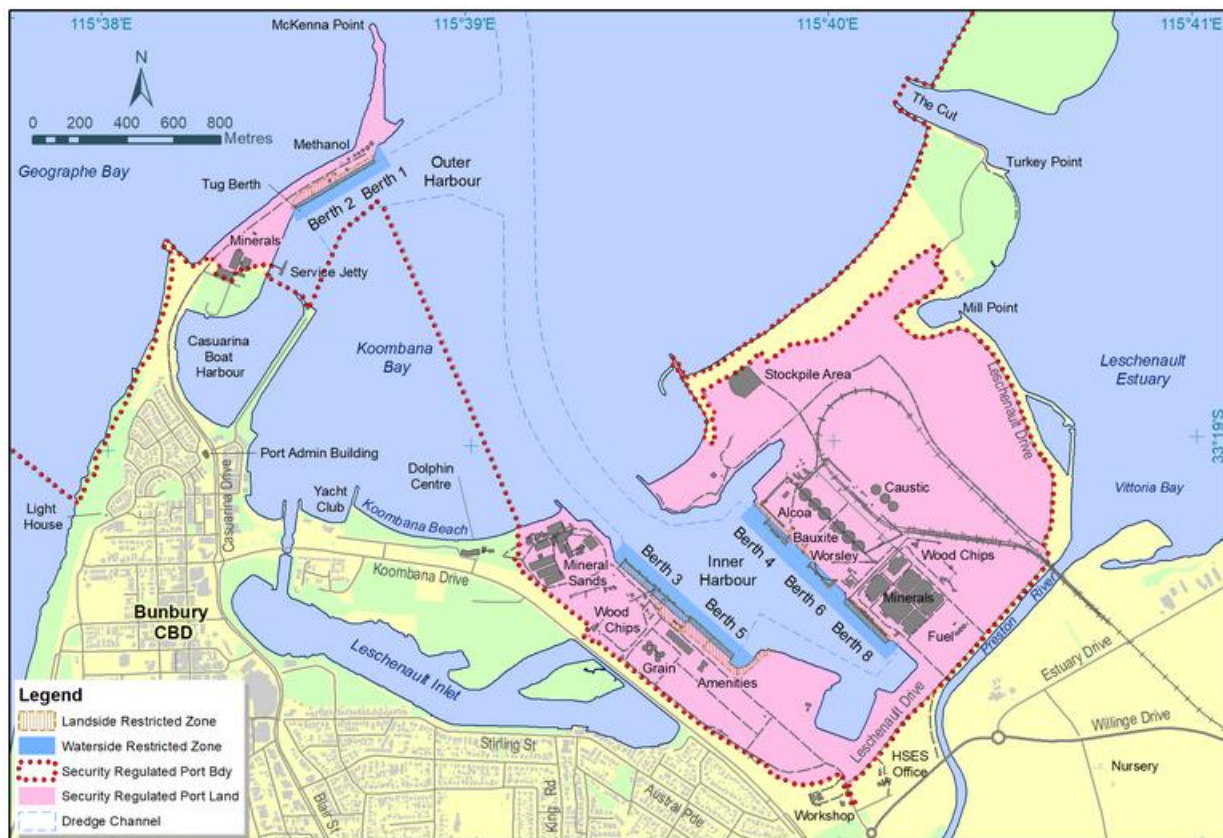


Figure 8 Bunbury Port map - Inner and Outer Harbours (source: Southern Ports Authority)

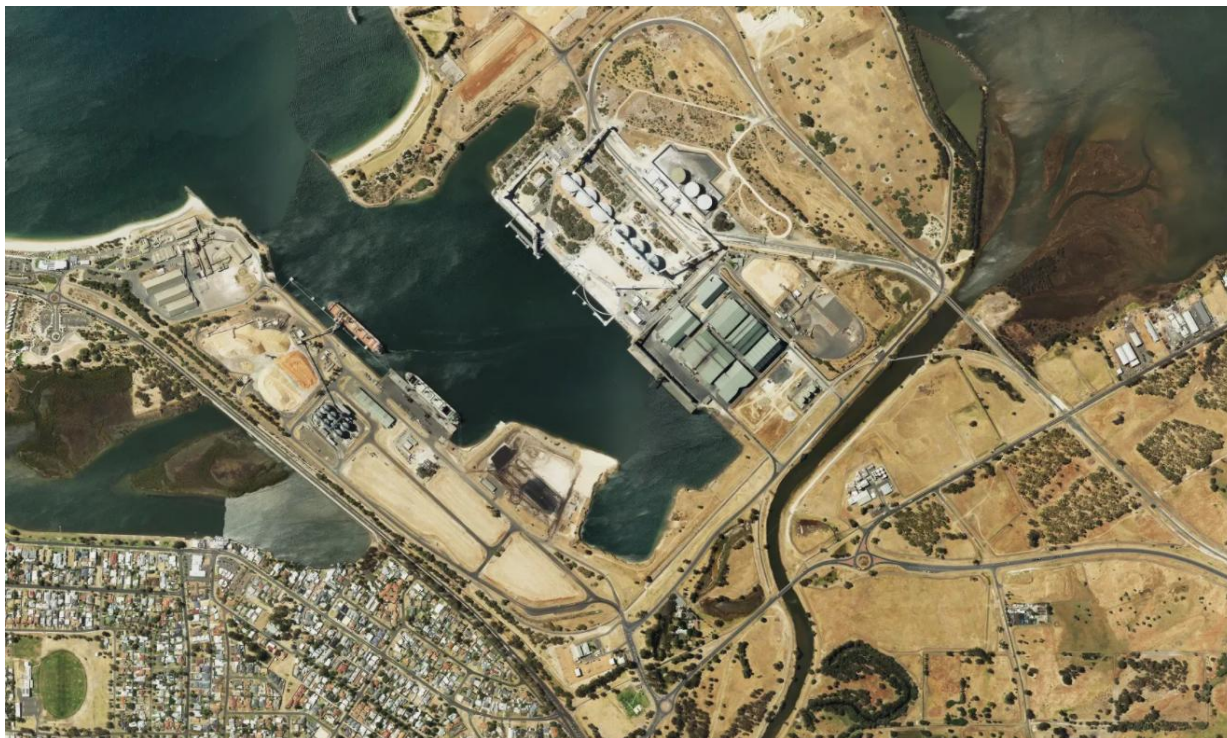


Figure 9 Bunbury Port (source Metromap)



Figure 10 Aerial image Bunbury Port August 2023 (source: City of Bunbury)

4.3 Bunbury Port to WAWF Project Area via Coalfields Road

The general alignment of the route from Bunbury Port to the site is shown in Figure 11. The route is approximately 113km from Bunbury Port to the site access point and travels along Coalfields Road, passing through the town of Collie, before turning right into Cordering Road North (access CR01).

The route through to Collie was used previously for the transportation of blades and components to the Flat Rocks Wind Farm project in early 2023 – therefore this corridor is a known quantity in terms of the loads it can transport and has previously been approved by Main Roads WA.

Assessments have indicated that there were two separate routes out of Bunbury Port to connect with Coalfields Road. These are:

- Route 1: Via Leschenault Drive, Estuary Drive, Koombana Drive, Eelup Rotary, Robertson Drive, South Western Highway and then a diversion along Wilman Wadandi to provide for swept path of turbine blades or larger indivisible components that would not clear under the new under bridge structure
- Route 2 Via Leschenault Drive, Estuary Drive, Koombana Drive, Eelup Rotary, Forrest Highway, Raymond Road over the Wilman Wadandi alignment and South Western Highway.

From the Coalfields Road intersection, this route passes through the Shires of Harvey, Collie and then West Arthur.

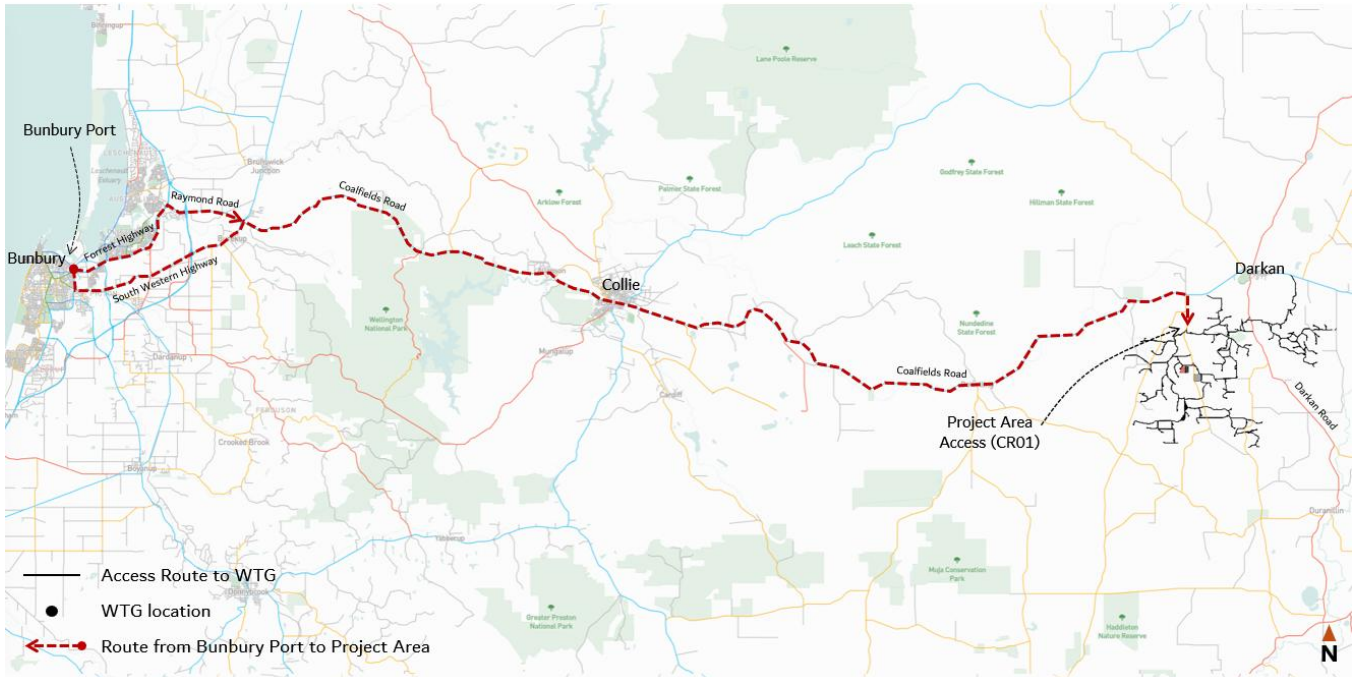


Figure 11 Indicative transport corridor – Bunbury Port to WAWF via Coalfields Rd (source: Planwisely)

4.3.1 Route One

For the first route out of the Port, designed to cater for vehicles that are under 5.2m in height, the vehicles turn out of the Port area onto Estuary Drive via a roundabout with mountable kerbs that are designed specifically for heavy vehicle movements.

OSOM loads would move under management on the inside curve of the roundabout, as shown in Figure 12 and the Main Roads WA traffic management plan for OSOM shown in Figure 13. The route would then turn left at the intersection of Koombana Drive.

Koombana Drive is a dual carriageway with two lanes in each direction which widens to three lanes at the Eelup Rotary, as shown in Figure 14. The route then passes through the rotary and heads south along Robertson Drive, which has a pavement width of 10m including shoulders through to South Western Highway. This route takes a left turn at South Western Highway shown in Figure 15.



Figure 12 Route out of Bunbury Port (source Metromap)

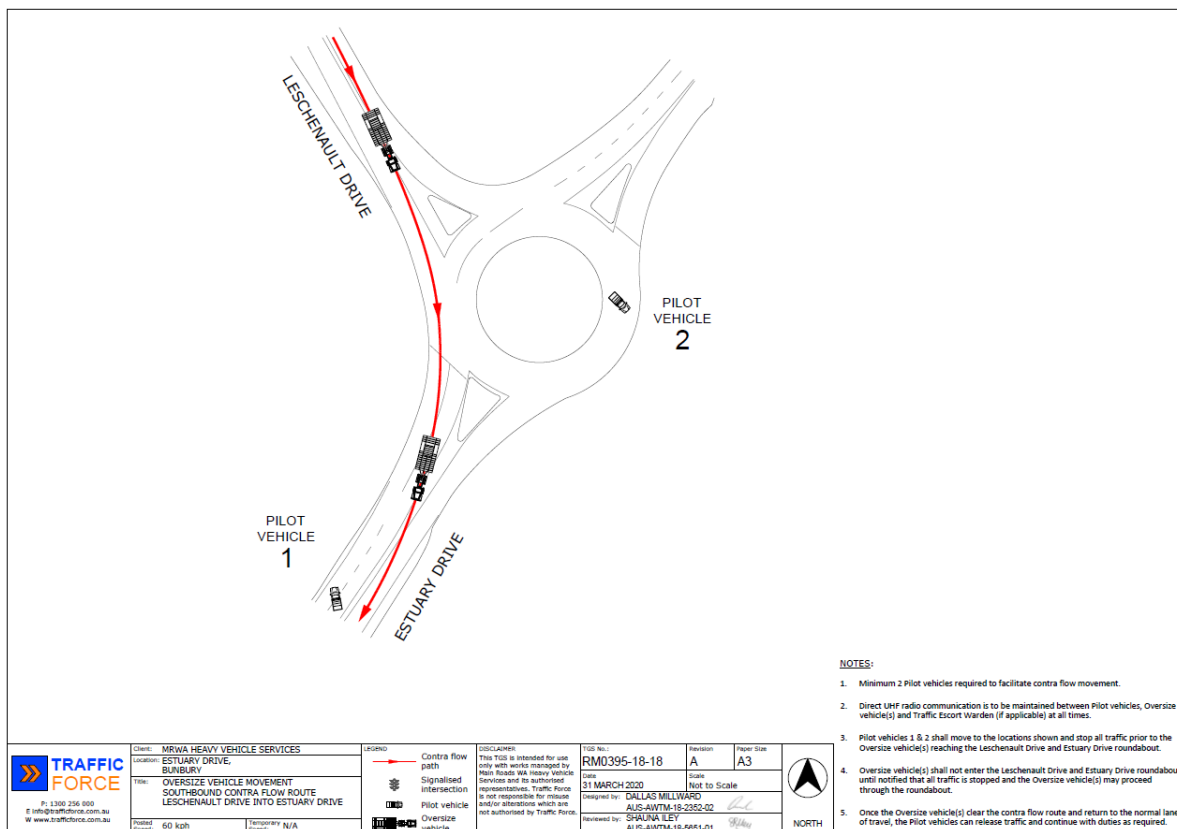


Figure 13 Traffic Management Plan - intersection of Estuary Drive and Leschenault Drive (source: Main Roads WA)



Figure 14 Route through Eelup Rotary south to Robertson Drive (source Metromap)



Figure 15 Left turn from Robertson Drive to South Western Highway (source Metromap)

The route would progress along South Western Highway to the new roundabout intersection at Vittoria Road as shown in Figure 16. This intersection has been designed to accommodate RAV7 vehicles and wider loads with mountable interior kerbs on the roundabout and clearances around the intersection for through movements.

The westbound carriageway could also be feasibly used as a contraflow for larger loads given the nature of the radius of the roundabout. Further along South Western Highway, this route would intersect Wilman Wadandi with the new under bridge structure that is now in place resulting in height and some through movement restrictions. The image shown in Figure 17, shows the diversion route required for any high and wide loads that cannot pass under the underbridge at South Western Highway.

The Wilman Wadandi corridor has been designed to include a median break which allows larger loads to be taken through the corridor and back up the off-ramp for South Western Highway under traffic management.

At the intersection of South Western Highway with Coalfields Road (shown in Figure 18), there may be the potential for a contraflow movement to be utilised depending on the form of transport vehicle configuration used. This location has added complexity with the location of the rail line located immediately to the east of the intersection of South Western Highway and Coalfields Road.

Regular movements, or those not requiring the use of the contraflow arrangements, would be able to undertake the turn using the existing turning pockets and intersection lanes, as shown in Figure 19. The turning movements would also require management of the existing level crossing point which includes boom gates on both approaches.

The stacking distance from the level crossing stop line ranges from 36m to 40m depending on whether or not the regular or contraflow turns are used. Turbine blade movements would have to be completed in one movement across the intersection and rail line.



Figure 16 Route along South Western Highway through intersection at Vittoria Road (source: Metromap)



Figure 17 Route along South Western Highway through Wilman Wadandi interchange (source: Metromap)



Figure 18 Potential contraflow for turning movements at Coalfields Rd (source: Metromap)



Figure 19 Turning movements at Coalfields Rd (source: Metromap)

The route then progresses along Coalfields Road until it reaches the Collie townsite. The route passes through the Collie townsite and heads east towards the right hand turn at Cordering Road North and towards the sight access (shown as CR01 in Figure 20).

This turn is an existing widened intersection with Gibbs Siding Road to the north which is a staggered four way intersection. This intersection includes turning pockets in both directions for Cordering Road North and widened turning areas on approach with a carriageway width of over 15m and cleared corridor of over 25m.

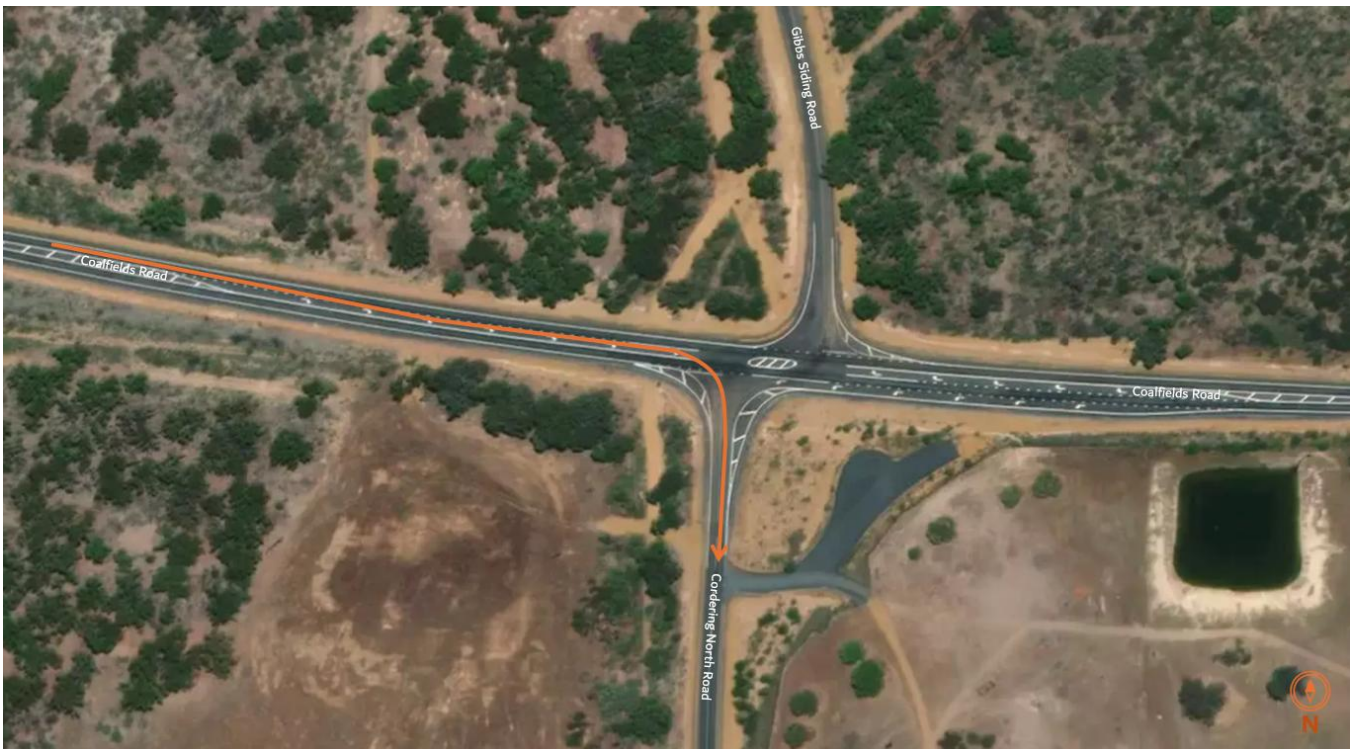


Figure 20 Right hand turn from Coalfields Rd to Cordering Road North (source: Metromap)

4.3.2 Route Two

The alternate route from Bunbury Port follows a similar path to the Eelup Rotary from Bunbury Port but then turns left at the Eelup Rotary along Forrest Highway, as shown in Figure 21.

This route then extends along the Forrest Highway, which is a dual lane, dual carriageway State Road, to the intersection of Raymond Road as seen in Figure 22. This route also passes over Wilman Wadandi (shown in Figure 23) but it is an over bridge, meaning there are no height restrictions in place for turbine blade movements or larger components such as transformers.

The route then extends along Raymond Road through to the intersection of Coalfields Road. Based on the existing Traffic Management Plans that have been developed by Main Roads WA Heavy Vehicle Services (as shown in Figure 25), some loads may be required to travel contraflow along South Western Highway through to

the intersection of Coalfields Road and then across the existing level crossing. This route then extends along Coalfields Road towards Cordering Road North as already discussed.



Figure 21 Left turn at Eelup Rotary to Forrest Highway (source: Metromap)



Figure 22 Right turn at Raymond Road from Forrest Highway (source: Metromap)



Figure 23 Route over interchange at Raymond Road and Wilman Wadandi (source: Metromap)



Figure 24 Route via intersection of South Western Highway (source: Metromap)

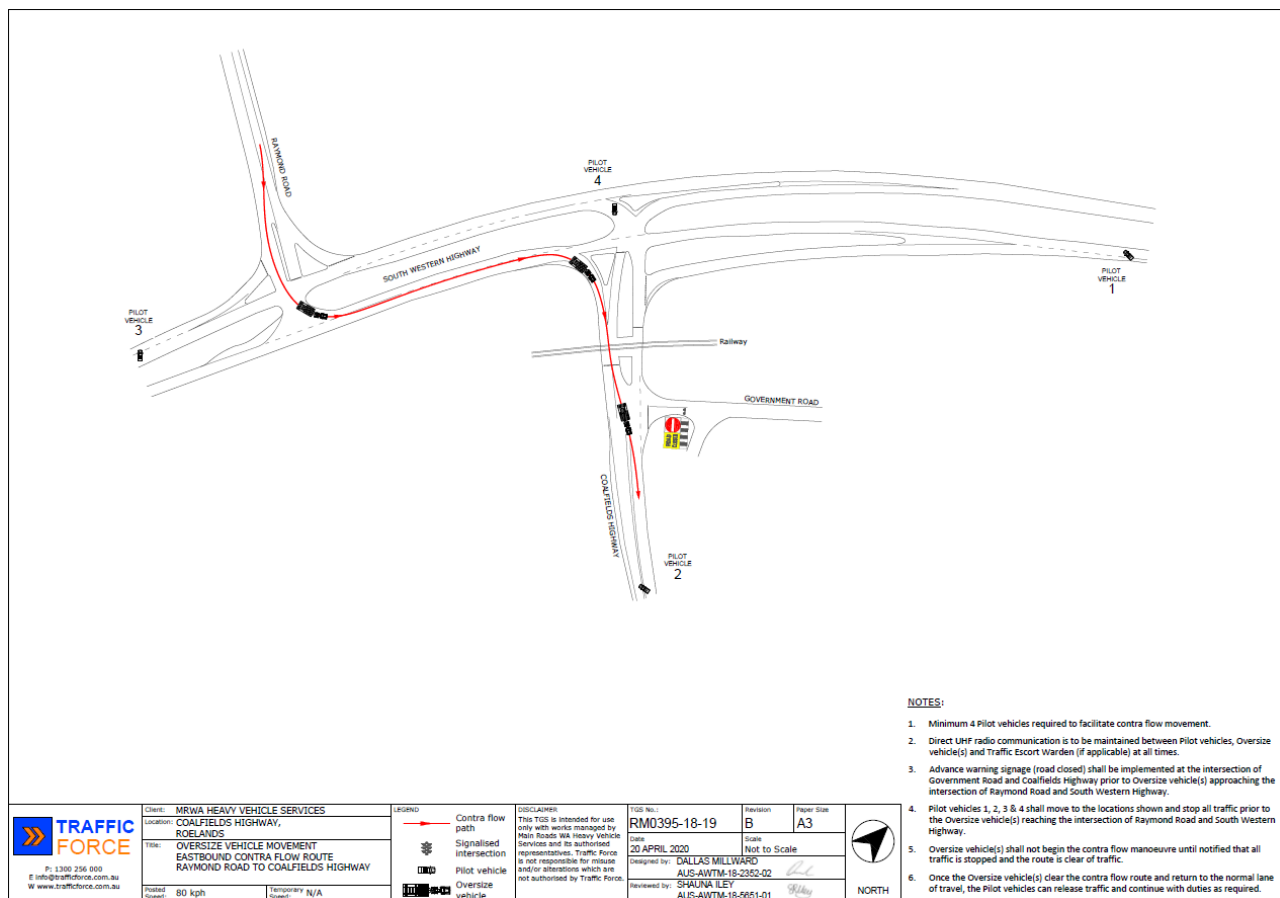


Figure 25 Oversize vehicle movement contraflow - Raymond Road to Coalfields Road (source: Main Roads WA)

4.3.3 Management of Roads

With the exceptions of the immediate egress route from Bunbury Port and some of the final connections into the Project Area via Cordering Road North or alternative Project Area access points, the entire route examined is managed and controlled by Main Roads WA.

All major highways and roads, including Forrest Highway, South Western Highway, Wilman Wadandi Raymond Road and Coalfields Road are managed by Main Roads WA. This means that the authority over use and works within the road reserves are under the statutory power of Main Roads WA under the Main Roads WA Act 1930.

The final connections into the Project Area would be under the management and control of the Shire of West Arthur. Those access points and arrangements would then fall under the statutory control of both Main Roads WA and the respective local government authority, with crossover requirements being required by Main Roads WA.

4.3.4 Rail Crossings

There are three crossings of rail infrastructure for this route:

- Leschenault Drive near Bunbury Port - Flashing lights - two traffic lanes (one each direction) and one rail line – this is disused and within the Port Authority area
- South Western Highway - Flashing lights - two traffic lanes (one each direction) and one rail line (shown in Figure 26)
- Coalfields Road to the east of South Western Highway - Flashing lights - two traffic lanes (one each direction) and one rail line (shown in Figure 27).

The rail crossing at Coalfields Road is a specific issue that needs to be addressed in TMP associated with the transport operation task of the project, with involvement of the operator of the network – ARC Infrastructure as well as the PTA which is responsible for the Australind train. The other crossings are either on open sections of highway or within the Port area and not considered an issue for through movements outside of timings for crossings.



Figure 26 South Western Highway rail crossing (source: Google)



Figure 27 Coalfields Road rail crossing near South Western Highway (source: Google)

Separately there is a disused rail corridor along the Bowelling-Duranillin Road corridor that will not be impacted by the project.

4.4 Swept Path Analysis

Swept path analysis was undertaken for the Bunbury Port route via Coalfields Road using the 91m blade which would cover the longest tower section and allow for an assessment of the greatest impacts on the network. The indicative configuration of the vehicle used for the purposes of this analysis are shown in Figure 28.

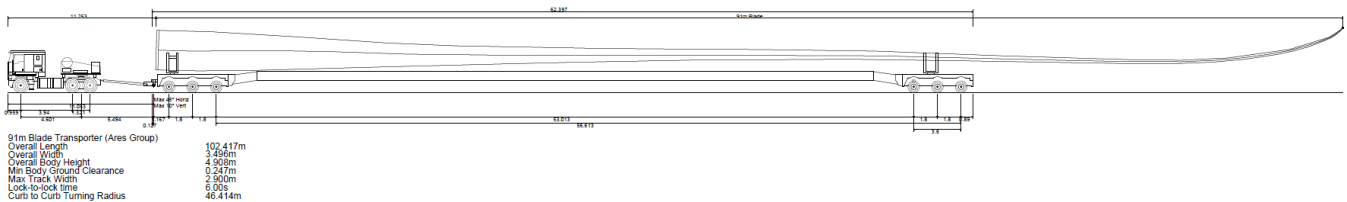


Figure 28 Configuration of 91m long blade truck used for swept path analysis (source: Access Traffic)

4.4.1 Swept Paths – Forrest Highway Route

Swept paths for the 91m turbine blade were completed for the following locations to inform the planning process.

- Port Egress to Estuary Drive
- Estuary Drive to Koombana Drive
- Koombana Drive to Forrest Highway
- Forrest Highway to Raymond Road
- Raymond Road and Wilman Wadandi
- Raymond Road and Coalfields Road
- Former rail crossing at Collie
- Coalfields Road into Cordering Road North
- Cordering Road North alignment, including sweeps into the proposed access points for the Project Area.

These sweeps are set out in Figure 29 to Figure 40.

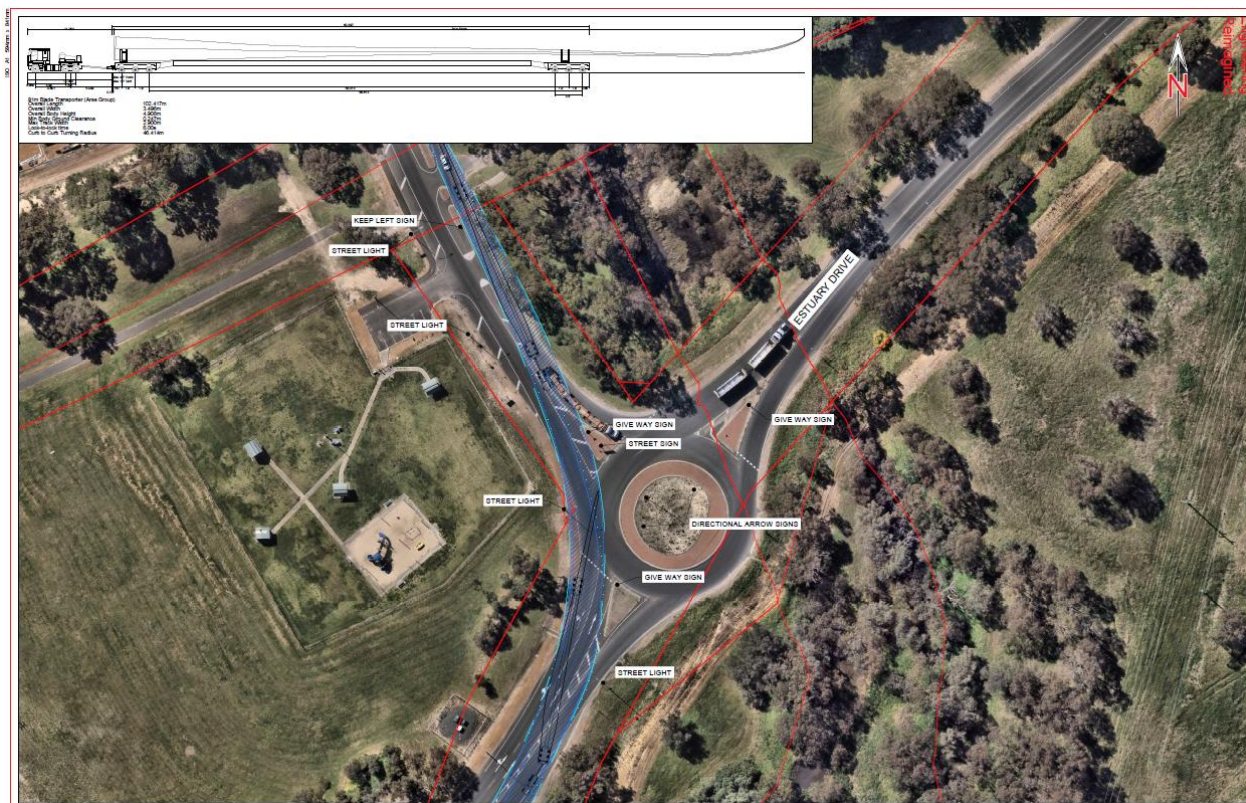


Figure 29 91m WTG blade swept path - Port Egress to Estuary Drive (source: Access Traffic)

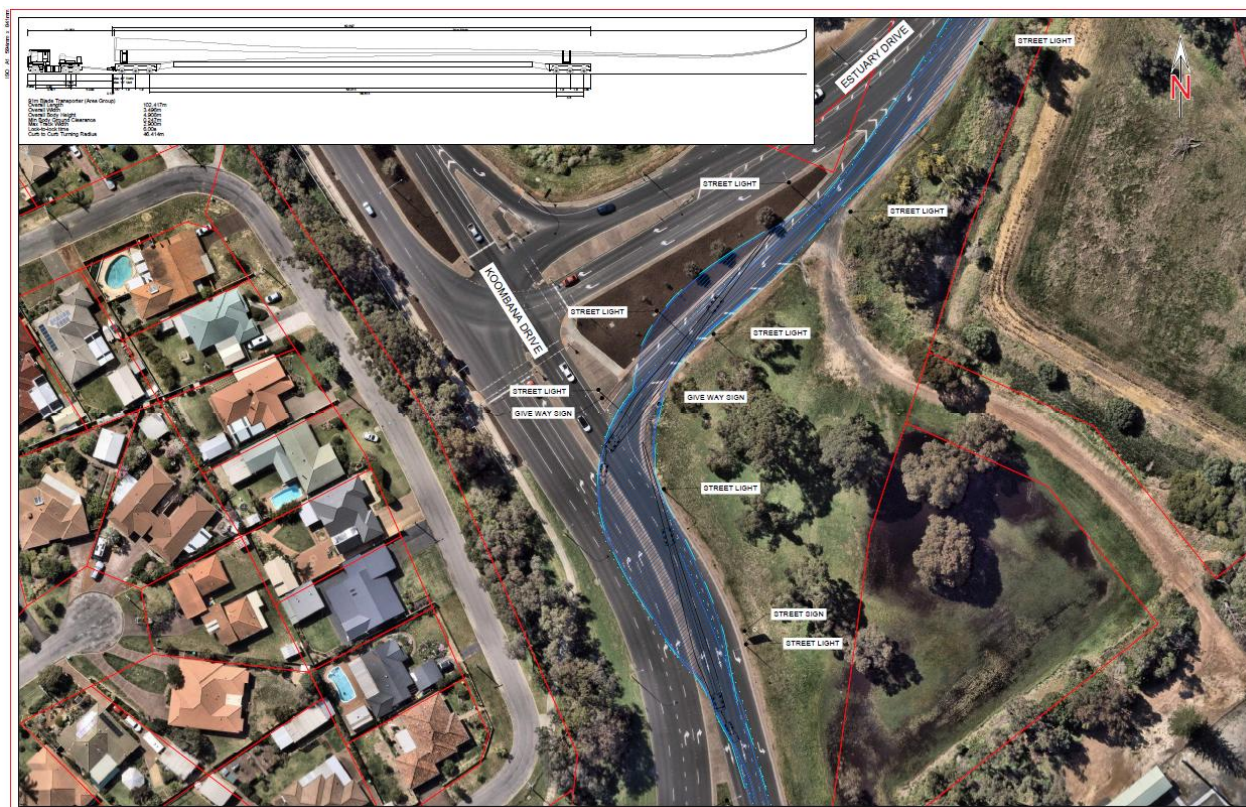


Figure 30 91m WTG blade swept path - Estuary Drive to Koombana Drive (source: Access Traffic)

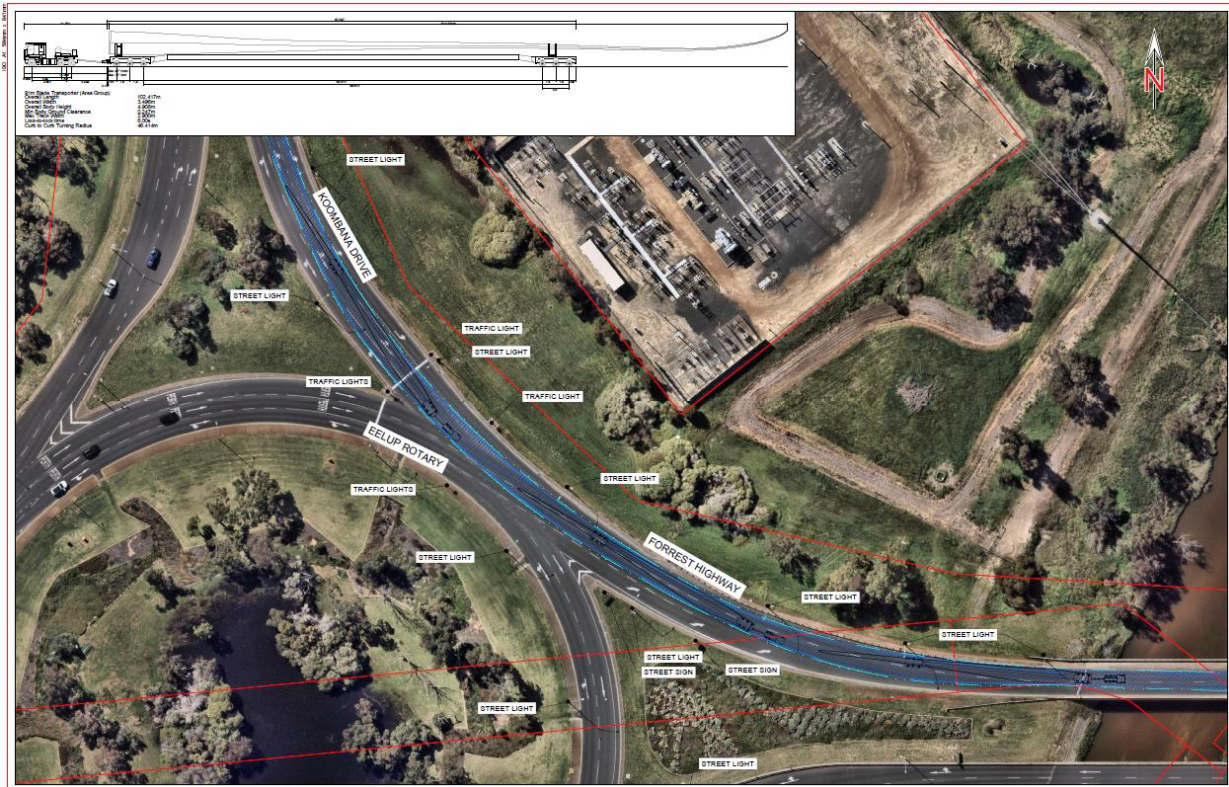


Figure 31 91m WTG blade swept path - Koomana Drive to Forrest Highway (source: Access Traffic)

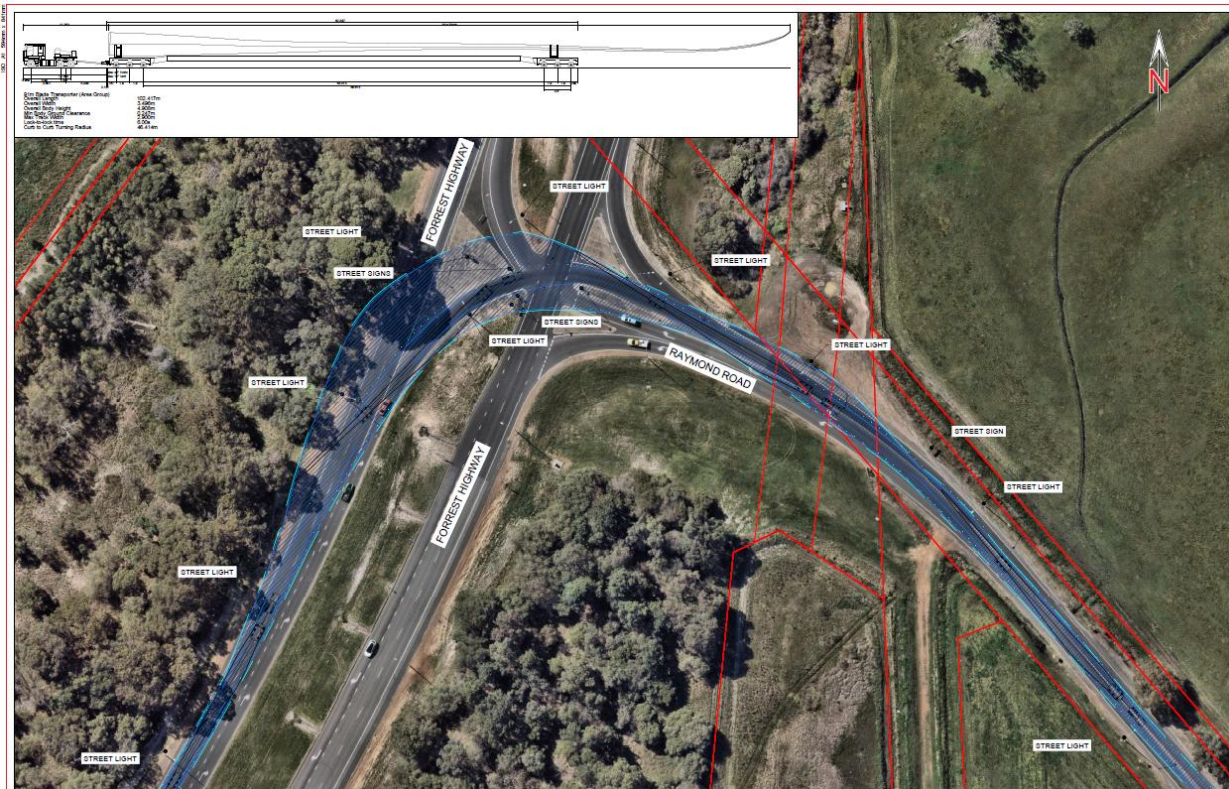


Figure 32 91m WTG blade swept path - Forrest Highway to Raymond Road (source: Access Traffic)

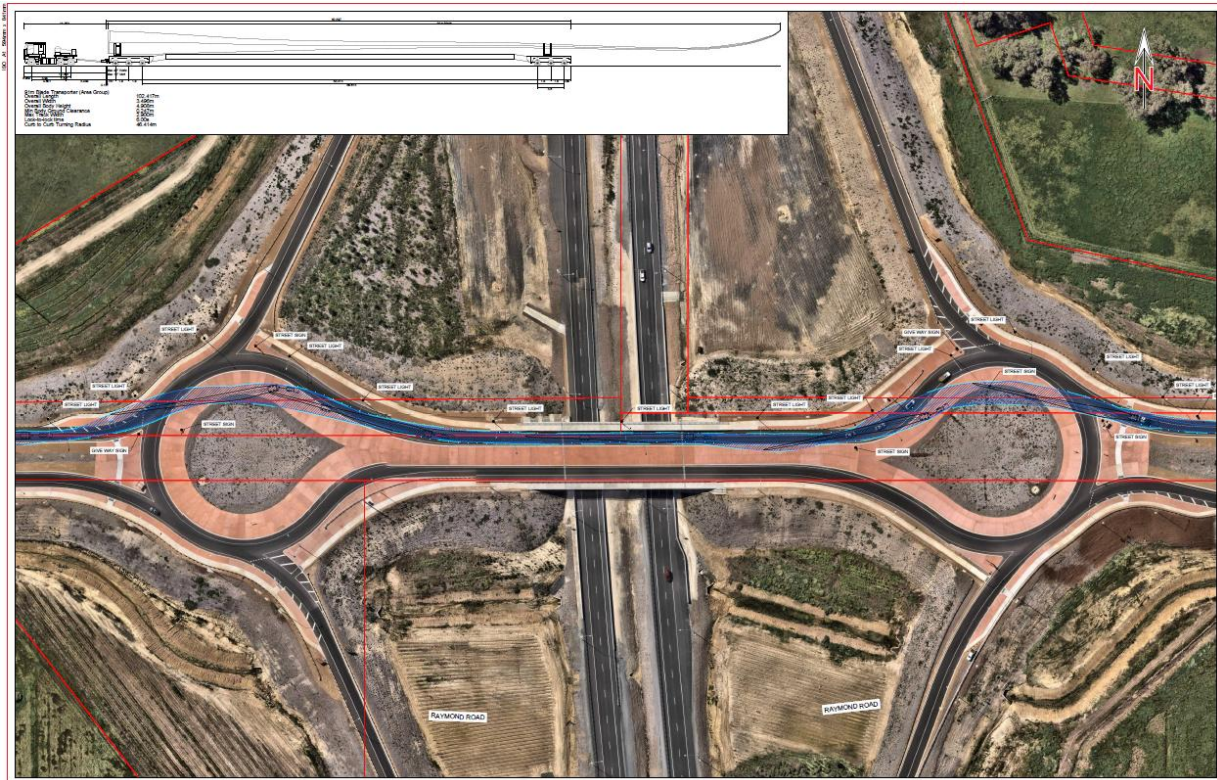


Figure 33 91m WTG blade swept path - Raymond Road and Wilman Wadandi (source: Access Traffic)

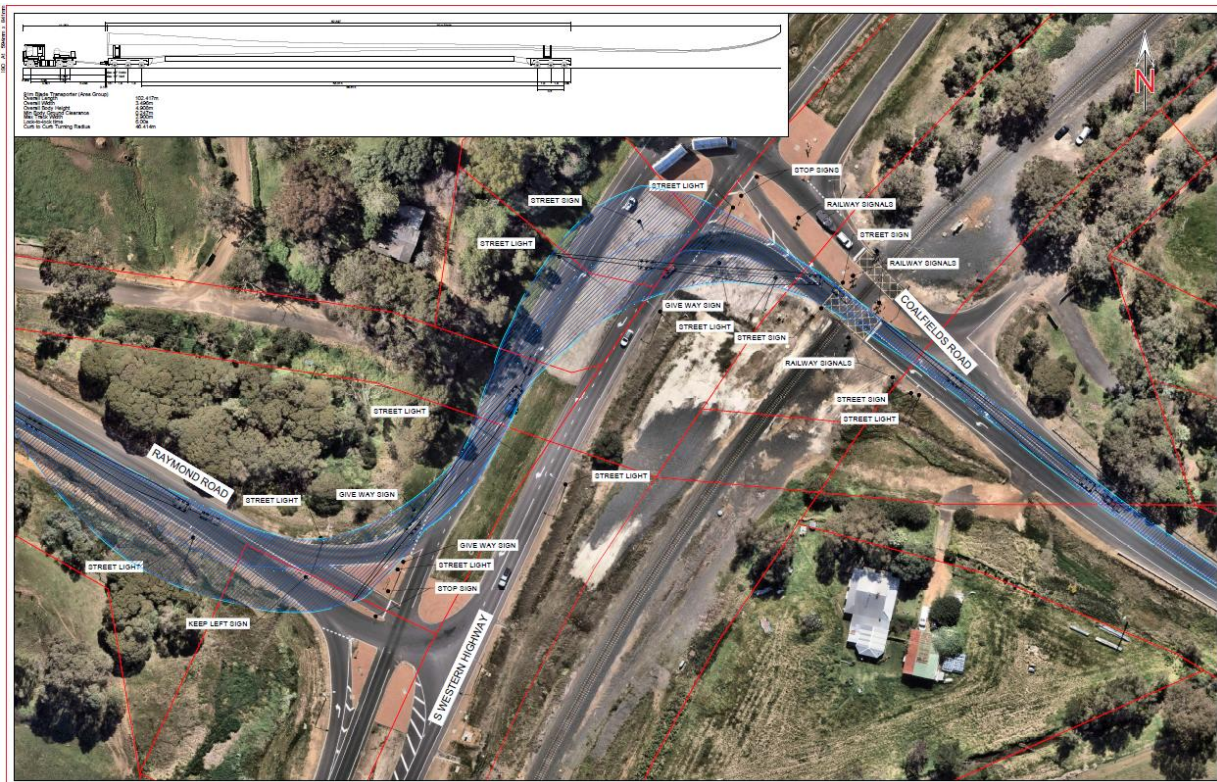


Figure 34 91m WTG blade swept path - Raymond Road and Coalfields Road (source: Access Traffic)

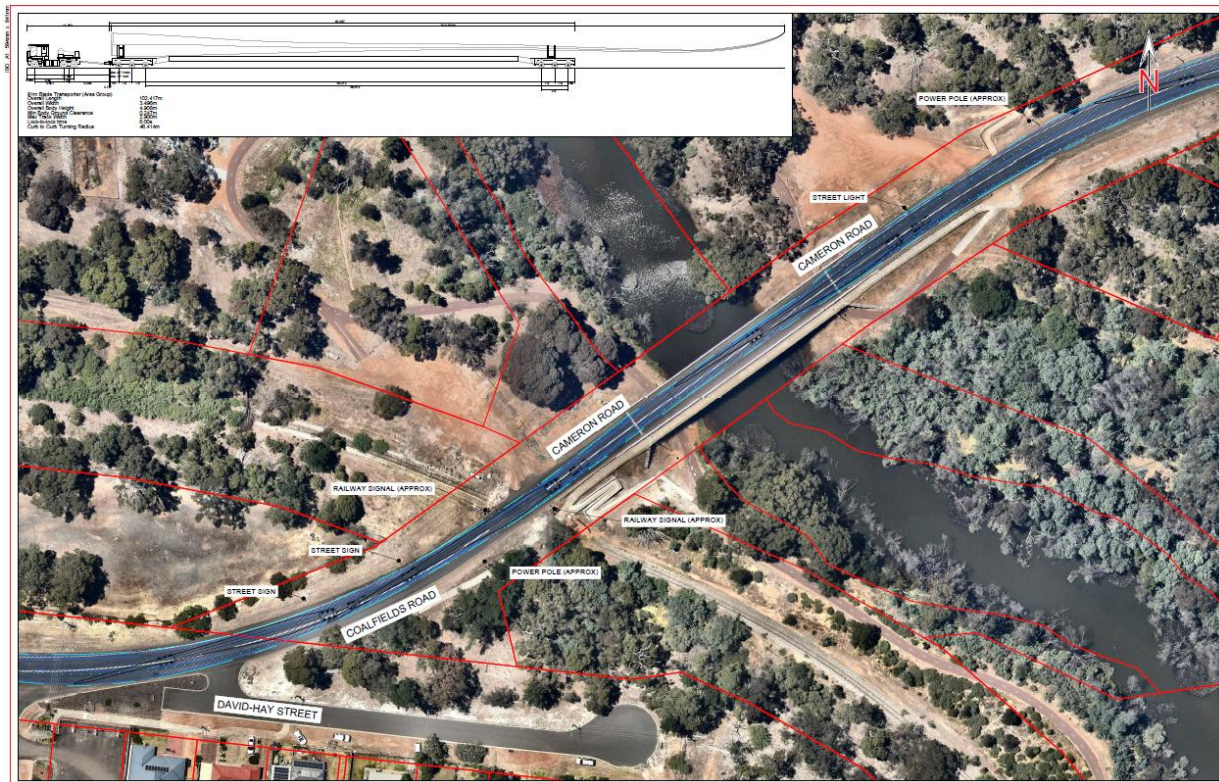


Figure 35 91m WTG blade swept path – Coalfields Road over Collie River (source: Access Traffic)

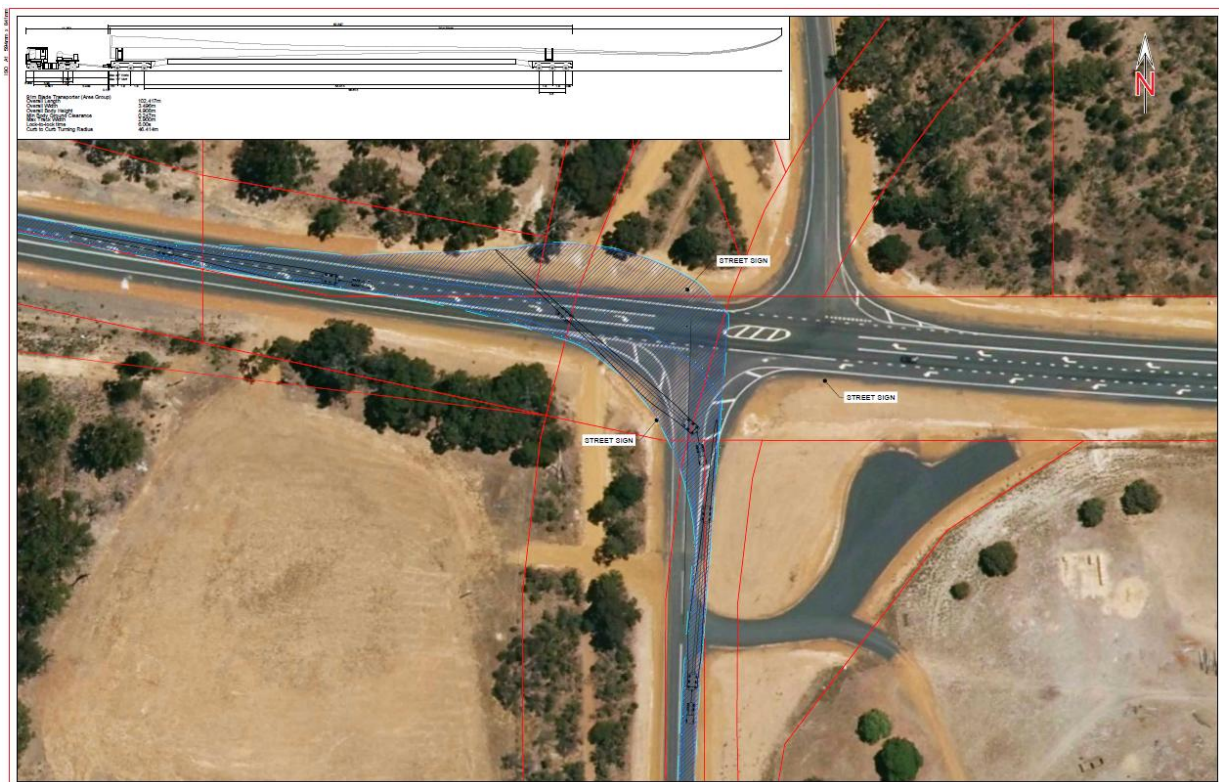


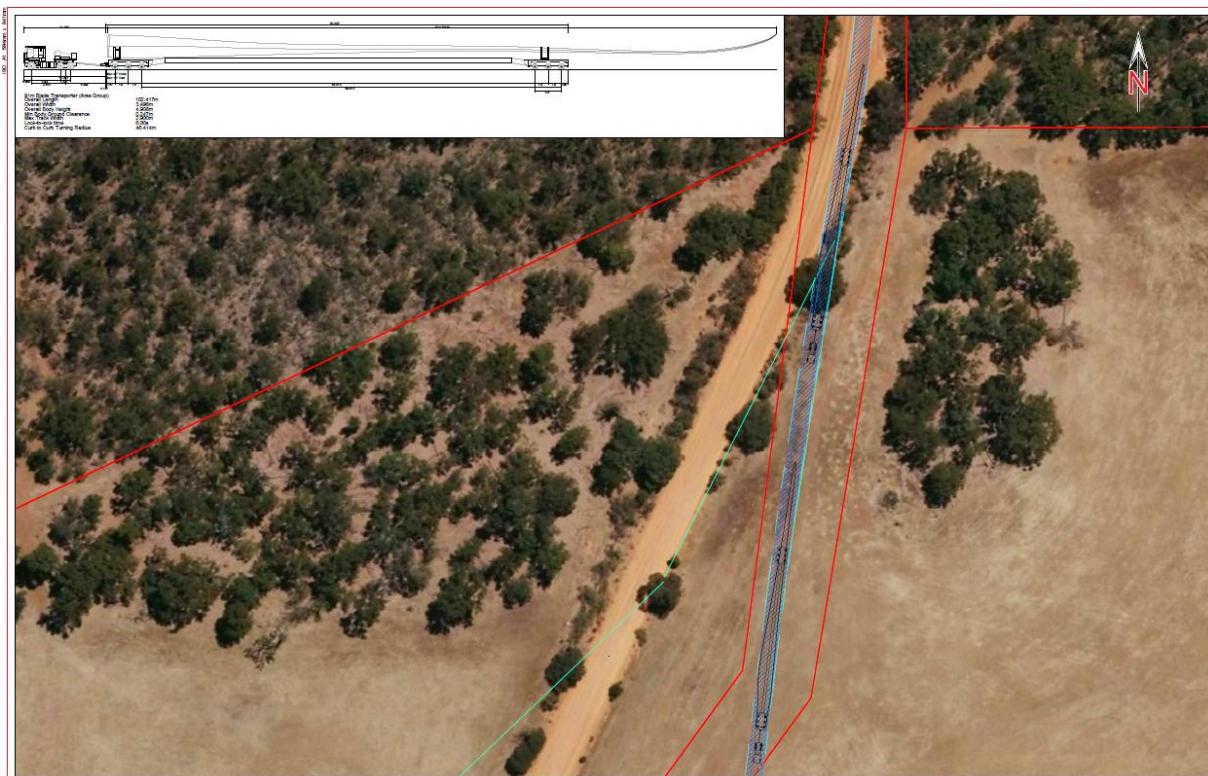
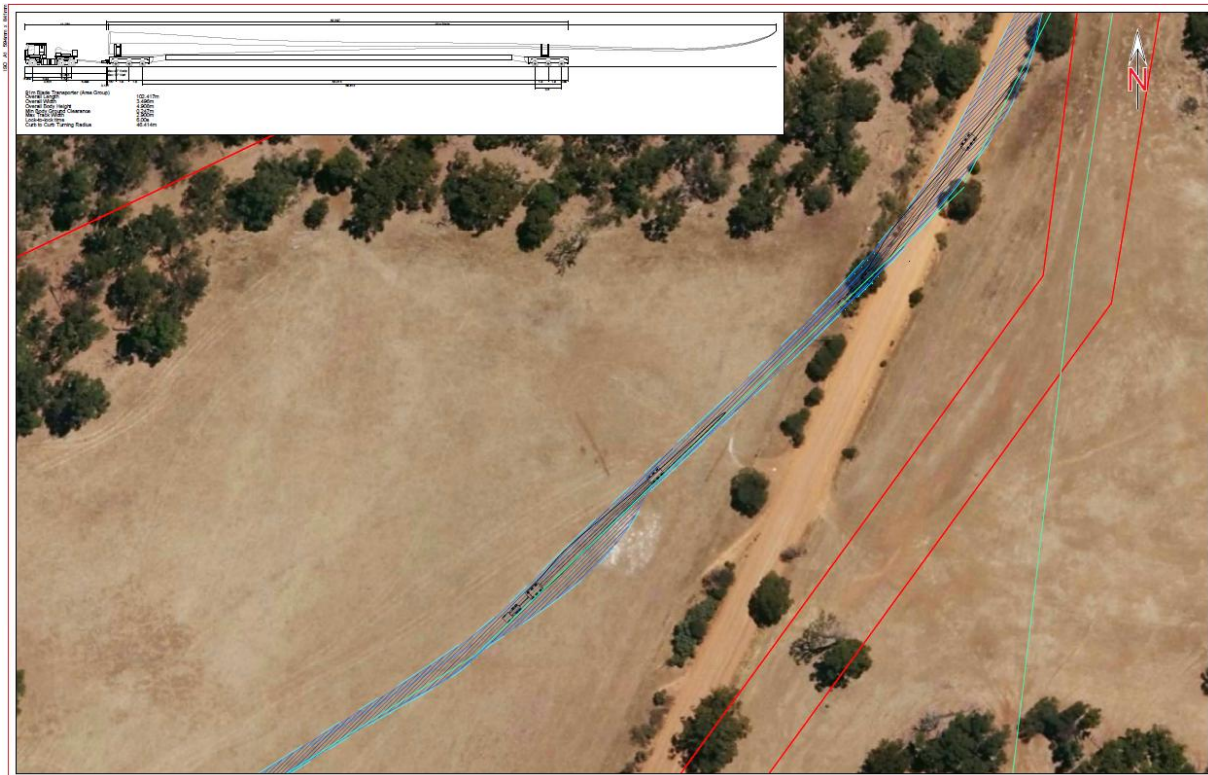
Figure 36 91m WTG blade swept path - Coalfields Road into Cordering Road North (source: Access Traffic)



Figure 37 91m WTG blade swept path - Cordering Road North to north of Gibbs Road (source: Access Traffic)



Figure 38 91m WTG blade swept path - Cordering Road North to south of Gibbs Road (source: Access Traffic)



4.4.2 Swept Paths – South Western Highway Route

In addition to the initial sweeps out of Bunbury Port and those at the Project Area access points, swept paths for the 91m turbine blade were completed for the following locations along the South Western Highway route to inform the planning process.

- Koombana Drive to Robertson Drive
- Robertson Drive to South Western Highway
- South Western Highway and Vittoria Road
- South Western Highway and Wilman Wadandi
- South Western Highway and Coalfields Road.

These sweeps are set out in Figure 41 to Figure 45.

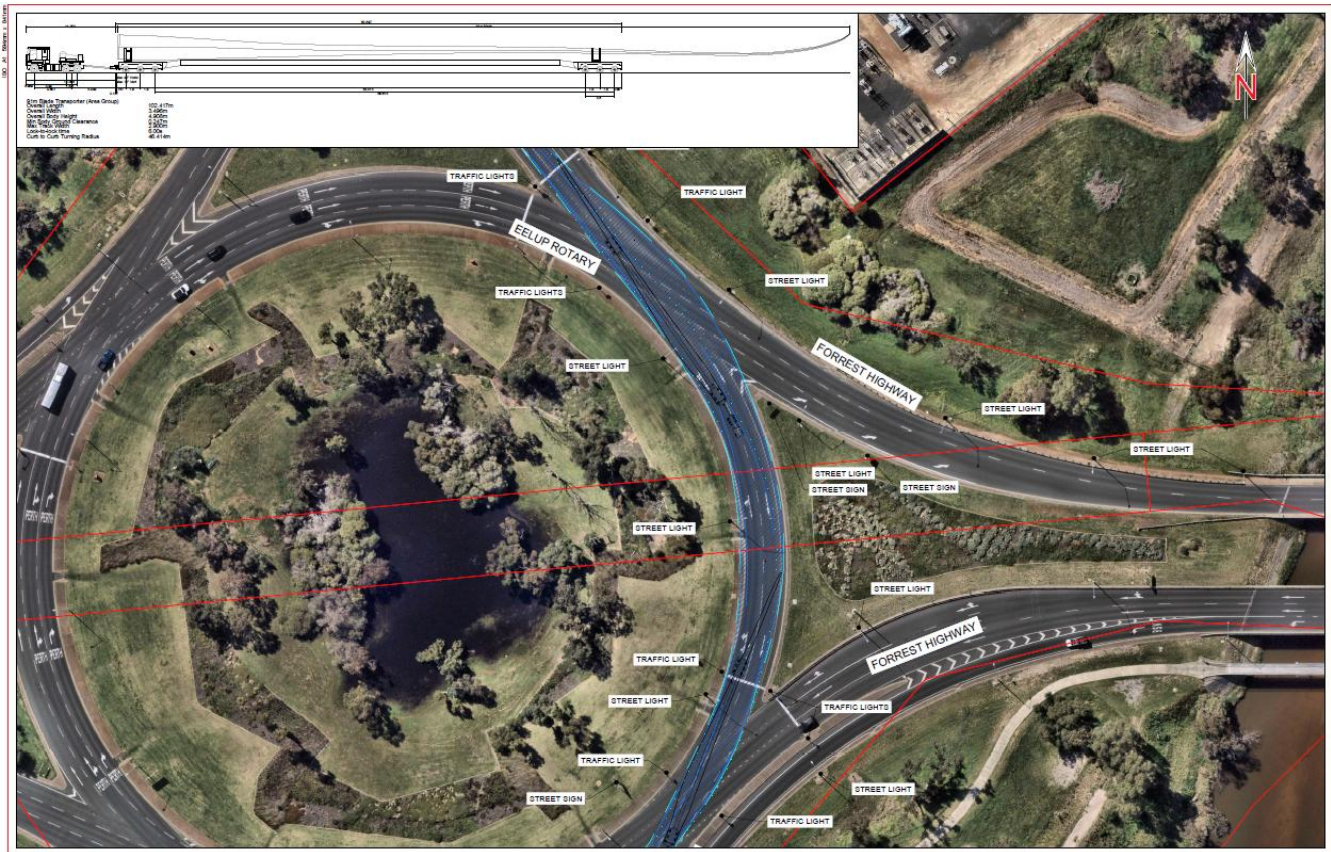


Figure 41 91m WTG blade swept path – Koombana Drive to Robertson Drive (source: Access Traffic)

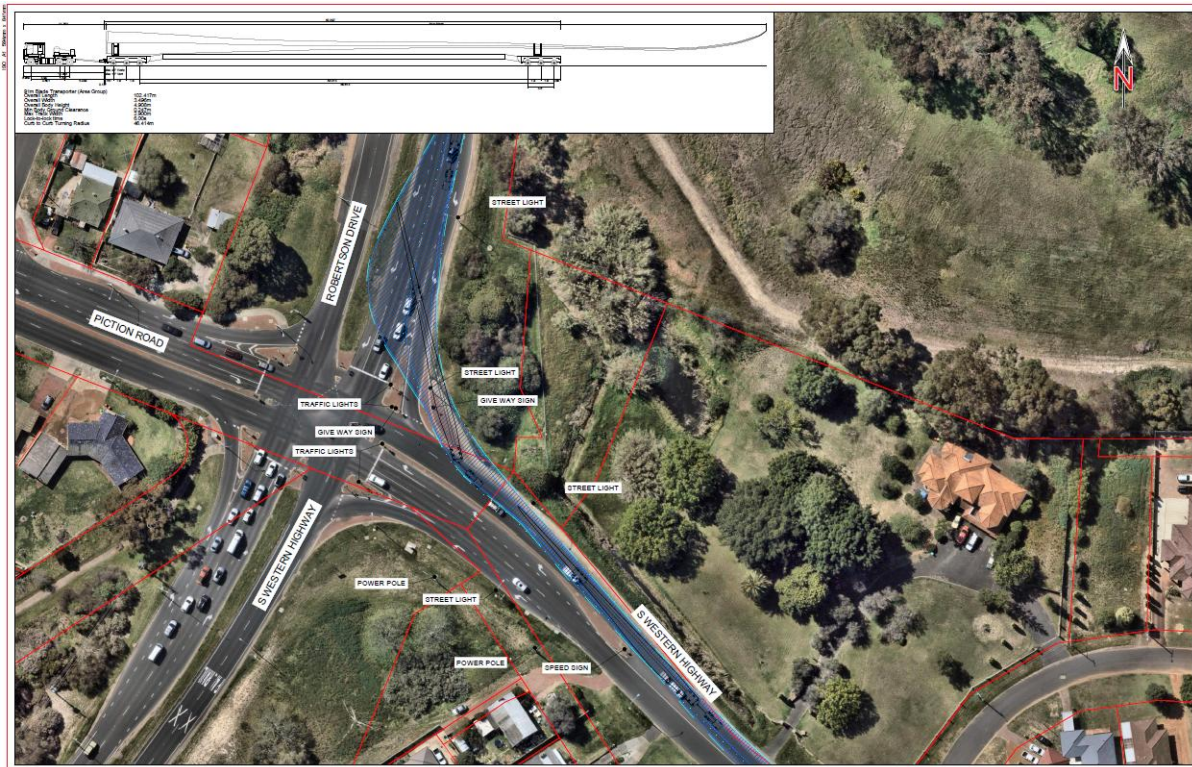


Figure 42 91m WTG blade swept path – Robertson Drive to South Western Highway (source: Access Traffic)

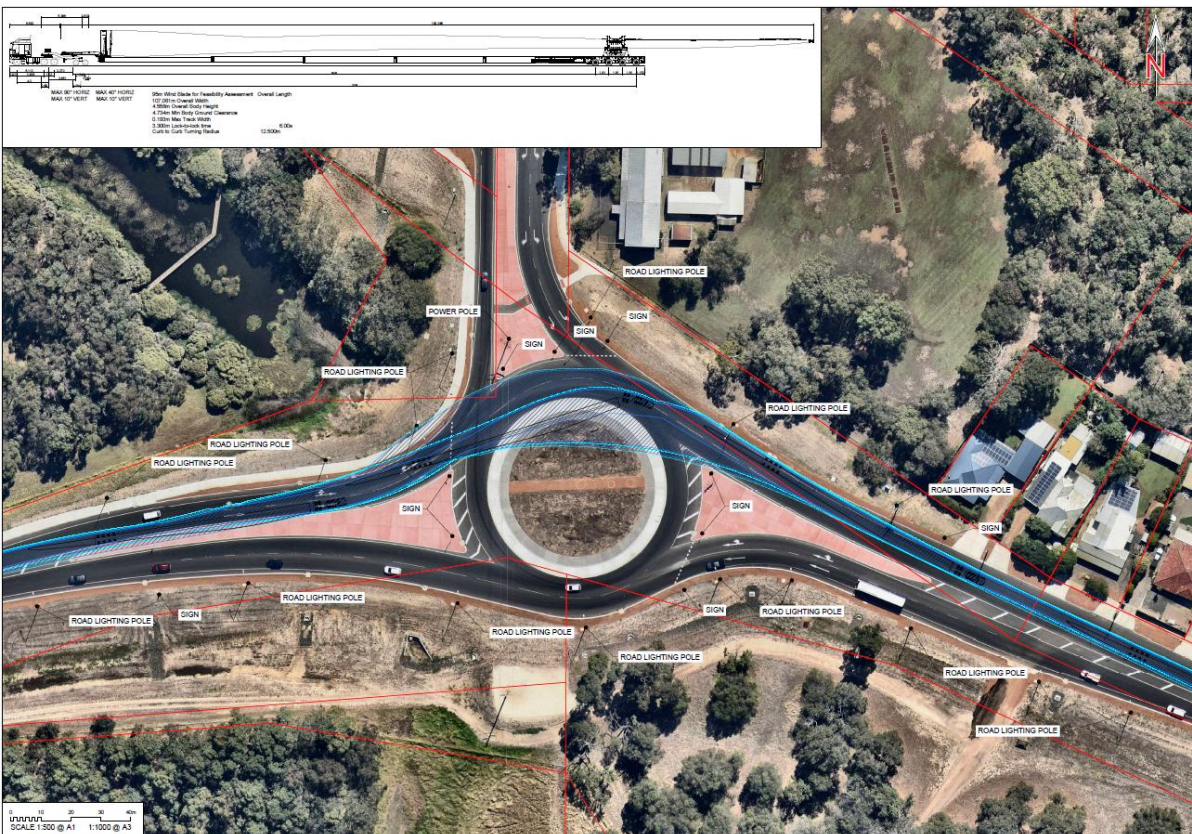


Figure 43 91m WTG blade swept path – South Western Highway and Vittoria Road (source: Access Traffic)

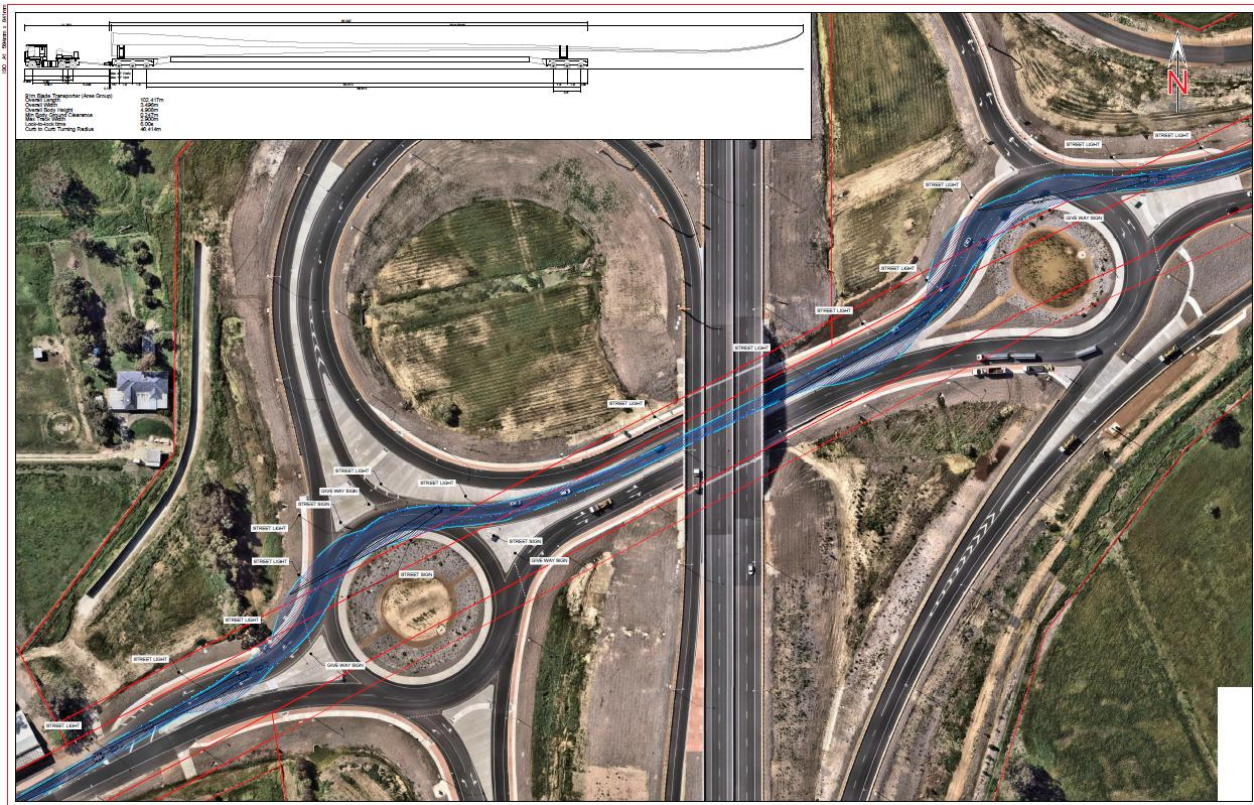


Figure 44 91m WTG blade swept path –South Western Highway and Wilman Wadandi (source: Access Traffic)

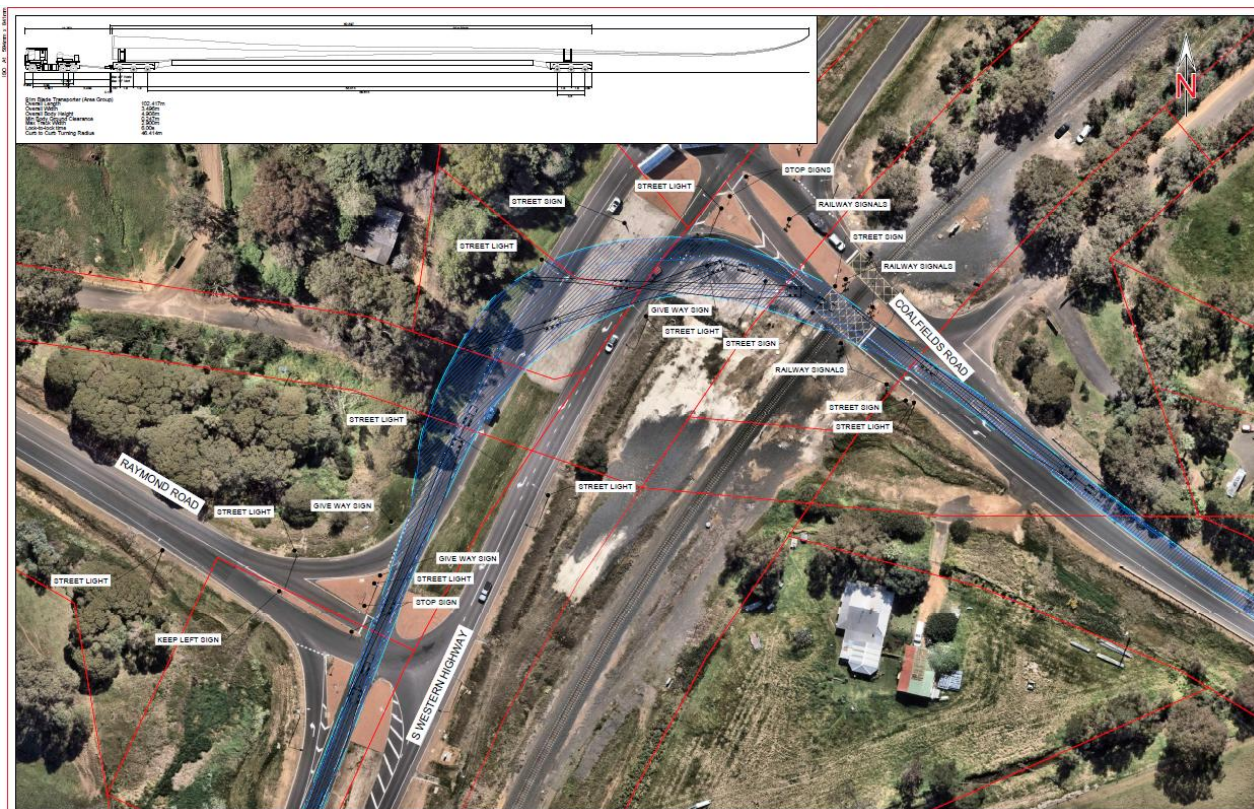


Figure 45 91m WTG blade swept path –South Western Highway and Coalfields Road (source: Access Traffic)

More defined and detailed swept path analysis would be progressed with the TMP required for the transportation of larger loads from Bunbury Port to the Project Area. For the purposes of this TIA, there were a number of issues which are summarised as:

- The intersection of Coalfields Road and South Western Highway. Due to the unique challenges in this area, being staggered turns at angle, the location of the rail crossing adjacent to the highway and configuration of the carriageways, the movement of the blades through this area is challenging. The mitigation measure proposed would be to have all turbine blades using the Forrest Highway and Raymond Road. The South-Western Highway route would require traffic management of Wilman Wadandi to execute a U-turn on the main through route between Perth and the South-West which is not insurmountable however it adds a layer of impacts and management to be considered in the TMP
- Impact of structures along routes would include visual recording permits for any impacted structures through permits issued by Main Roads WA Heavy Vehicle Services
- Need for staging when transporting loads from port – specifically blade components. This would need to be addressed in the TMP
- There are some potential tree trimmings, signage relocations, street light or pole impacts and potential temporary hardstand required at some locations. These would be confirmed through the Transport Operator appointed to move components to the Project Area and be covered through the relevant permits issued by Main Roads WA Heavy Vehicle Services. Given there are two potential routes out of Bunbury for over sized movements, the mitigation measures would likely only be required on one route.

4.5 Mitigation Measures – Bunbury Route via Coalfields Road

Potential mitigation measures for pinch points assessed for oversized or wide loads along the routes assessed from Bunbury Port for the project are set out in Table 1. The location of pinch point assessments are shown in Figure 46 and Figure 47 with references provided in Table 1. Some sites were examined but not mapped out using the swept path analysis given the pinch point referred to other elements such as potential load restrictions on bridges.

Other locations, where there was a straight alignment of a rail crossing, were also not examined by swept path as the pinch point related more to management measures which would be addressed in the TMP.

The nature of the proposed pinch point mitigation measures are not seen as a significant impact for the project and all could be managed through the TMP process with Main Roads WA HVS and South-West Office.

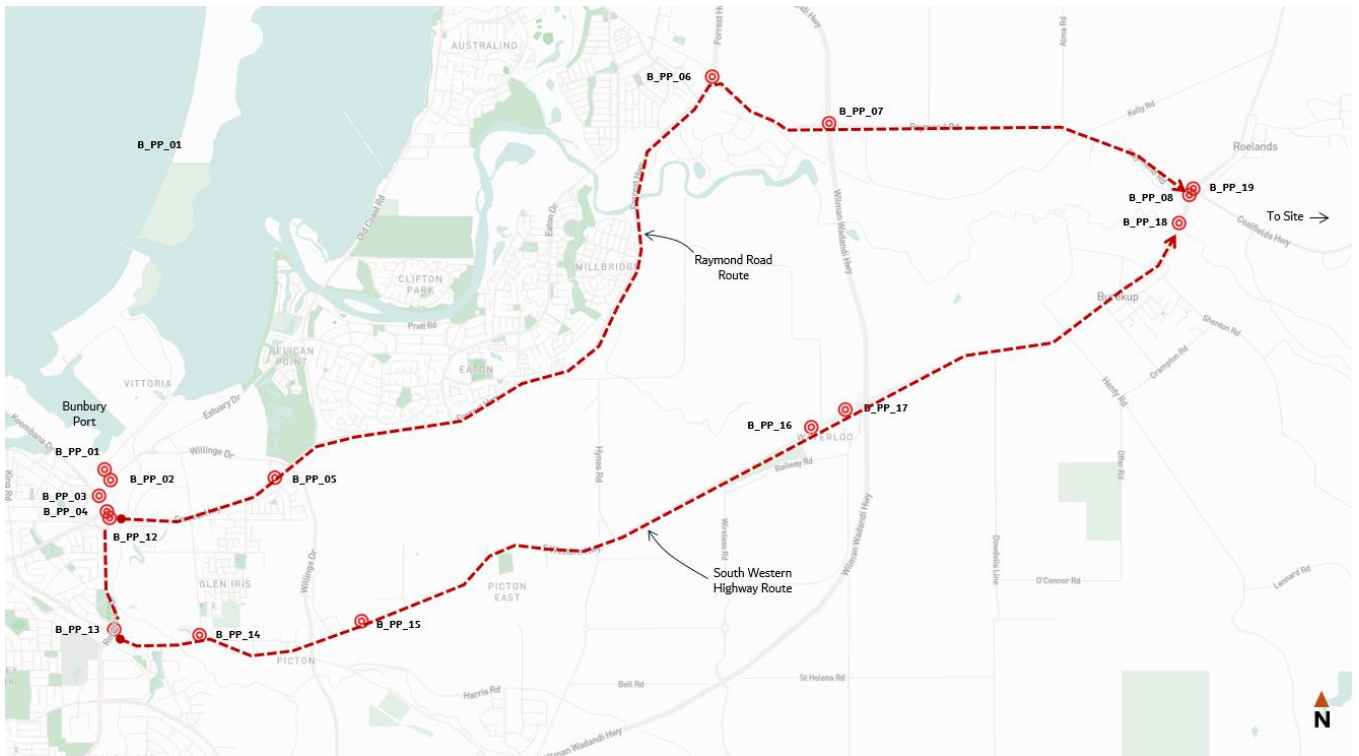


Figure 46 Pinch point locations - Bunbury area (source: Planwisely)

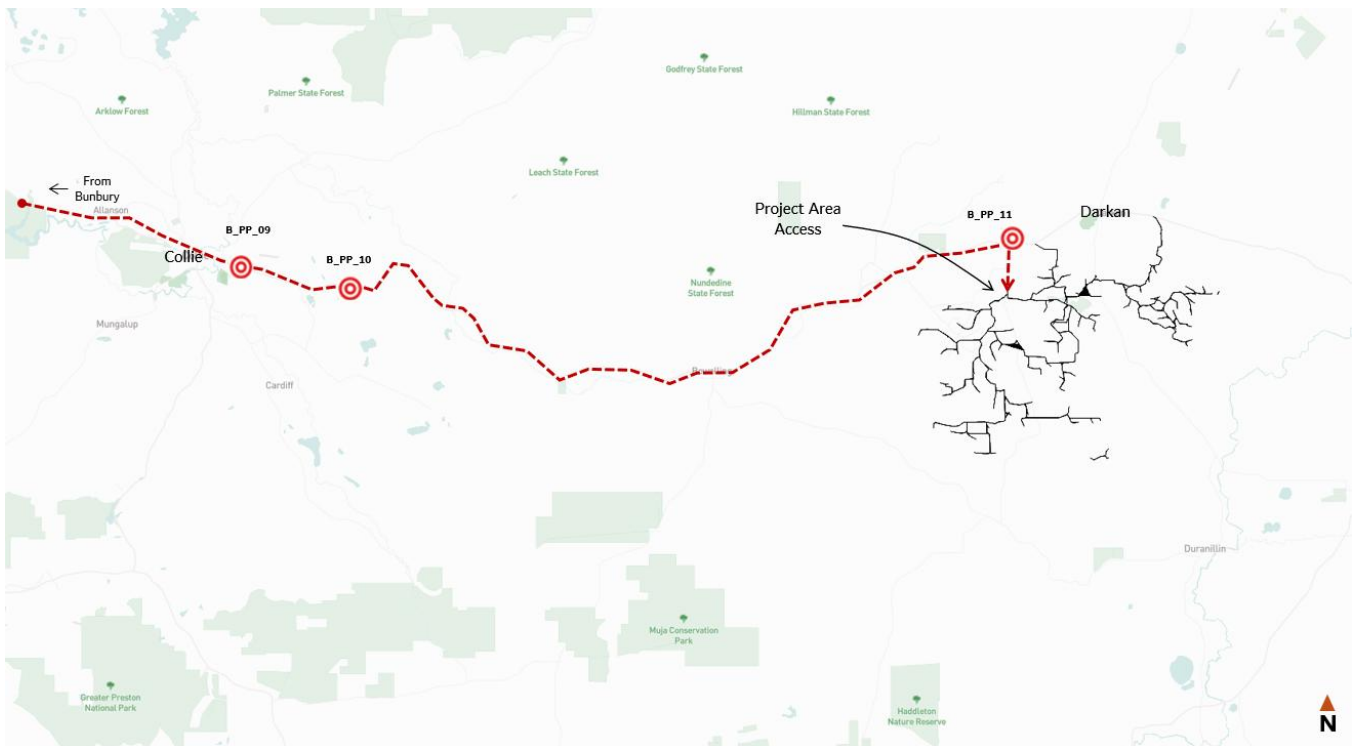


Figure 47 Pinch point locations – Collie area (source: Planwisely)

Table 1 Mitigation measures for pinch points - Bunbury Port route

PP ID	PP Co-Ordinates		PP Type	Intersection		Mitigation
	Latitude	Longitude		Approach Road	Departure Road	
BPP01 Figure 46	33°19'49.94"S	115°40'2.50"E	Gate	Port Road	Port Road	None evident. Examine with Southern Ports Authority.
BPP02 Figure 46	33°19'54.36"S	115°40'5.48"E	Intersection	Port Road	Estuary Drive	Potential tree trimming, signage relocations, some potential hardstand temporary required. Assess during TMP stage when exact vehicle configuration known.
BPP03 Figure 46	33°20'1.01"S	115°39'59.73"E	Intersection	Estuary Drive	Koombana Drive	Potential hard stand or median works to provide for turn. Some signage or street light impacts. Assess during TMP stage when exact vehicle configuration known.
BPP04 Figure 46	33°20'7.58"S	115°40'3.70"E	Intersection	Eelup Rotary	Forrest Highway	None evident.
BPP05 Figure 46	33°19'53.37"S	115°41'28.14"E	Intersection	Forrest Highway	Thomson Road	None evident.
BPP06 Figure 46	33°17'4.98"S	115°45'8.24"E	Intersection	Forrest Highway	Raymond Road	Hardstand alterations required, street light and signs impacted, widen out median and trim others. Assess during TMP stage when exact vehicle configuration known.
BPP07 Figure 46	33°17'24.57"S	115°46'7.04"E	Intersection	Raymond Road	Wilman Wadandi	Potential mounting of internal hardstand which is built for these movements, potential pole and signpost impacts - require assessment at detailed design stage.

PP ID	PP Co-Ordinates		PP Type	Intersection		Mitigation
	Latitude	Longitude		Approach Road	Departure Road	
BPP08 Figure 46	33°17'54.65"S	115°49'8.33"E	Intersection	Raymond Road	South Western Highway then Coalfields Road	Median works, hardstand, signage impacts, light pole impacts, require detailed design work through Civil Engineer at detailed stage. Impacts on rail crossing potential requiring approvals from PTA if any alterations. Route from South-Western Highway better due to form of turn into intersection. Assess during TMP stage when exact vehicle configuration known.
BPP09 Figure 47	33°17'52.29"S	115°49'13.36"E	Rail Crossing	Coalfields Road	Coalfields Road	None evident, disused.
BPP10 Figure 47	33°37'50.10"S	116°23'09.51"E	Rail Crossing	Coalfields Road	Coalfields Road	None evident, disused.
BPP11 Figure 47	33°21'11.3"S	116°40'23.8"E	Intersection	Coalfields Road	Cordering Road North	Potential hardstand, signage impacts, Impacts on trees possible but would be very limited, footpath on north-eastern side of intersection impacted. Assess during TMP stage when exact vehicle configuration known.
BPP12 Figure 46	33°20'7.58"S	115°40'3.70"E	Intersection	Eelup Rotary	Forrest Highway	None.
BPP13 Figure 46	33°20'57.09"S	115°40'7.35"E	Intersection	Robertson Drive	South Western Highway	Hardstand widening out required on nearside turn, sign and pole impacts. Assess during TMP stage when exact vehicle configuration known.
BPP14 Figure 46	33°20'59.6"S	115°40'50.8"E	Intersection	South Western Highway	Vittoria Road	New roundabout, potential hardstand works required, some signage or pole impacts. Inside roundabout kerbing is all semi-mountable, including the landscaped area in centre of

PP ID	PP Co-Ordinates		PP Type	Intersection		Mitigation
	Latitude	Longitude		Approach Road	Departure Road	
						roundabout. Assess during TMP stage when exact vehicle configuration known.
BPP15 Figure 46	33°20'53.6"S	115°42'12.0"E	Rail Crossing	South Western Highway	South Western Highway	None evident.
BPP16 Figure 46	33°19'32.2"S	115°45'58.4"E	Bridge Structure	South Western Highway		Bridge may require monitoring. Seek Main Roads WA advice through permit assessment.
BPP17 Figure 46	33°19'20.3"S	115°46'25.0"E	Intersection	South Western Highway	Wilman Wadandi	Underbridge height restriction, nominally 5.6m clearance but to be surveyed. Diversion impacts using the Wilman Wadandi turn back design. Unsure if the swept path used by Main Roads WA in design accommodated 91m blades. Assess during TMP stage when exact vehicle configuration known.
BPP18 Figure 46	33°18'06.5"S	115°49'03.1"E	Bridge Structure	South Western Highway		Bridge may require monitoring. Seek Main Roads WA advice through permit assessment.
BPP19 Figure 46	33°17'54.65"S	115°49'8.33"E	Intersection	South Western Highway	Coalfields Road	Median works, hardstand, signage impacts, light pole impacts, require detailed design work through Civil Engineer at detailed stage. Impacts on rail crossing potential. Assess during TMP stage when exact vehicle configuration known.

5. ROAD NETWORK

5.1 Existing Road Network

The existing road hierarchy is set out in Figure 48, with Coalfields Road running east-west to the north of the Project Area. Posted speed limits are shown in Figure 49 and the maximum classification for the Restricted Access Vehicle (RAV) network is shown in Figure 50. Roads which cater for school bus routes for schools in the Shire of West Arthur are shown in Figure 51.

In relation to the posted speed zones, the Main Roads WA RIMS mapping shows that the majority of rural roads in the area are classified as 110km/hr outside of built up areas.

Coalfields Road has a RAV classification of RAV 7 network, with Darkan Road South part of the RAV 6 network. The lowest classification for access roads associated with the Project Area is RAV4. Cordering Road South, Gibbs Road, Capercup Road North Road have a RAV4 classification. More detailed descriptions of the local road network connections are provided in the following sub-sections.

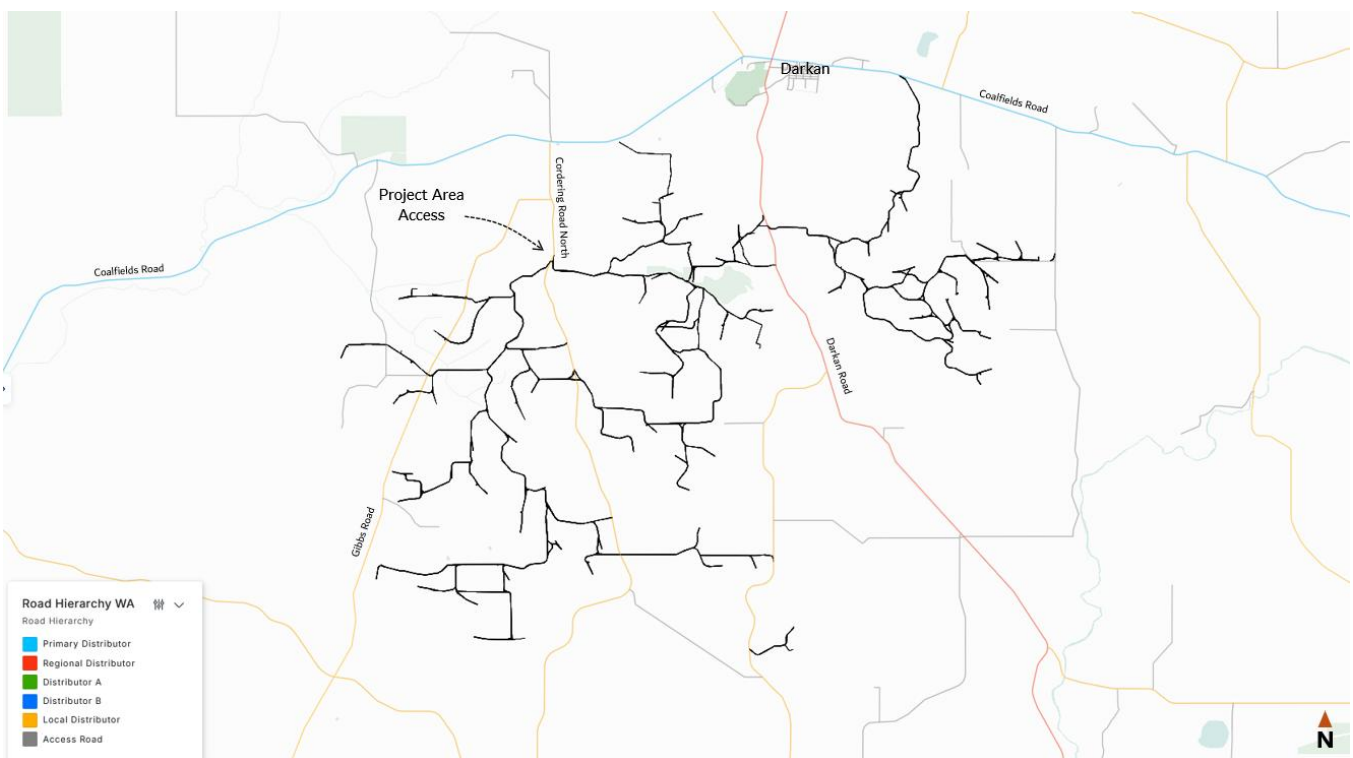


Figure 48 Road hierarchy surrounding the Project Area (source: Planwisely)

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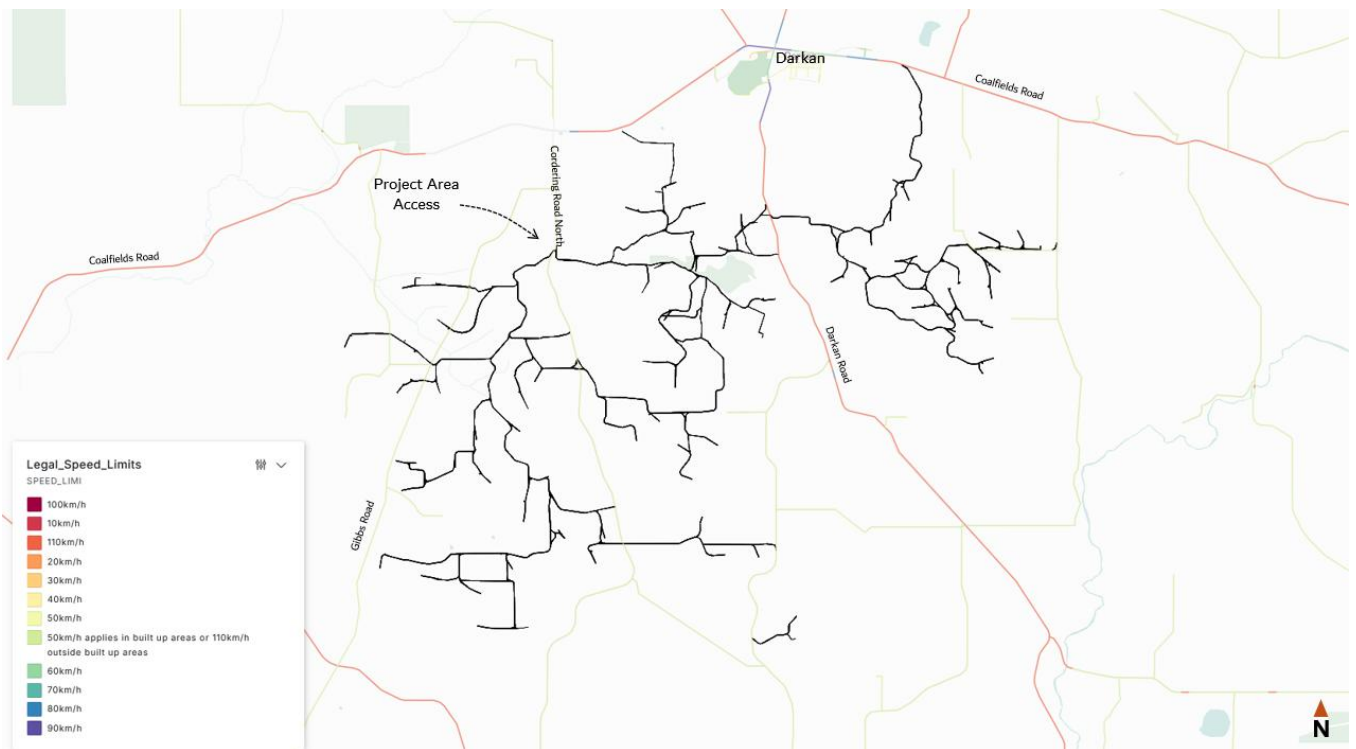


Figure 49 Speed zoning surrounding the Project Area (source: Planwisely)

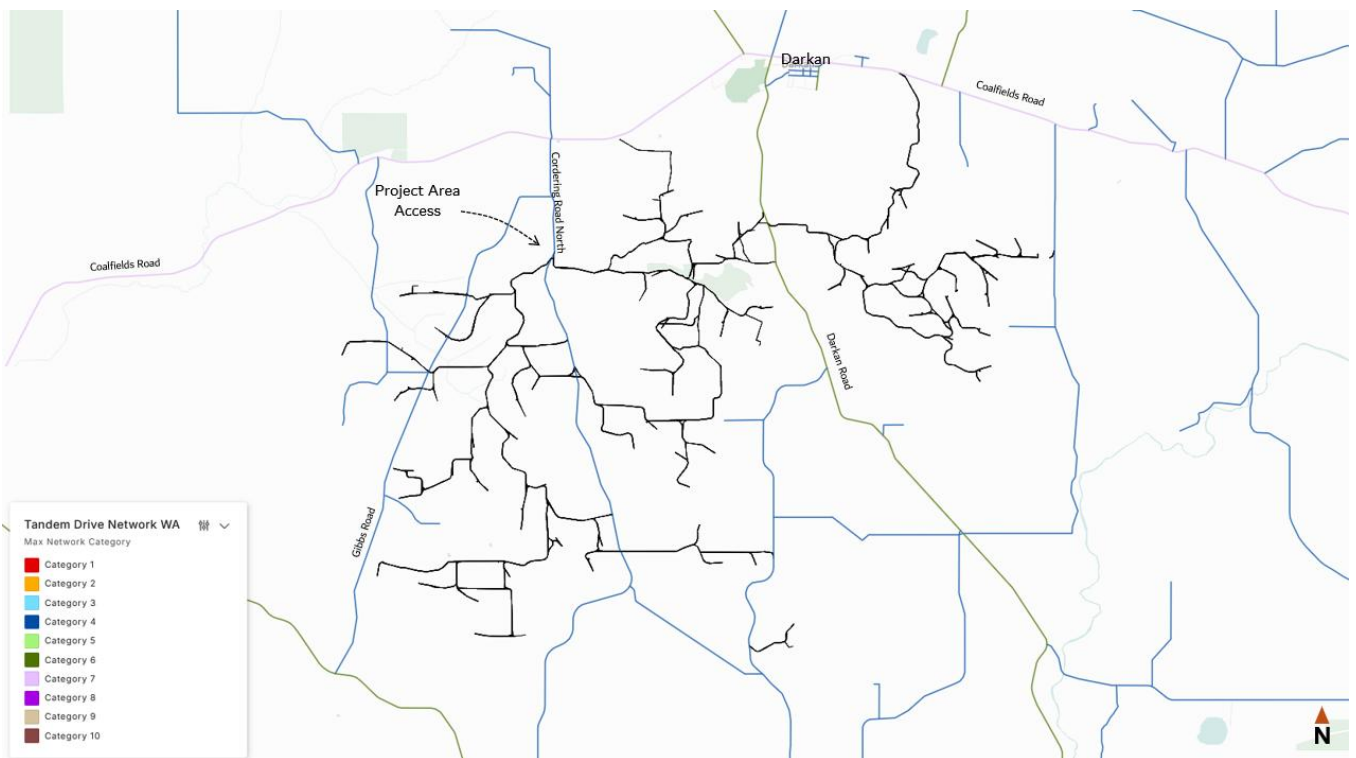


Figure 50 Maximum RAV network classification (source: Planwisely)

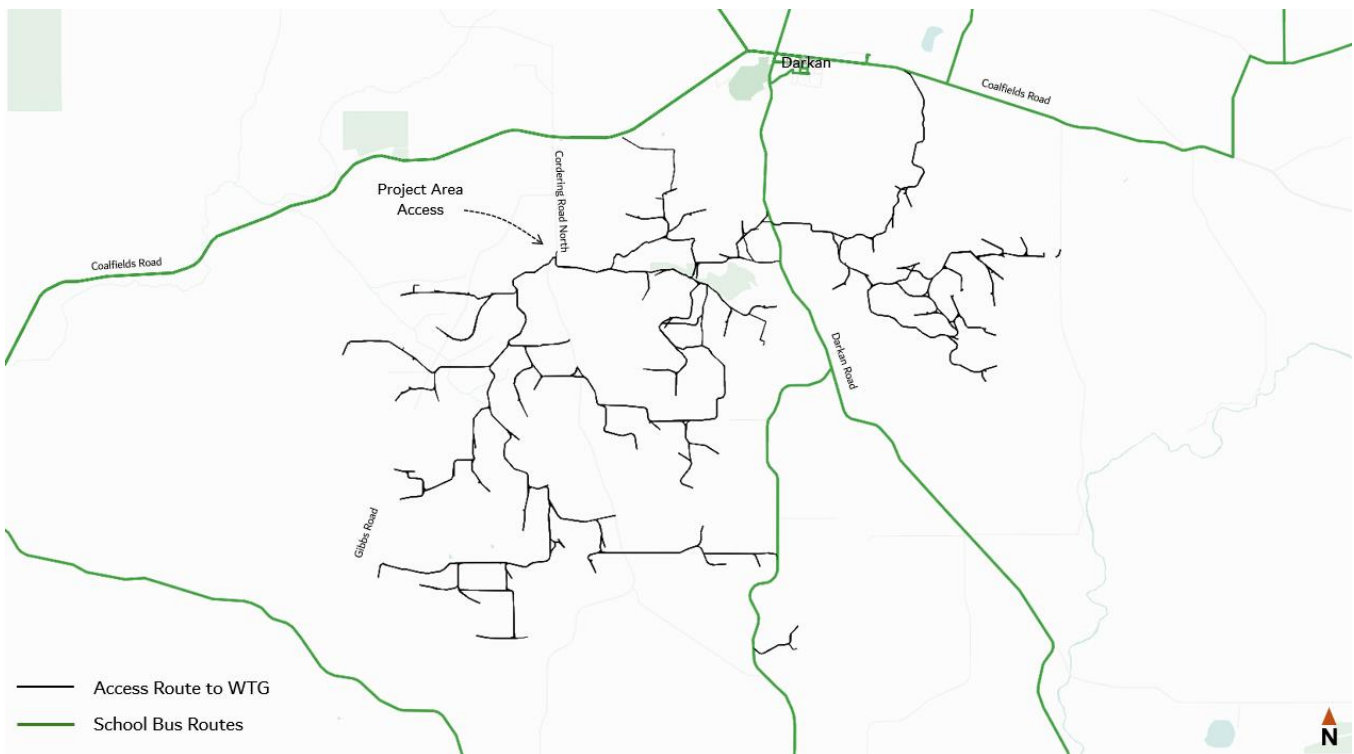


Figure 51 School bus routes (source: Planwisely)

5.1.1 Road Network Volumes

Road network volumes for the routes examined for the project were collected for the individual count sites from Main Roads WA as well as average weekday volumes based on 2024 data. The individual count sites for the routes from Bunbury Port are set out in Figure 52 and Figure 53 with the network average weekday volumes taken from Planwisely which uses anonymised Bluetooth and mobile device data set out in Figure 54 and Figure 55.

The network around Bunbury caters for larger volumes of traffic associated with both the traffic generated or attracted to land uses around Bunbury as well as traffic that is passing through the area to other destinations. It should be noted that the data for this area is prior to the opening of Wilman Wadandi therefore the average weekday volumes profile would have altered significantly. Although that is the case, it would not impact the outcomes of this assessment.

For the network to the east of Collie, the drop off in overall average weekday volumes is significant, with Coalfields Road (Collie-Lake King Road) having around 300-400 vehicles per day passing through the intersection with Cordering Road North. Site traffic counts also informed this assessment which are discussed in section 7.

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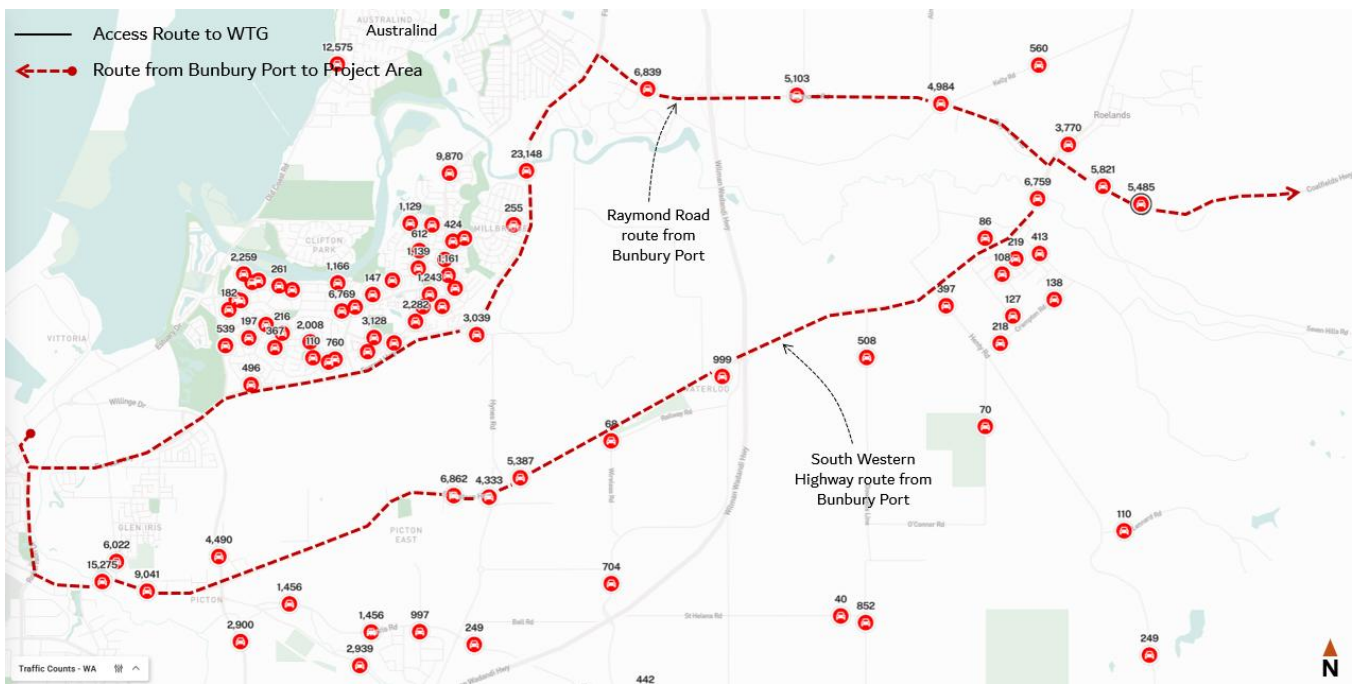


Figure 52 Weekday average traffic volumes - routes from Bunbury Port to Coalfields Road (source: Planwisely)

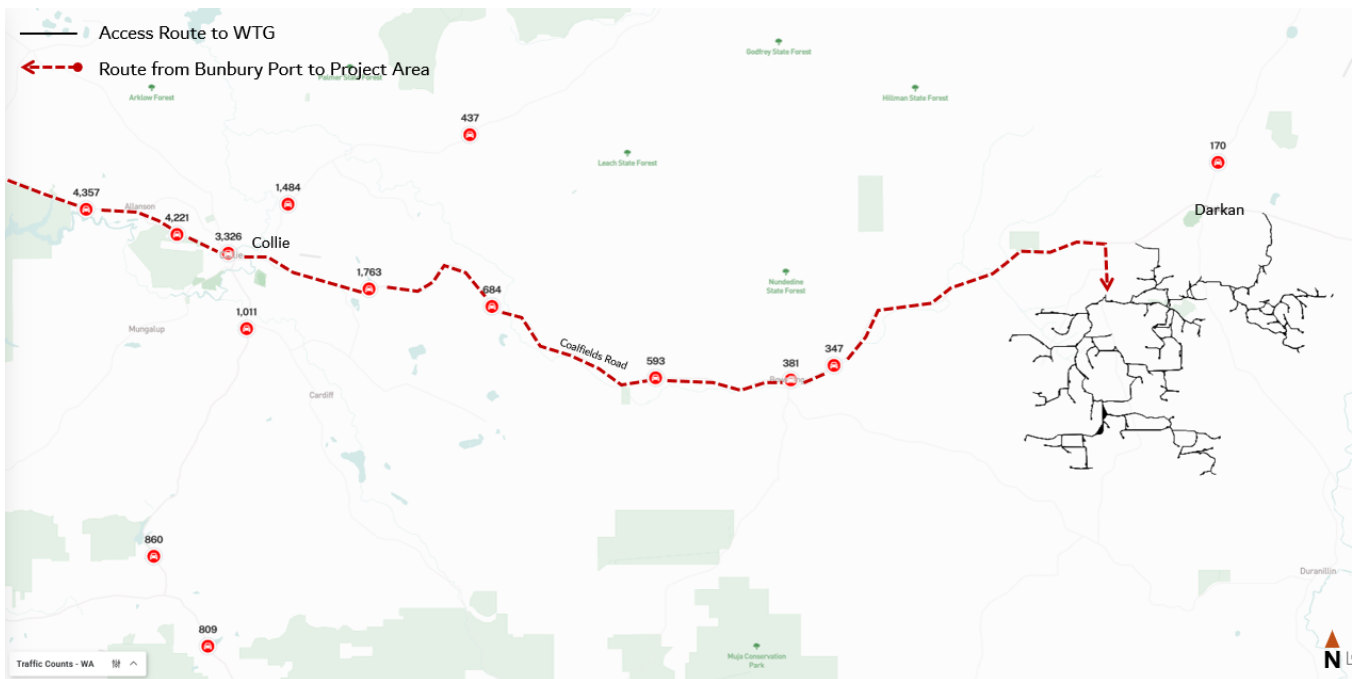


Figure 53 Weekday average traffic volumes - routes from Coalfields Road (source: Planwisely)

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Figure 54 Average 2024 weekday traffic volumes for routes from Bunbury Port (source: Planwisely)

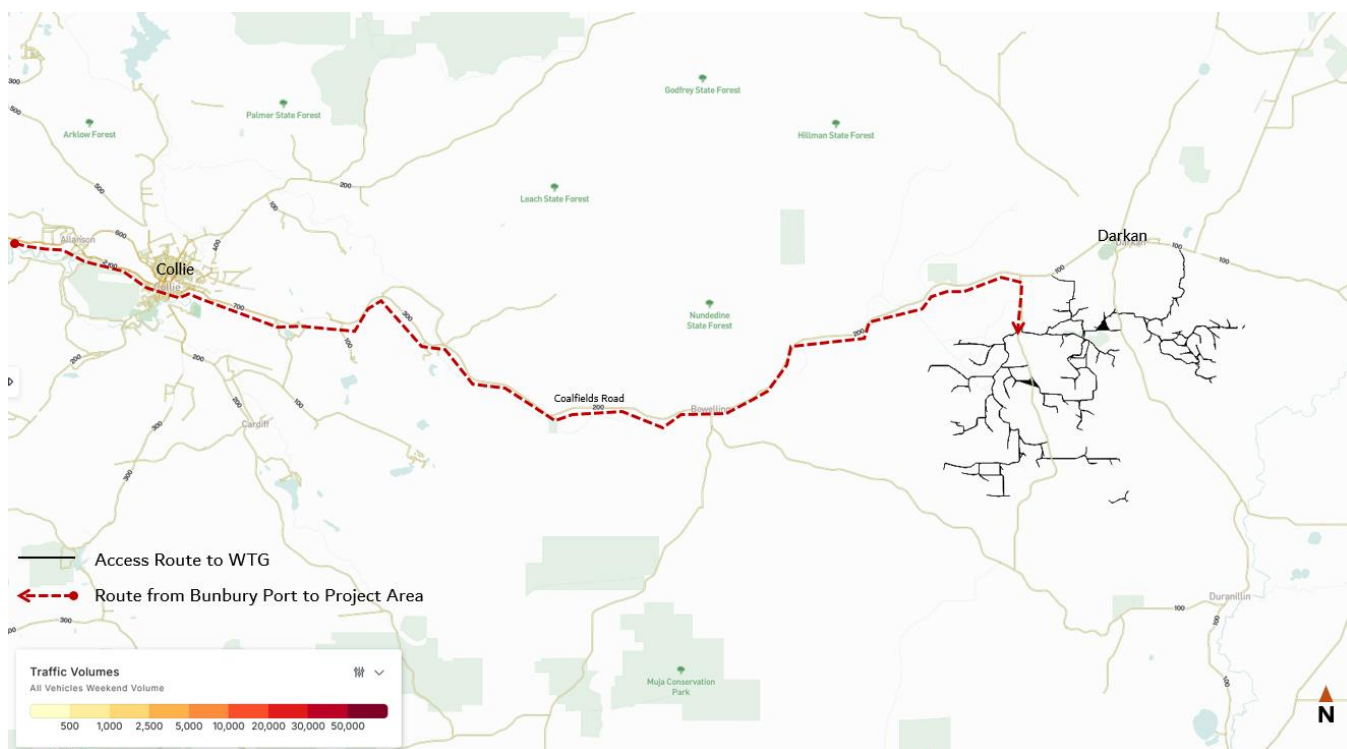


Figure 55 Average 2024 weekday traffic volumes for network east of Collie (source: Planwisely)

5.1.2 Coalfields Road (Collie Lake King Road)

Coalfields Road is a Main Roads WA controlled Primary Distributor road with a posted speed limit of 110 km/hr past the Project Area. It is classified as a RAV Network 7 road by Main Roads WA and has already been identified by Main Roads WA as being appropriate for the movement of heavy vehicles.

Coalfields Road is a single carriageway with one 3.5m wide lane in each direction where the sealed portion is approximately 7m wide divided by white line controls, with 1.5m wide sealed shoulders either side. In advance of the right/left staggered intersection with Cordering Road North and Gibbs Siding Road, Coalfields Road develops right turning lanes (to the west and east) and a left turning lane (to the east of Cordering Road North).

A cross section of Coalfields Road, approximately 700m west of the intersection with Cordering Road North is shown in Figure 56, with the cross section immediately west of the intersection with Cordering Road North shown in Figure 57. The section to the east of the intersection is currently being upgraded by Main Roads WA to have passing lanes extend for approximately 3km. The extent of the works area is shown in Figure 58.



Figure 56 Coalfields Road approximately 700m west of Cordering Road North looking east (source: Google)



Figure 57 Coalfields Road immediately west of Cordering Road North intersection looking east (source: Google)

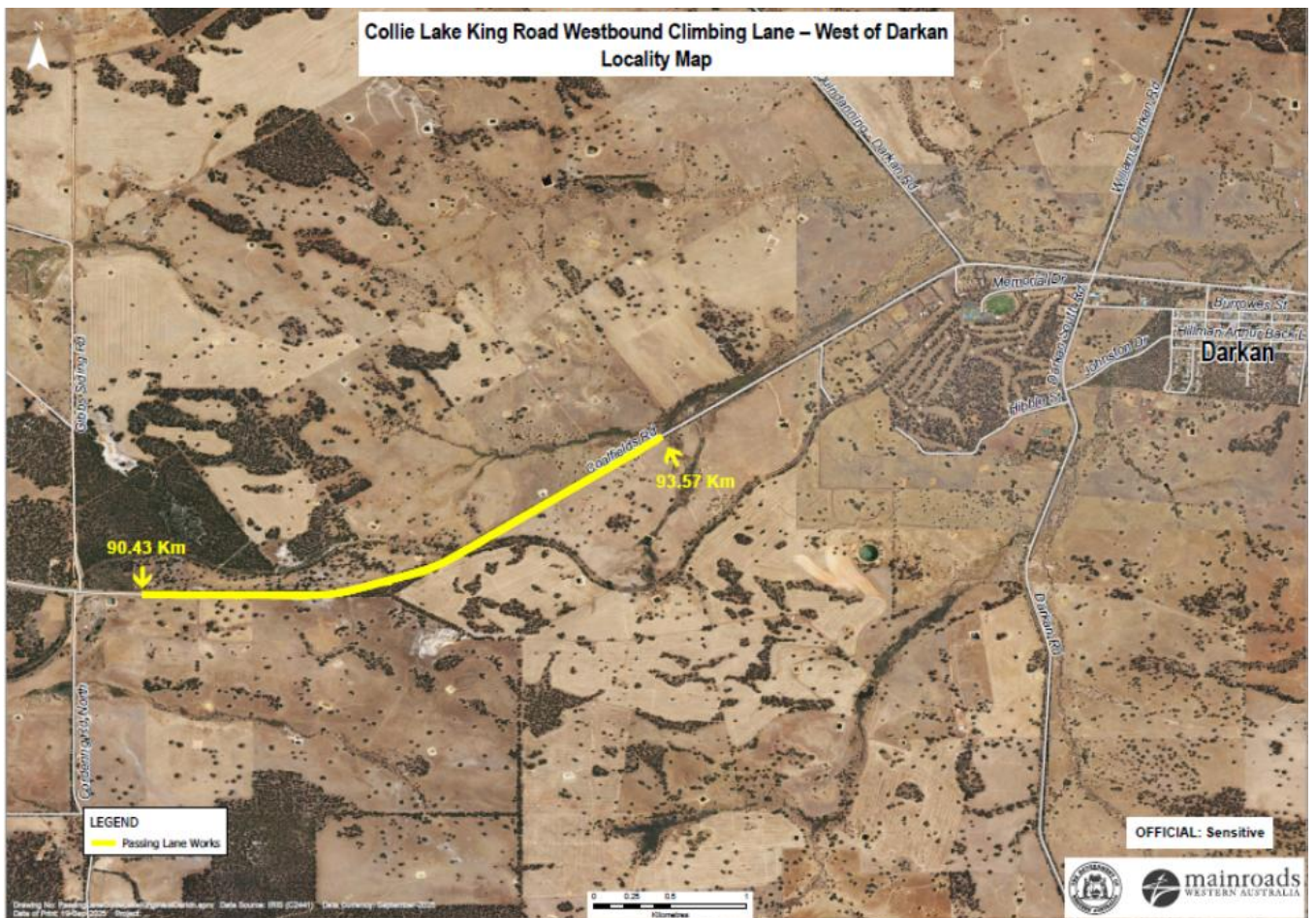


Figure 58 Passing lane works east of Cordering Road North on Coalfields Road (Collie Lake King Road) (source: Shire of West Arthur)

There is a 24 hour vehicle volume recording site on Coalfields Road east of Bowelling Duranillin Road (site 1251) which is approximately 20km west of the intersection with Cordering Road North. The permanent count station provides the ability to establish patterns in annual volumes and any growth patterns seen in average weekday movements.

The count site shown in Figure 59, recorded an average of 452 daily trips, with travel evenly split across both directions across the day. There was a 40.7% proportion of heavy vehicles.

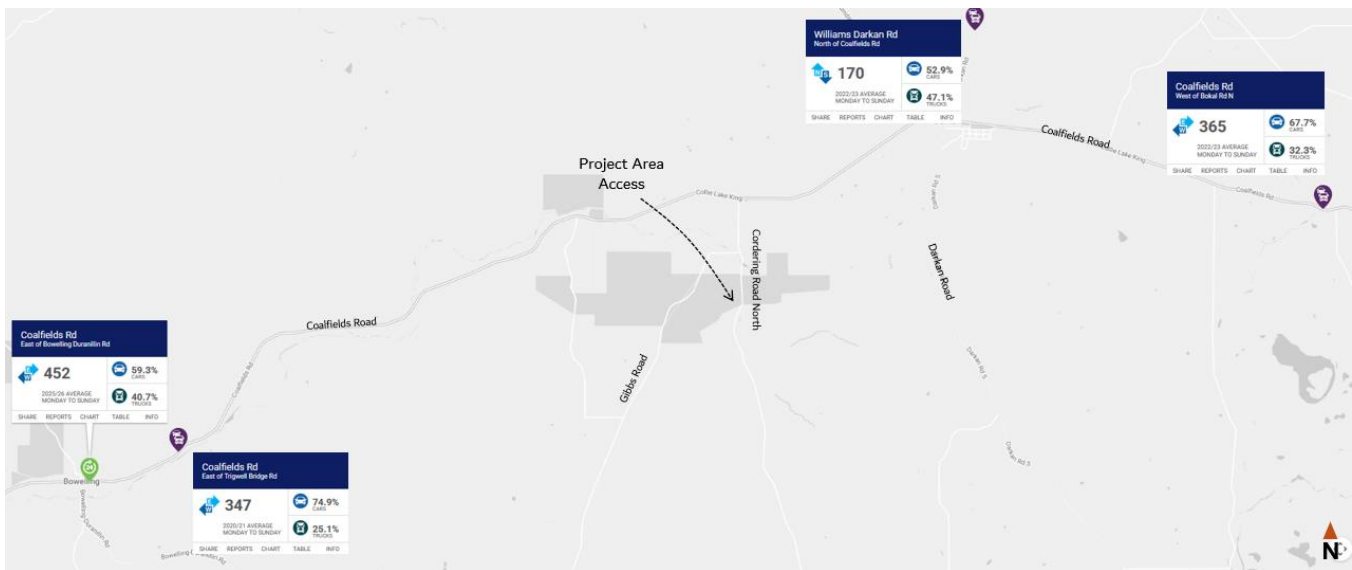


Figure 59 Traffic count information near Project Area - Monday-Sunday 2025 (source: Main Roads WA)

5.1.3 Cordering Road North

Cordering Road North, which connects Coalfields Road to the key access point for the project, is a Local Distributor Road that has distinct sections. It forms a connection between Coalfields Road and the Bowelling-Duranillin Road.

The initial section of Cordering Road North just south of Coalfields Road is a high quality, sealed and marked highway which includes sealed verges and drainage features. This is shown in Figure 60. The carriageway then narrows to a rural standard road with a 6m wide carriageway that is unmarked. This is set out in Figure 61.

Around 5.3km south of the intersection with Coalfields Road, Cordering Road North transitions into a gravel surface as shown in Figure 62. The sealing works for a section between 3.1km south of Coalfields Road and the existing transition to gravel has only recently been completed by the Shire of West Arthur. There is a short section of sealed surface in a low lying area adjacent to 1029 Cordering Road North.

Cordering Road North is classified as a RAV Network 4 road and has a posted speed limit of 110 km/hr outside of built up areas. There is no marked school bus route on available mapping but there is evidence of existing or past usage for bus routes along the corridor.

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Figure 60 Cordering Road North south of Coalfields Road intersection looking south (source: Flyt)



Figure 61 Cordering Road North – typical road cross section looking south (source: Flyt)



Figure 62 Cordering Road North transition from bitumen to gravel surface (source: Flyt)

5.1.4 Darkan Road South

Darkan Road forms a connection between Darkan, Coalfields Road, the Williams-Darkan Road and the Bowelling-Duranillin Road. It is classified as a Regional Distributor Road.

The carriageway is a good quality, sealed and marked highway along its alignment through the Project Area which includes sealed verges and drainage features. The initial section through Darkan includes frontage to Darkan Primary School and a crossing of the Collie-Darkan Rail Trail. This is shown in Figure 63.

The majority of the corridor is formed of a 6m minimum sealed marked carriageway with gravel verges, as is evident in Figure 64.

Darkan Road is classified as a RAV Network 6 road and has a posted speed limit of 110 km/hr outside of built up areas with staged speed zones on approach to Darkan. Darkan Road is used for school bus routes.



Figure 63 Darkan Road south of Coalfields Road intersection looking south (source: Flyt)



Figure 64 Darkan Road typical cross section looking south (source: Flyt)

5.1.5 Gibbs Road

Gibbs Road, which runs through the western section of the Project Area, connects to Cordering Road North. It is an unsealed Local Distributor Road that typically has a narrow, crowned carriageway that has no seal or markings. A typical cross section of Gibbs Road looking south is shown in Figure 65.

Gibbs Road is classified as a RAV Network 4 road and has a posted speed limit of 110 km/hr outside of built-up areas. The intersection at Cordering Road North is formed of sealed bitumen.



Figure 65 Gibbs Road looking south – typical cross section (source: Google)

6. VEHICLE ACCESS

6.1 Vehicle Access

The approach to delivering the project is based on the use of specific access points and a combination of design elements and management for movements around the area. The Project Area and surrounds is typically made up of extensive farming and grazing properties and reserves. By reducing the number of key access points into the Project Area, this limits the impacts and allows the assessment to be focussed on key locations. The general approach, set out in Figure 66, is:

- All wide or oversized movements to be provided through access points specifically designed for the vehicle configurations off Cordering Road North (CR01 and CR02)
- Use of one main access point for as-of-right vehicles to access the Operations and Maintenance area, the BESS facility and substation (CR04)
- Access for the workforce accommodation off an internal project track which would be accessed via Cordering Road North (CR04)
- Design and construction of project access tracks and crossover points when crossing Gibbs Road, Cordering Road North and Darkan Road. Some exit points for vehicles would also be used
- Transmission line project area accessible by CR07-CR10.

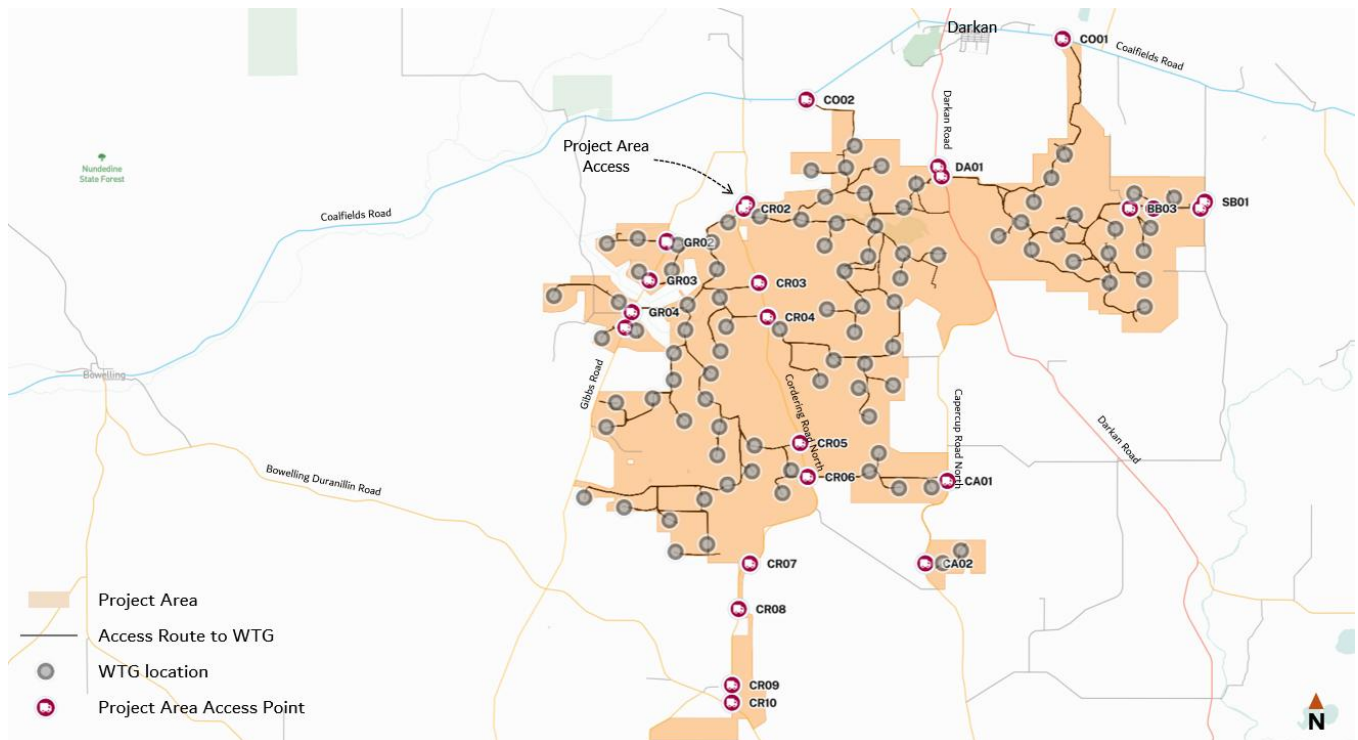


Figure 66 Project area and access routes (source: Planwisely)

6.1.1 Project Access Point – Oversize Loads

The main access point to the Project Area for oversize movements (CR01) is approximately 3.1km from Coalfields Road. This section of Cordering Road North has recently been bitumenised and the proposed access points are cleared alignments next to existing rural paddocks. Access tracks would be constructed either side of the alignment, with the design and angle of the tracks being subject to detailed civil design. There are no culverts or drainage features evident in the area.

The movement of loads into these areas would be subject to traffic management, with the overall programming of oversized loads to be determined as part of the project delivery stage. The general location of the eastern access point off Cordering Road North is shown in Figure 67 with the location to the west shown in Figure 68.



Figure 67 Location of access road to east of Cordering Road North for oversize movements (source: Flyt)



Figure 68 Location of access road to west of Cordering Road North for oversize movements (source: Flyt)

6.1.2 Project Access Point – Workforce Accommodation, BESS and Operations Area

The location of the workforce accommodation, BESS site and Operations and Maintenance compound access points off Cordering Road North (CR04) is shown in Figure 69 and Figure 70. The alignment of Cordering Road North turns to the right over a crest to the south of the proposed access point.

The existing configuration of the access tracks sees the tracks exiting to the west and east of Cordering Road North to the north of the crest, providing separation and sight lines. The access gate for the proposed access point is approximately 300m from the crest and curve to the south. Separately, there would be an access track for managed through movements of wide loads to the east of Cordering Road North.

It would be recommended that sight lines be assessed as part of detailed design for these tracks and appropriate signage and safety measures be implemented as part of the project delivery. Given the importance of this location, and the potential for a higher number of light vehicle movements, as well as those movements associated with the BESS construction, this section of Cordering Road North should be bitumenised.



Figure 69 Approximate location of workforce accommodation crossover looking south (source: Flyt)



Figure 70 Approximate location of workforce accommodation crossover looking north (source: Flyt)

6.1.3 Project Crossing Points – Southern Cordering Road North

There are two other crossing points of Cordering Road North which would be used during the construction program under traffic management. They are located approximately 9.8km and 10.8km south of the Coalfields Road intersection (CR04 and CR05). All of these locations have existing farm access tracks and gates, meaning that the locations are already in use for agricultural purposes.

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The locations are shown Figure 71 and Figure 72. They would be utilised to cater for different levels of movements throughout the construction program, with the southern most crossover points being the most likely to see greater use for the movement of turbine blades and tower components for WTG sites on the eastern side of Cordering Road North.

Given those movements would occur under traffic management, the locations would make best use of existing access points and tracks and reduce impact on the surrounding fields and network. Access by light vehicles (LV) at these locations would be limited but most likely be accommodated through the southern most crossover location.



Figure 71 Crossing of Cordering Road North - 9.8km from Coalfields Road (source: Flyt)



Figure 72 Crossing of Cordering Road North – 10.8km from Coalfields Road (source: Flyt)

Separate to those crossing points, there would be four locations where there would be access required for the construction works associated with transmissions lines. These locations would be expected to generate a very low level of traffic, being around five vehicles per day over the nine month schedule. The locations are all on the unpaved section of Cordering Road North and would be formed of an unpaved crossover. The proposed access points for these works are:

- Figure 73 – CR07 which is an existing farm access track spanning Cordering Road North
- Figure 74 – CR08 which is an existing farm access track into field east of Cordering Road North
- Figure 75 – CR09 is a new access point east from Cordering Road North
- Figure 76 – CR10 is a new access point east from Cordering Road North.

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Figure 73 Proposed transmission line access point - CR07 (source: Google)



Figure 74 Proposed transmission line access point - CR08 (source: Google)

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Figure 75 Proposed transmission line access point - CR09 (source: Google)



Figure 76 Proposed transmission line access point - CR10 (source: Google)

6.1.4 Project Crossing Points – Darkan Road

There is one key crossing point of Darkan Road (DA01 and DA02) and a proposed exit point for traffic associated with the development of WTG between Cordering Road North and Darkan Road (DA03). Both of these points nominated as part of the Project Area layout are existing tracks and connections into and across Darkan Road.

The main crossing point of the corridor is approximately 4.3km south from the intersection of Coalfields Road and is shown in Figure 77 with the view west from the crossing shown in Figure 78. There is an existing access point into fields either side of the Darkan Road corridor at this point, with the area to the east of Darkan Road used for grain storage and turnaround of heavy vehicles. As noted in this report, Darkan Road is an existing RAV6 corridor.

To the south, there is a proposed exit point on to Darkan Road from the WTG sites to the west (DA03). This location, shown in Figure 79, is on an existing bend with double white line markings. It would be recommended that this location be used for light vehicle only exit movements to reduce potential safety issues. Signage on approach from both sides should also be provided as a safety measure.



Figure 77 Crossing of Darkan Road – 4.3km from Coalfields Road (source: Flyt)



Figure 78 Crossing of Darkan Road – 4.3km from Coalfields Road looking west (source: Flyt)



Figure 79 Crossing of Darkan Road – 5.3km from Coalfields Road (source: Flyt)

6.1.5 Project Crossing Points – Other Roads

In addition to crossing points set out in the previous sub-sections, there are also access track crossings or access off Gibbs Road (four – GR01 to GR05), Capercup Road North (two – CA01 and CA02) and Beer Bottle Road (One). Given all of those locations would see minimal movements associated with individual or low numbers of WTG sites, the assessment of crossing locations would be addressed in the TMP associated with the project. There are also existing crossovers on to Coalfields Road (CO01), Coalfields Road (CO02) and Schinzig Buller Road (SB01) and Beer Bottle Road (BB01-BB03) that could be utilised during activities associated with the eastern most WTG sites. CR02 would only be used for emergency egress purposes only for safety.

The locations of the crossing points nominated for those roads are either in locations where there are existing farm tracks or farm gates or, in the instance of Beer Bottle Road, in an open field area where there is only access to existing rural properties. It would be expected that the project safety and operational plans would also address the use of these locations by project vehicles.

Some exit movements may also be catered for from those locations for the empty trailers or low-loaders associated with the construction stage of the project. This would also be addressed through the TMP and all movements would be under traffic management as a matter of course.

6.2 Track Construction

There would be different levels of access requirements for the project with final internal routing determined once broader transport and logistics decisions have been finalised. The following general design criteria and mitigation measures could be applied to the access track layout to mitigate potential impacts:

- access tracks could be an average of 7-10 m wide (widths will vary depending on various construction requirements (e.g. reinforcement batters) topography and cabling requirements)
- regular passing places and turning areas will be installed on longer sections of access track if required – in particular around the BESS facility, Operations and Maintenance compound, and close to crossing points of Cordering Road North and Darkan Road to allow for loads to dwell and traffic management to be put in place
- watercourse crossings should be minimised
- tracks will be constructed from locally sourced aggregate from internal quarry locations to be determined
- construction of access tracks will vary depending on localised ground conditions. Conditions impacting construction include the existing vegetation, nature of the topsoil, level of moisture in the ground, geotechnical base and localised topography

- post construction, any residual areas that were cleared to create batters and corners should be rehabilitated. Tracks will be maintained and need to remain passable for oversize over mass loads in the event of a blade replacement during operation.

6.3 Vehicle Types

A range of vehicle types and movements would be associated with the development of the project components with the larger components being covered by the analysis completed in this assessment for the turbine blade transport.

The majority of other heavy vehicle movements associated with the project will be as-of-right vehicles and B-Double trucks, potentially some Low Loader movements requiring a permit and potential for OSOM loads – this may include the transformer for the BESS and any buildings for the workforce accommodation or Operation and Maintenance buildings which are oversize transportable structures. They would be subject to specific permitting by Main Roads WA and require submission of a full TMP by the Transport Operator associated with the project. The other potential vehicle types are described in the following sub-sections.

6.3.1 As of Right Vehicles

Vehicles such as regular length semi-trailers and single unit trucks are as-of-right vehicles that can travel on any part of the WA road network, including Cordering Road North and Darkan Road. These vehicles do not require permits and can select any route of travel to and from the Project Area.

Deliveries of project construction compound and fencing, gravel/ hardcore, concrete, crane support equipment, miscellaneous electrical equipment, earthworks import/export and waste disposal could occur via as-of-right vehicles. Construction of the transmission lines part of the project via CR07-CR10 is expected to be as-of-right vehicles only.

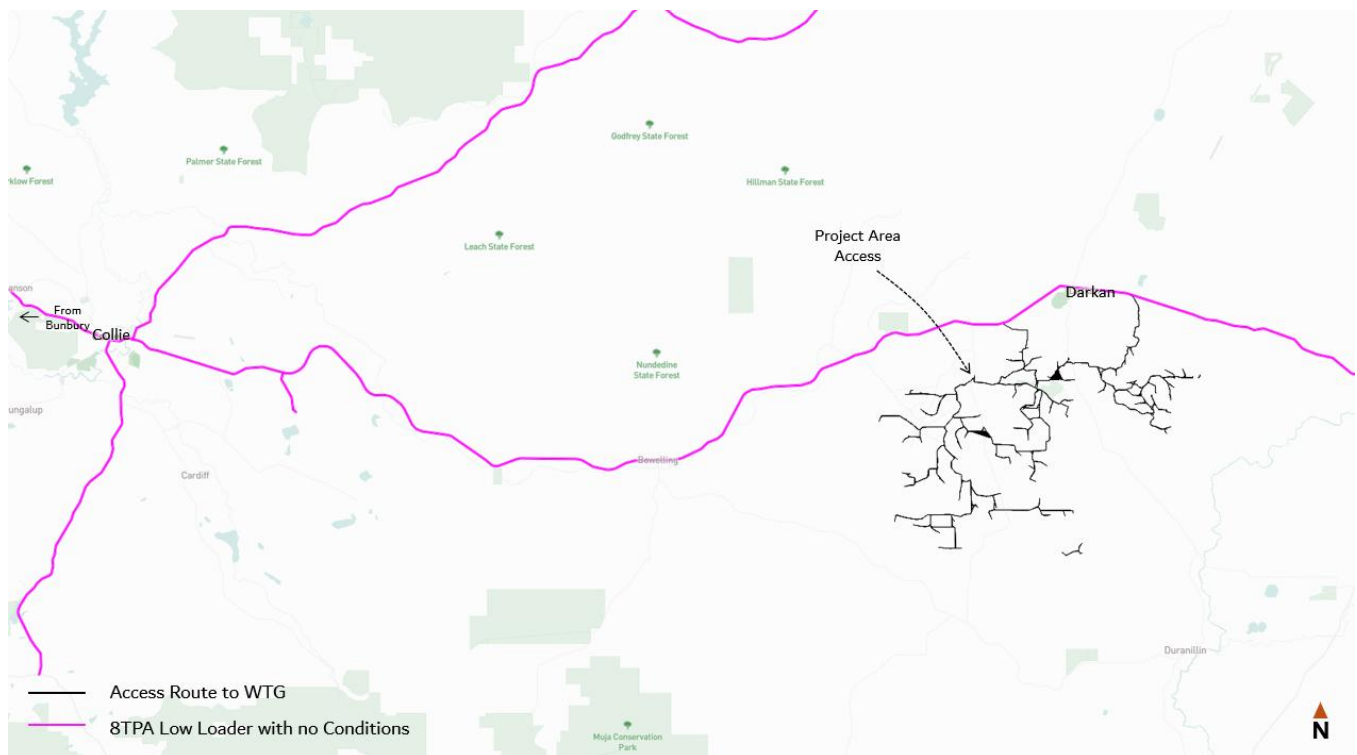
6.3.2 Restricted Access Vehicles – Not Oversize or Overmass

The prime mover and long semi-trailer trucks typically used in the BESS component of the project to deliver construction equipment, inverters and other site components would be Class 2 RAVs.

These vehicles can travel on the RAV Tandem Drive Network 2 (for a length up to 20 m and maximum mass of 48.5 tonnes), Network 2.1 (for a length up to 20 m and maximum mass of 50.5 tonnes), Network 2.2 (for a length up to 20 m and maximum mass of 51.5 tonnes) and Network 2.3 (for a length up to 20m and maximum mass of 53 tonnes). RAV network road classifications are in Figure 50 which shows the main routes into the Project Area can easily accommodate these configurations.

Based on other projects, the transport of construction plant to and from the Project Area would likely use a low loader combination. These vehicles can travel on 8 tonnes per axle Low Loader Network 1-6 which cover the range of 3 and 4 axle low loaders, with and without 2 axle dollies.

There is an 8TPA connection between Bunbury Port and the intersection of Coalfields Road and Cordering Road North as seen in Figure 80. The section between that intersection and the project access (CR01) or BESS and Operations and Maintenance area access (CR04) would require permits through Main Roads WA HVS.



6.3.3 Oversize and/or Overmass (OSOM) Vehicles

An OSOM vehicle is defined as a RAV which exceeds any of either 2.5 m in width, 4.3 m in height, or the maximum length and mass limits. These vehicles could include:

- Loads associated with the turbine blades, tower sections and nacelles
- Cranes associated with installation of WTG, batteries and other site construction requirements
- Semi-trailer low loaders with wider loads (up to 3 m) carrying components such as site offices, modular units for the workforce accommodation etc.
- Tandem Drive prime mover with a 7x8 or a 10x8 low loader trailer or similar configuration which could be 4 m wide and 30m+ in overall length. These trucks would be used to carry the largest indivisible loads such as transformers or larger site construction components.

The exact configuration of the vehicles to be used for the OSOM movements would be determined as part of the project programming, with this information setting out the general configuration of potential vehicles which are typical of renewables projects.

6.4 Traffic Management

For the purpose of delivering project components to the Project Area from Bunbury Port, a detailed TMP would be required to be submitted to Main Roads WA for approval should there be a significant number of OSOM movements being considered.

In addition, permit applications would be required for the transportation task along some sections of the local road network – most notably Cordering Road North - and this is expected to be enforced as a condition of approval based on advice from Main Roads WA given this condition is applied consistently across renewables projects in Western Australia.

In addition to the temporary measures associated with traffic management of the construction components, the access point to the BESS and Operations and Maintenance compound would see the most use by staff associated with the project over the course of the operation of the WAWF. As set out previously, it would be proposed that the access point for light and heavy vehicles in this area should be located north of the existing crest and signage or markings should be included as a safety measure.

All other crossing points or tracks constructed as part of the project will be left in situ, with many of them being upgrades over the existing farm crossings and access points that will be used for this project.

7. FORECAST TRAFFIC VOLUMES

7.1 Introduction

The assessment of traffic volumes has been undertaken on the basis of providing relevant details on the potential impacts around the Project Area and examine the scale of the potential movements associated with both heavy and light vehicle movements during the construction and operational stages of the WAWF project.

Movement of the project components to the Project Area would be subject to a detailed TMP that would be submitted to approval of Main Roads WA HVS prior to commencement of transportation. Impacts associated with the State road network, in terms of hours of movements, mitigation measures, operational functions etc. would be addressed within that TMP which would provide the project with the required permits for movement of components.

It is also recommended that the permits be reviewed by the South West and Wheatbelt Office of Main Roads WA to capture any localised issues related to movement of components or implications related to other projects in the area or any implications for management of the network around Bunbury.

The level of trip generation associated with the proposed project would not result in any capacity or congestion issues on the immediate road network within the Shire of West Arthur owing to the low levels of background traffic and the limited levels of traffic associated with the project which will be delivered over a timeframe of two years. The impacts will be further lessened by siting of a workforce accommodation facility off Cordering Road North and use of the internal project track network for movements rather than the surrounding road network.

Notwithstanding this, there would be an increase in the volume of traffic on key local and regional roads including Coalfields Road, Cordering Road North and Darkan Road as a result of the project and there would be impacts associated with that traffic generation during the construction phase.

This section sets out the forecast volume of movements and reports on levels of traffic expected on the road network. The overall road network configuration and high level implications relating to route assessment are discussed in the previous sections.

7.2 Headline Traffic Movements

The most recent available data was extracted from the Main Roads WA Traffic Map and Planwisely as set out in section 5. This has formed the baseline information for this assessment. In addition, AM peak hour traffic counts were completed in April 2026 for two locations along Coalfields Road – at Cordering Road North and Darkan Road. These are set out in Figure 81 and Figure 82.

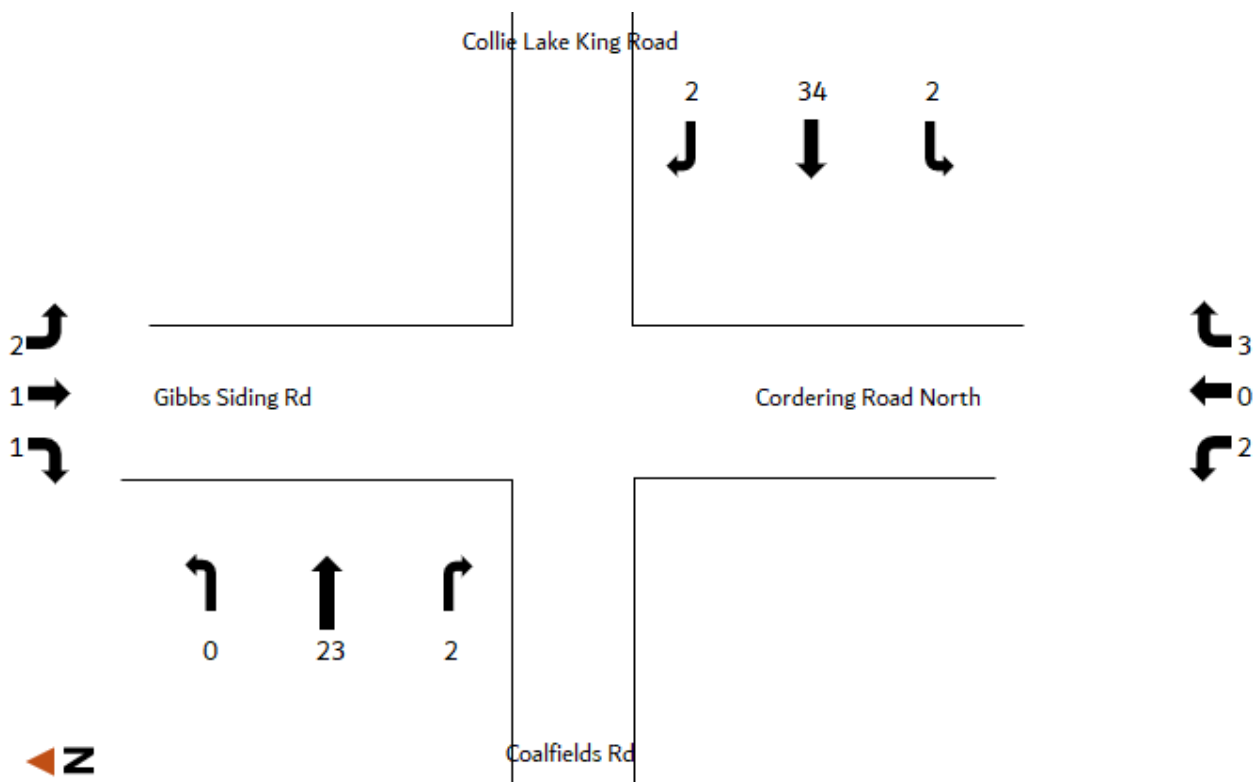


Figure 81 AM peak hour counts - Cordering Road North intersection with Coalfields Road (source: Flyt)

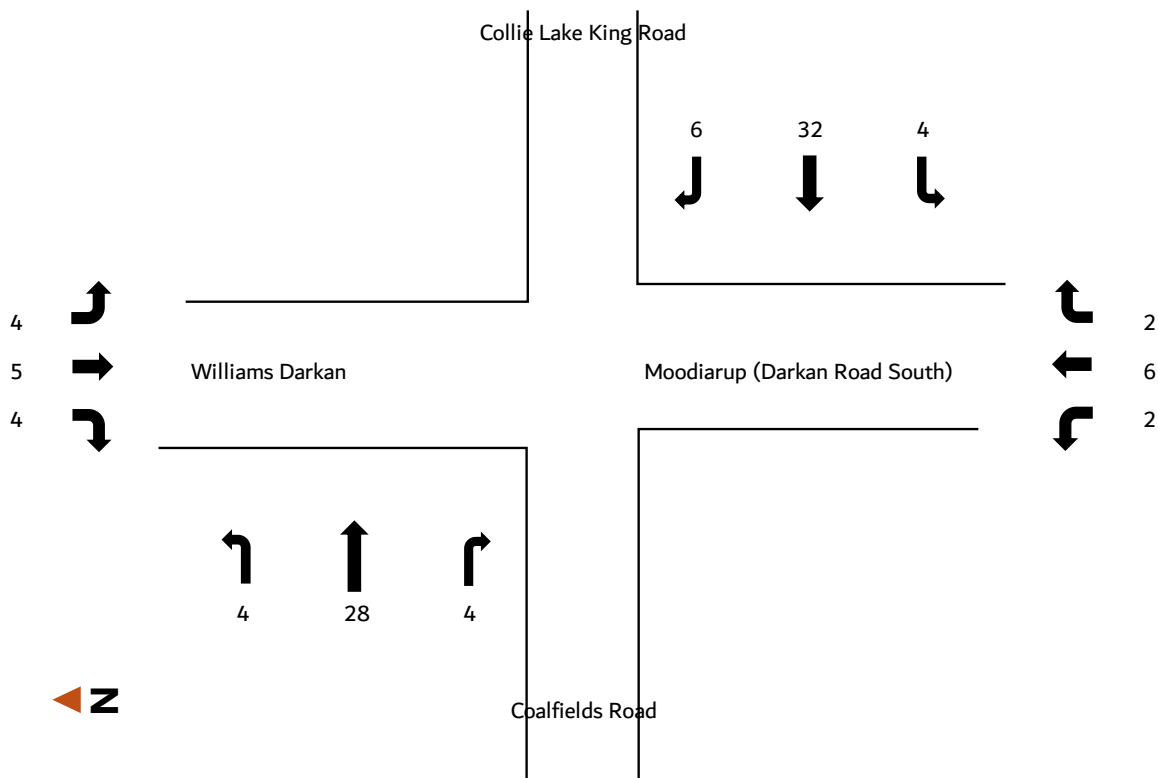


Figure 82 AM peak hour counts – Darkan Road intersection with Coalfields Road (source: Flyt)

7.3 Trip Generation

The level of traffic generation for the project has been compared against other similar projects by Flyt to provide assurance that the scale of movements and general profile of traffic associated with the project is appropriate. Given the nature of WTG and BESS projects, the volumes assessed have been undertaken on a daily basis to provide an indication as to overall traffic generation and potential impacts. Extensive site developments such as WTG and renewables projects have movements spread out on a daily basis and will fluctuate on a site by site basis as construction activities progress.

This assessment has been completed on the basis of a rolling construction program which is indicatively set as spanning over 2027-2030. The peak movements will be experienced when there are a number of sites on line, with construction trips peaking as materials are required. Other assumptions made in respect of this assessment are:

- Internal movements between project or WTG sites would largely be on internal tracks. The actual volume of movements to and from those areas would depend on WTG site construction requirements however the volume of movements on the internal network would not reach a level that requires any formal assessment
- The traffic around the main Operation and Maintenance compound may fluctuate more than other areas of the project due to the administrative and operational nature of the compound and requirement to access equipment and parts during construction
- The workforce would be contained within the accommodation compound off Cordering Road North. Therefore the overall volume of daily light vehicle trips would be lower than other similar development that rely on housing workforces in nearby towns such as Collie and Darkan. Most of the comparative information for traffic generation does include workforce trips, therefore some of the demands in the assessment may be overstated. In addition, movements to and from the accommodation area would be sporadic and outside of day peaks. It would be largely dictated by the project delivery program
- Heavy vehicle movements outside of the permit based deliveries associated with the WTG turbines are expected to come from Bunbury or Perth. This would include construction materials and manufactured components that would be required for the installation and connection of the WTG to the network. These would largely be on as-of-right trucks or those RAV trucks that are permitted on the network which is shown in Figure 50
- Other renewables projects which are discussed in section 8 would have their own construction timeframes but given the nature of these projects and the long lead times, no accumulated traffic flows on Coalfields Road have been assessed.

7.3.1 Traffic Generation - WTG

To inform the assessment, information has been extracted from a range of approved WTG projects around Australia, including some that are operational. These projects had program based traffic volumes reported and includes recent projects that have been approved.

Typically, WTG projects will apply an average or lower volume vehicle movement per day calculation based on internal quarrying, on-site worker accommodation and consideration of a rolling program of delivery around a broad geographical area with low potential for changing trip routes to and from a site (i.e. the most direct route will be taken to reduce distance driven). They will also have a peak calculation taking into account when the project will be at its busiest in terms of delivery and when there will be an overlap of activities around the Project Area.

These values have been set out in Table 2 and have been taken down to a number of vehicles per turbine per day ratio for application in this assessment.

Table 2 Wind Farm projects - stated vehicle movements - average and peak

Project	Wind Turbine Generators	Construction (Months)	Vehicles Per Day Per Turbine (Average)	Vehicles Per Day Per Turbine (Peak)
Kondinin	30	24	1.2	2.7
Flat Rocks	18	9	1.7	2.8
Rye Park	66	28	1.8	4.5
Murra Warra	116	23	1.4	4.0
Mount Hopeful	118	22	0.4	0.7
Narrogin	40	23	1.4	4.0
Parron	79	24	1.7	3.5

The average – or lower end volume of vehicles per day – is relatively consistent across projects, as is the peak vehicles per turbine per day level. Typically, the reporting of average vehicles per day uses the lower ratio for projects that have worker accommodation on site and then higher or peak vehicles per day for those projects that have worker accommodation off site.

For the purposes of this assessment, a direct comparison was made with the Narrogin Wind Farm project given it is a WA example of a similar project which is already approved. The average per WTG site was used for general movements and then additional internal movements used the maximum level – this is a conservative approach

West Arthur Wind Farm

and is likely overstating traffic generation. More detailed or refined movements would be included within the TMP. Those more refined traffic movement numbers would also resolve the delivery program to the Project Area which would be subject to a range of external influences.

The estimated profile by construction month of daily vehicle movements generated by the WTG element of the project is set out in Figure 83. This shows that the peak of construction activity that project traffic generation would sit at around 300 vehicle movements spread around the Project Area which would gradually increase as the project delivery goes from the western side of the area to the eastern side. As noted, many heavy vehicle movements would be via traffic management and then contained on site. The actual volumes would depend on sites being constructed and the activity into and out of compounds as well as the delivery program of turbine components.

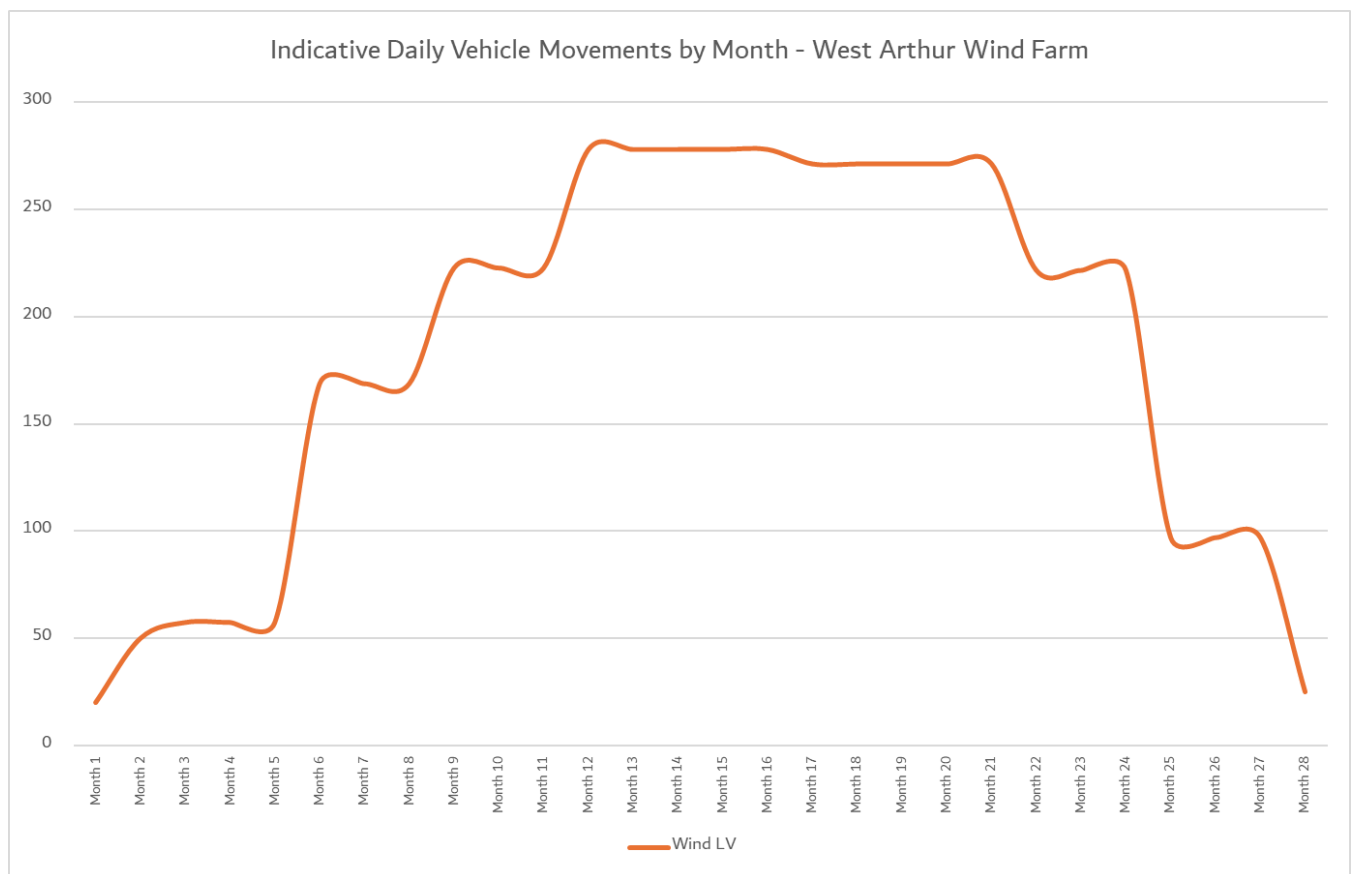


Figure 83 Estimated indicative daily vehicle movements for WTG at WAWF by construction month

The distribution of the trips has been based on assumptions around location of the WTG sites and routes for materials for the project. As above, they would be subject to change based on factors associated with project delivery and which WTG sites were being delivered at that time. The accumulated impact of vehicle trips and their distribution is discussed in section 7.3.3.

7.3.2 Traffic Generation - BESS

The BESS element of the project will result in traffic generation from the Project Area off Cordering Road North and the main traffic movements to and from site for the delivery of components and commissioning will generally be concentrated over the period of a year.

Typically for a BESS, there will be six key elements to the Project delivery program:

- Site establishment
- Civil works – construction
- BESS installation
- Electrical works
- Substation works
- Commissioning.

Estimated traffic movements associated with the Project Area for an average weekday throughout the construction and commissioning stage of the BESS component off Cordering Road North is shown in Figure 84. During the project development period the construction vehicle volume will vary significantly, with higher volumes likely where various stages of the BESS works overlap with WTG or project preparation works.

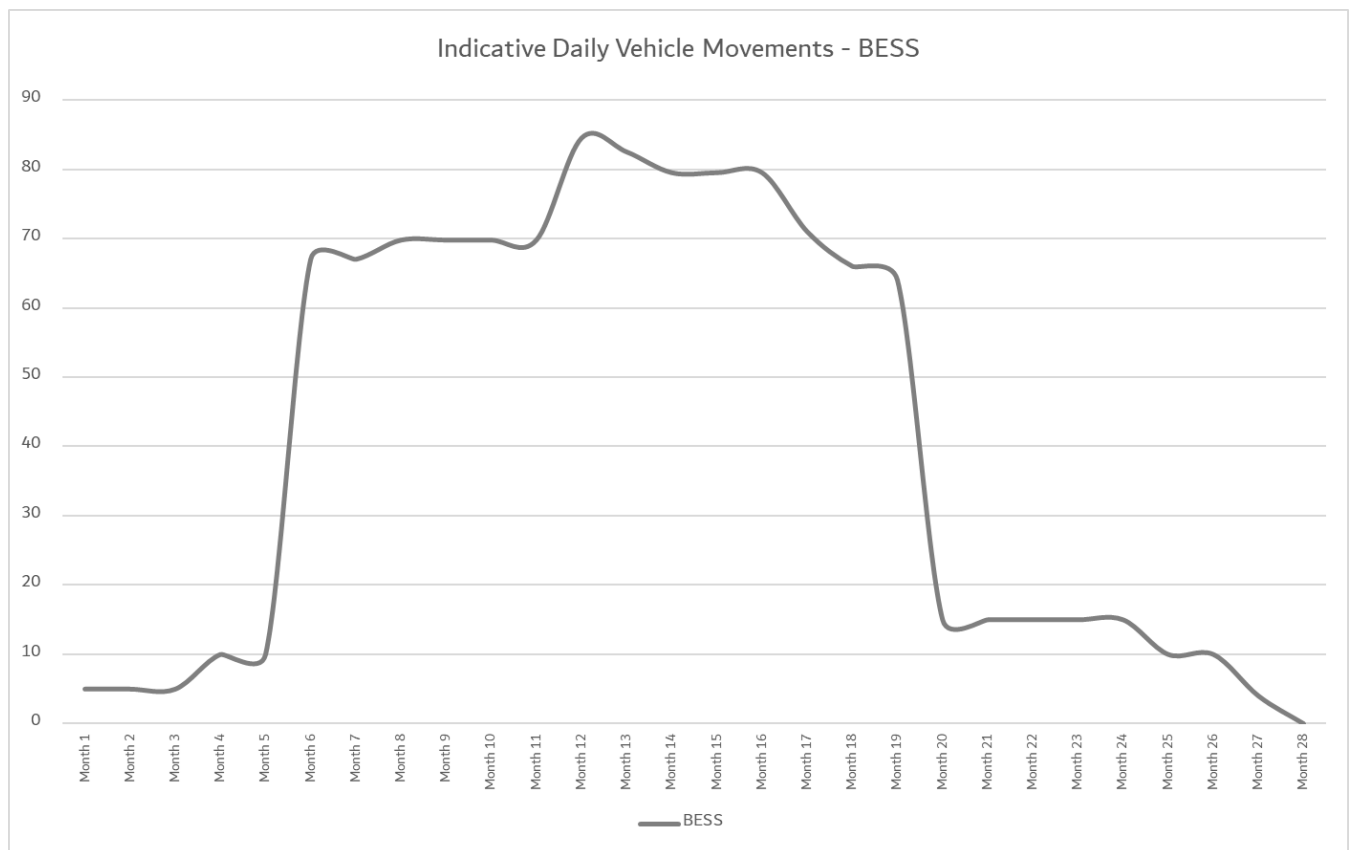


Figure 84 Estimated indicative daily vehicle movements for BESS at WAWF by construction month

7.3.3 Traffic Generation – Transmission Lines

For the construction tasks associated with transmission lines, there would be usage of the southern most access points for the Project Area off Cordering Road North. The traffic generation associated with the transmission line construction is minimal compared to the other elements of the project, with an estimated five vehicles per day per access point being a benchmark from similar projects. The spread of vehicle movements would also be sporadic depending on the tasks being completed on any given day.

7.3.4 Traffic Generation - Accumulative

The examination of the traffic volumes associated with the project looked at accumulative estimated traffic generation which is shown in Figure 85. The profile of the accumulative estimated traffic will vary depending on the delivery program however this estimated profile sets out likely weekday volumes based on the methodology set out in this assessment which has been based on a range of approved or delivered projects of a similar nature.

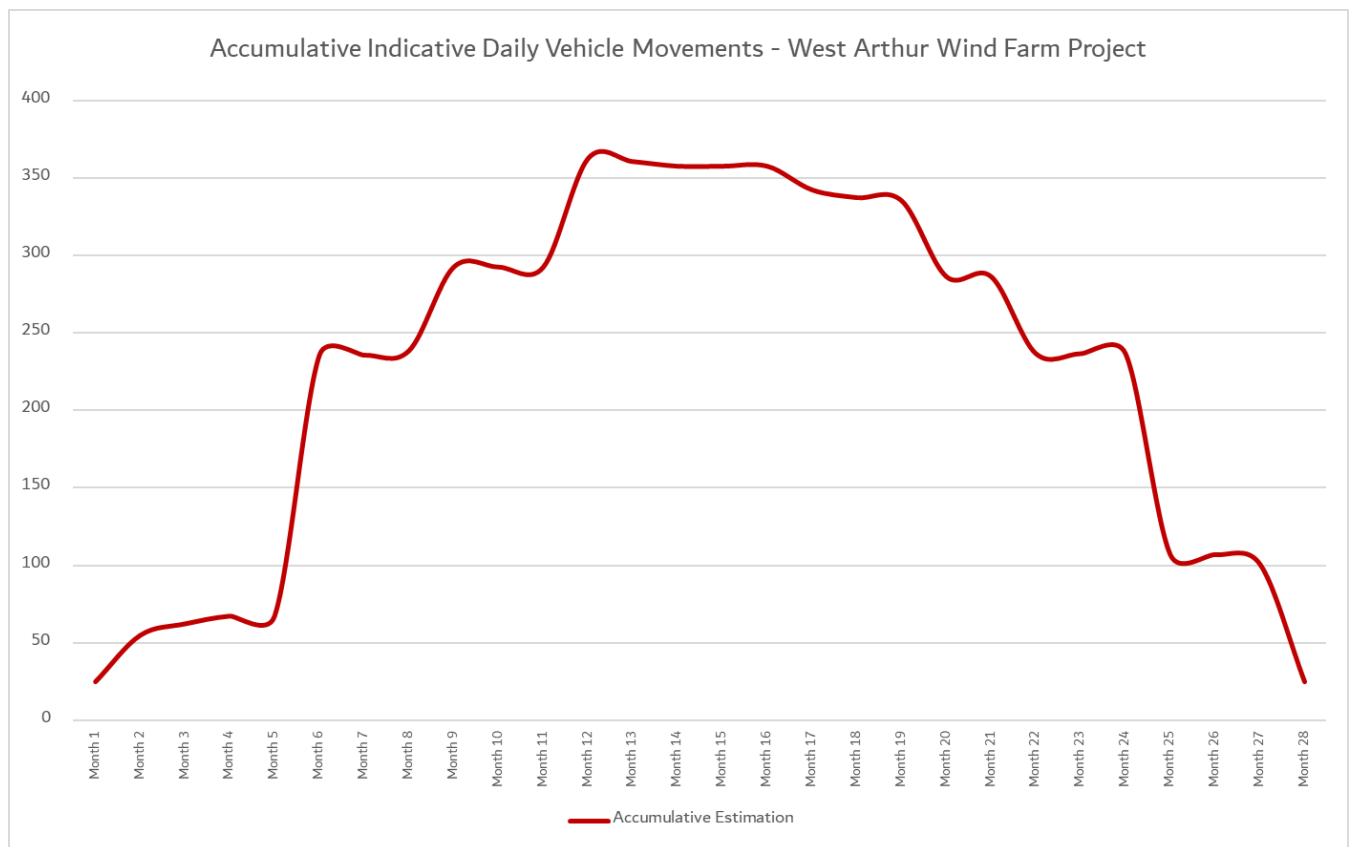


Figure 85 Estimated accumulative traffic generation by month for WAWF

Separately, the existing network weekday movements is shown in Figure 88 and estimated traffic generation on the surrounding network per geographical area of the project is shown in Figure 89 to Figure 93. These represent what could be a maximum level of movements in a day per road link for that stage of the project.

Given these are daily volumes set out within the assessment are estimated to peak at between 350-400 vehicles per day and the typical single direction capacity of a rural highway is 1,700 per hour, no capacity impacts on the network are expected as a result of the WAWF project at intersections or mid-block.

In relation to assessments, the WAPC Guidelines notes the following relating to traffic related impacts:

“As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where the development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis.”

Given that the surrounding network is comprised of rural highways with a one-directional flow rate of 1,700 vehicles per hour, the level of existing traffic combined with traffic associated with this Project, would not approach a total of 10% of the capacity, let alone an increase of over 170 vehicles per hour in any direction.

As such, the traffic impact of the Project is not considered significant in terms of volumes, with potential impacts related to types of traffic movements.

Notwithstanding that, localised impacts on sections of the network may be evident. This is particularly the case for the section of Cordering Road North between the end of the existing bitumen surface and the access point for the BESS / Operation and Maintenance compound and also the crossing point of Darkan Road.

Given the bitumenised section of Cordering Road North has only recently been extended southwards, the volume of potential traffic associated with the project would potentially justify the sealing of sections of the carriageway that are adjacent to the main development sites in the Project Area which is currently gravel as well as the crossing of Darkan Road.

This would serve a safety and operational purpose, as well as reflect the intent of Austroads Unsealed Road Manual 2009 which looks at the justification for sealing this sort of surface as being 250 vehicles per day. Given the location of most activity for movements would be around this location, the general length of Cordering Road North which could be sealed is reflected in Figure 86 with a stop sign control on either side of Cordering Road North to ensure safety compliance.

Separately, the Project Area access track crossing of Darkan Road should be sealed as per the Main Roads WA Driveway Policy with a stop sign control on the project access crossover approach. This would retain the integrity of the pavement on Darkan Road as well as ensure that the crossing would provide a safe location for movements in all conditions. This location is shown in Figure 87.

West Arthur Wind Farm



Figure 86 Recommended area for bitumenised seal on Cordering Road North



Figure 87 Recommended area for bitumenised seal on approach to Darkan Road

In relation to other crossing points, all heavy movements would be undertaken under traffic management and the volume of light vehicle movements would be low and not require additional treatment outside of potential

West Arthur Wind Farm

for signage to be installed on the north-south approaches to the crossings of Gibbs Road, Capercup Road North, Cordering Road North and Darkan Road. The access way on Schinzig Buller Road is a potential egress point only so no treatment is recommended.



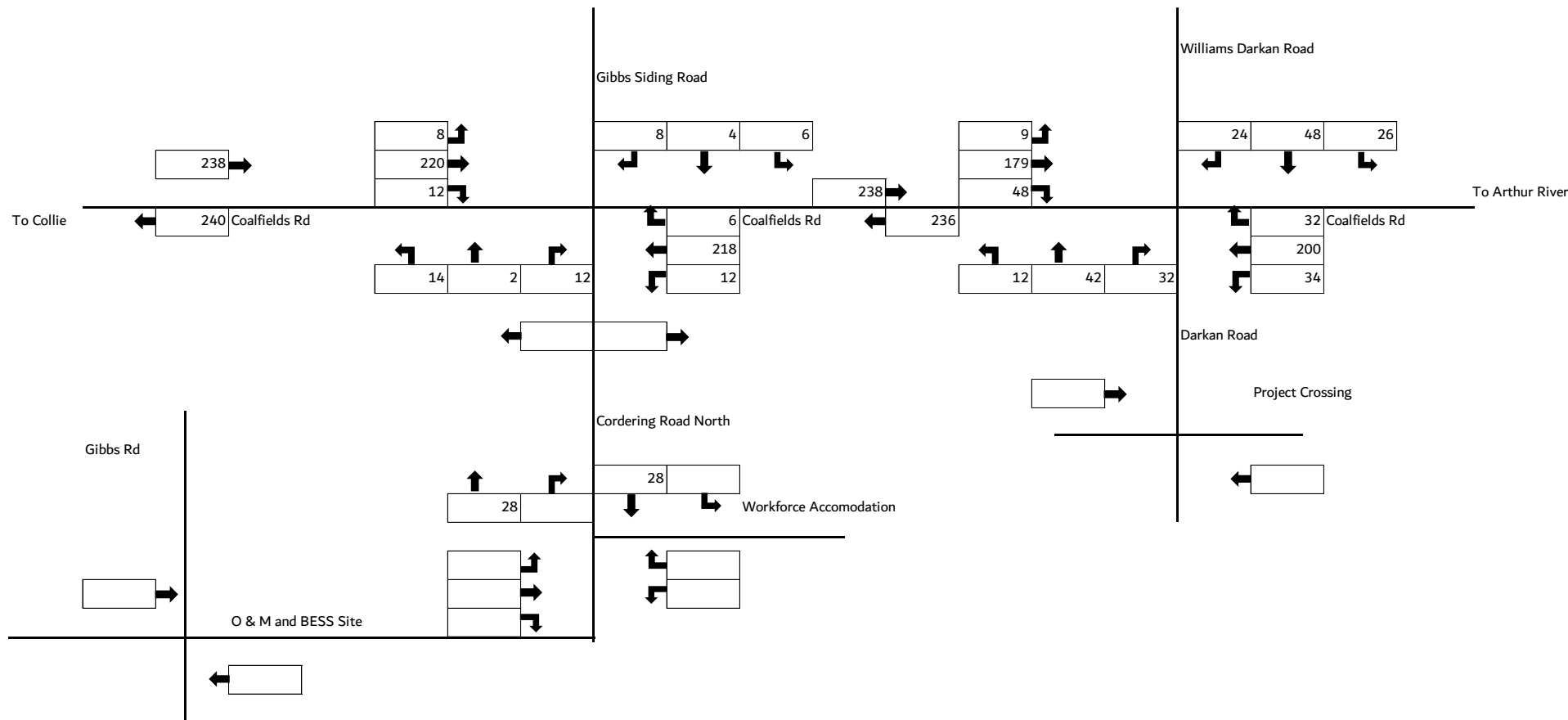
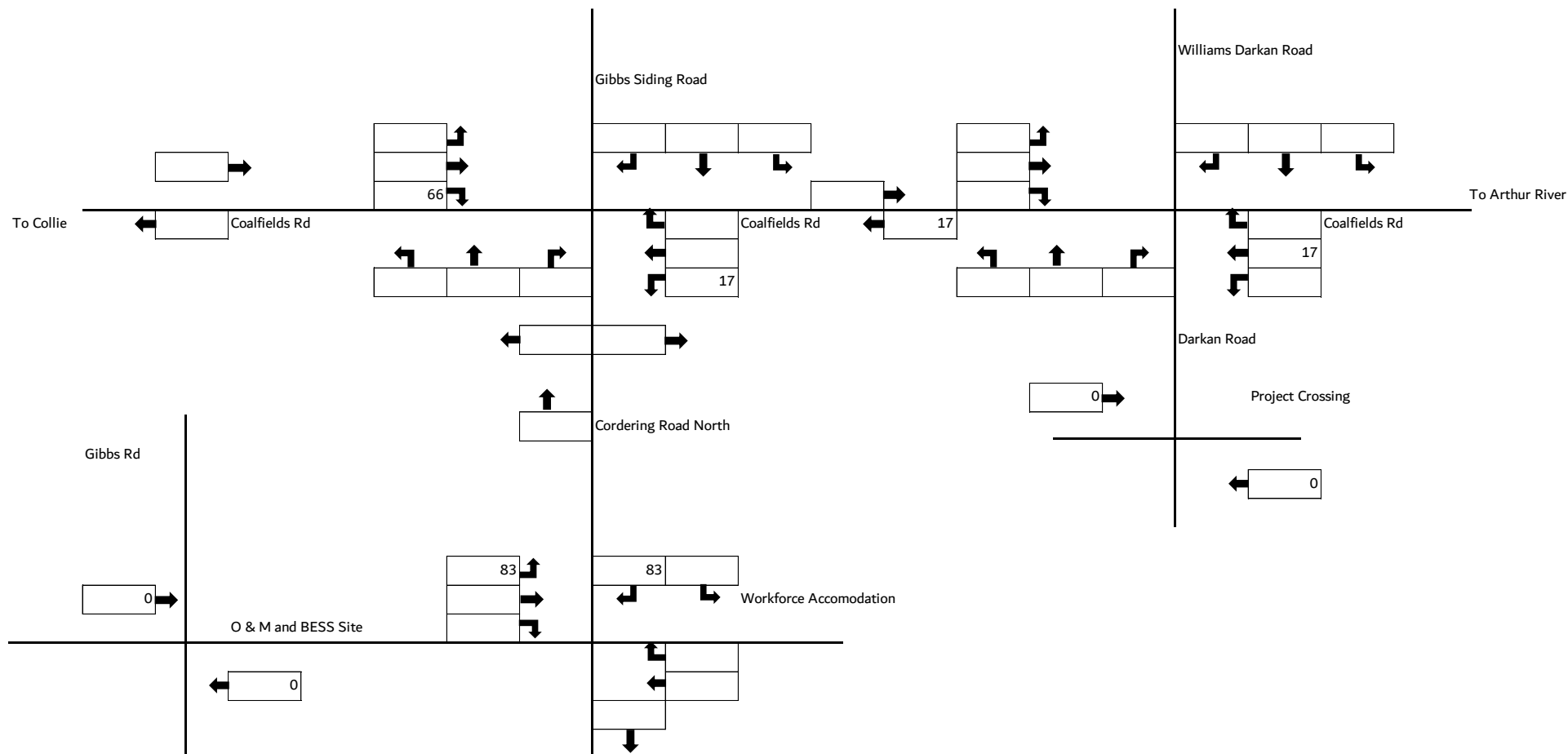


Figure 88 Existing average daily vehicle movements on network – WAWF



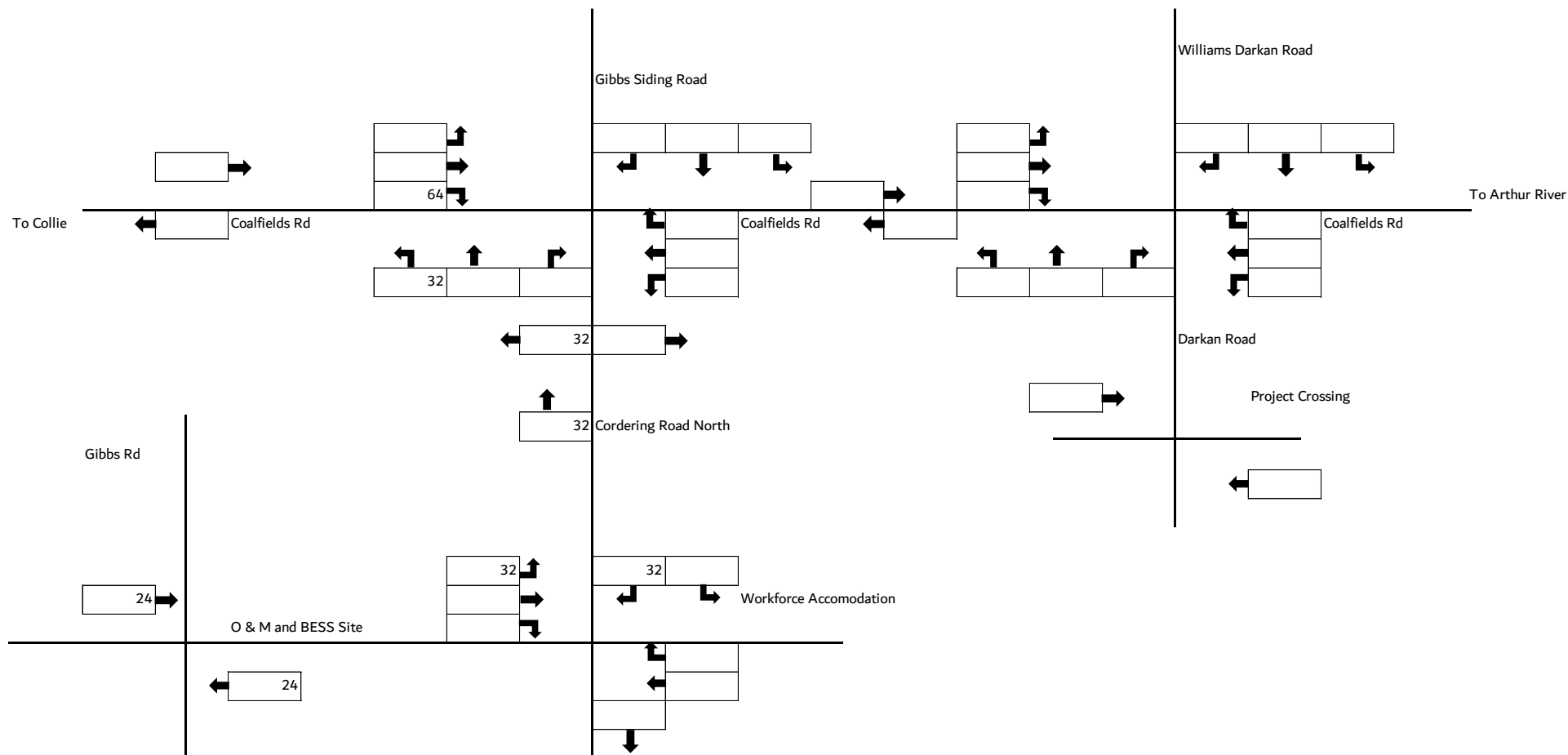


Figure 90 Indicative maximum daily vehicle movements on network – WTG west of Gibbs Road

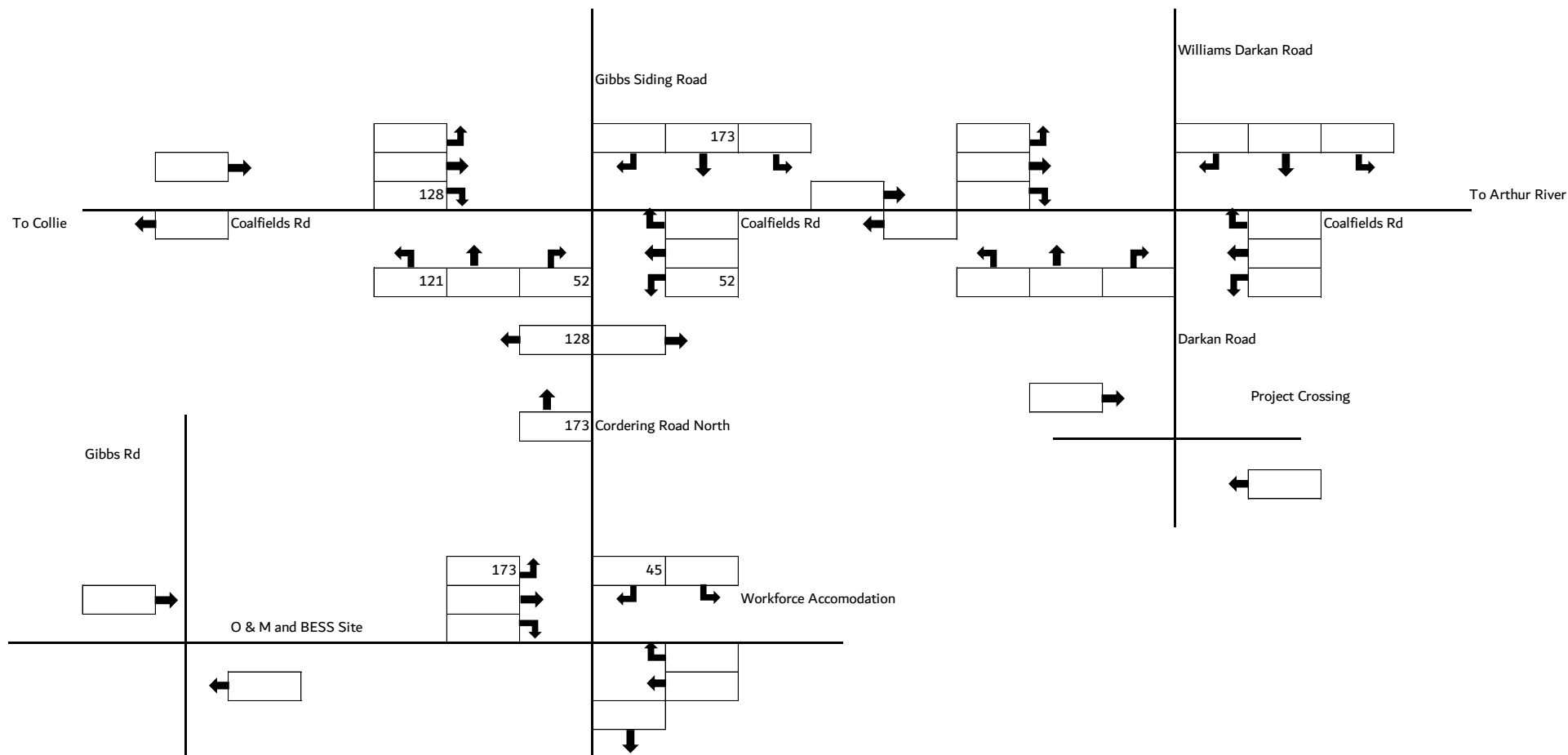


Figure 91 Indicative maximum daily project vehicle movements on network – WTG west of Cordering Road North

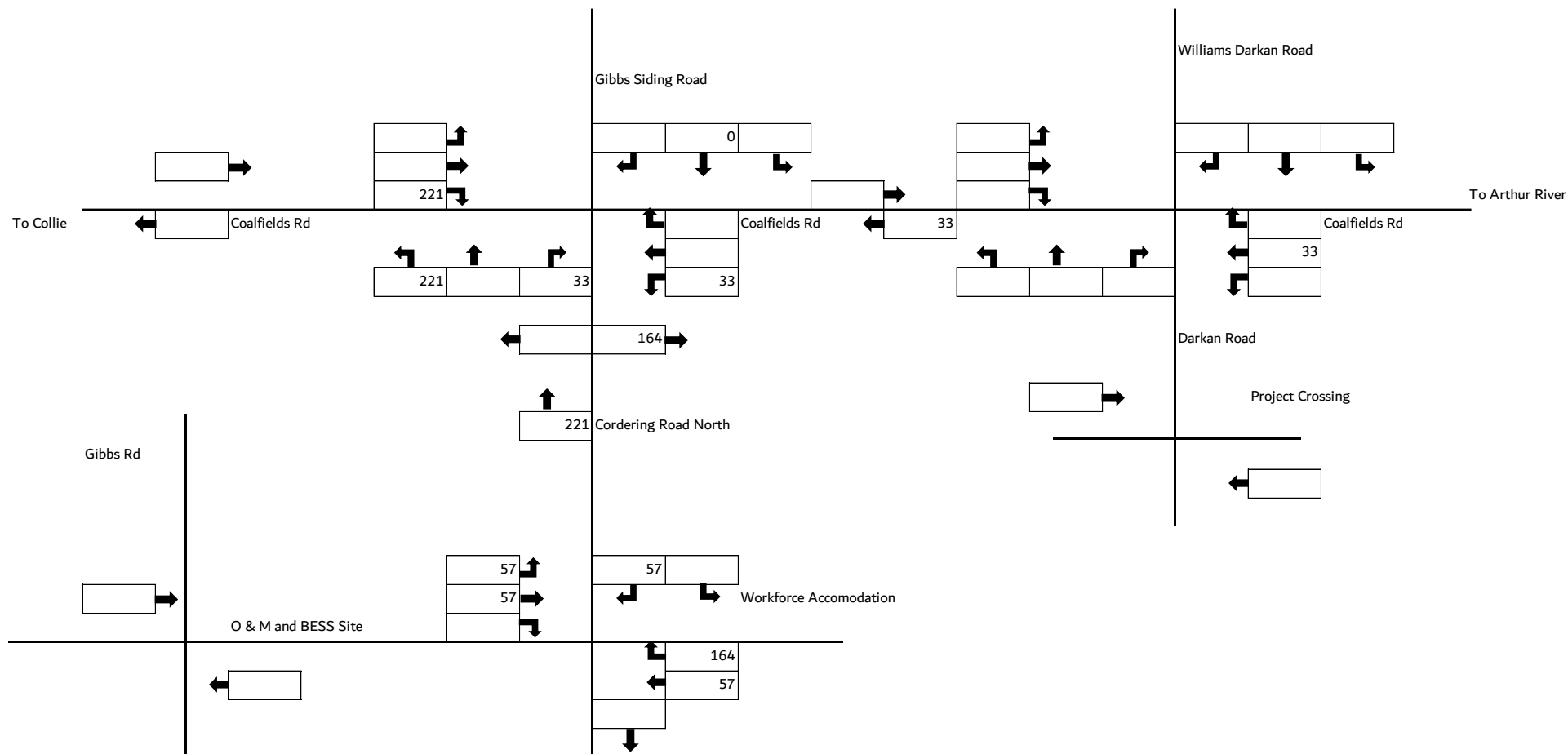


Figure 92 Indicative maximum daily project vehicle movements on network – WTG east of Cordering Road North

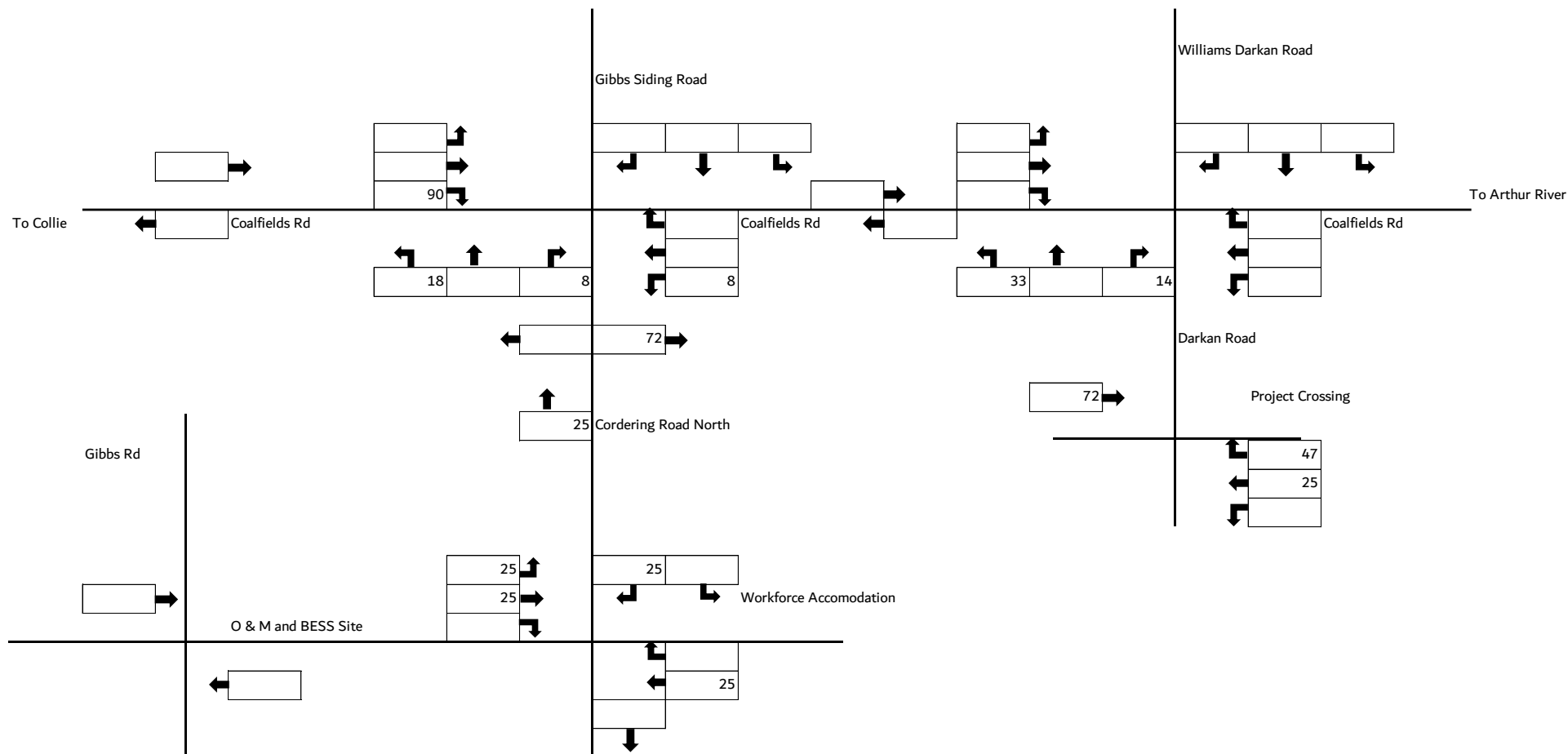


Figure 93 Indicative maximum daily project vehicle movements on network – WTG east of Darkan Road

7.4 Safe Intersection Sight Distance Analysis

Vehicle access points for the Project Area are discussed in section 6.1. The design of the overall internal network and the location of the access track crossing points has been to utilise current crossovers on the network or intersections. Given the nature of the project design, it would be recommended that Sight lines and Safe Intersection Sight Distance (SISD) be examined for the intersections on approach to the Cordering Road North (CR04 and CR06) and Darkan Road crossings (DA02) as well as the two new crossings associated with the transmission line construction element of the project at CR09 and CR10.

As set out Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections – “*SISD is the minimum sight distance which should be provided on the major road at any intersection.*” The calculation is largely a product of distance, speed and gradient.

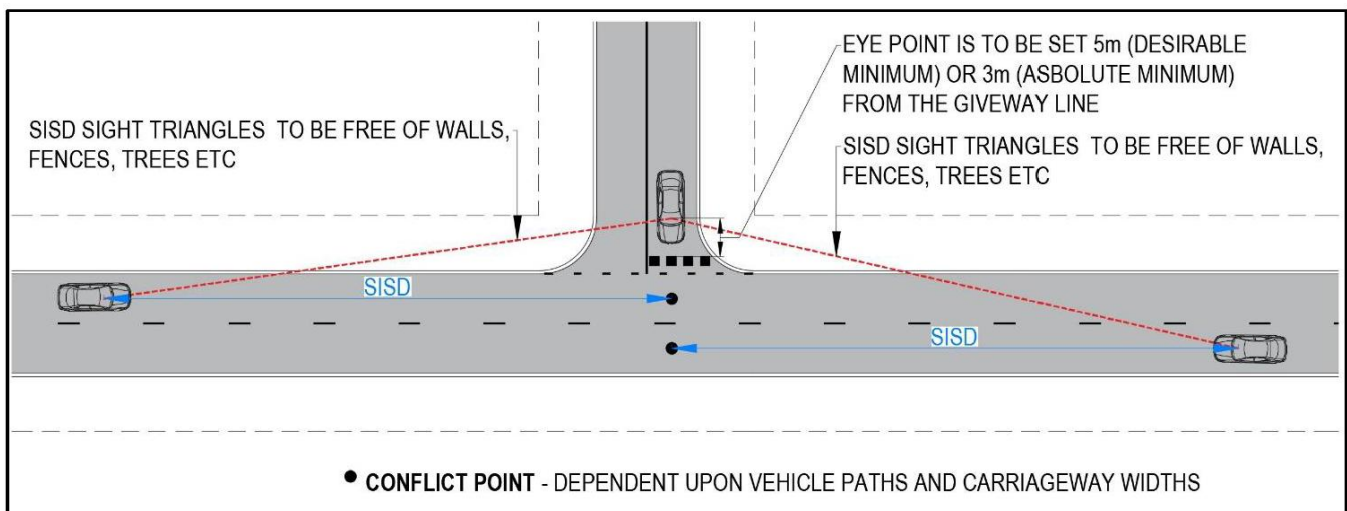


Figure 94 SISD drawings for intersections (source: Main Roads WA)

Noting that the network is largely comprised of rural roads or rural highways, the use of construction period traffic management would be a more appropriate means of addressing safety issues with sight distances at crossing points. This would be addressed within the TMP for the project.

7.5 Driveway Policy

Driveway construction – any access into the WAWF Project Area from the main Regional Distributor routes may be required to comply with Main Roads WA Driveway Policy (<https://www.mainroads.wa.gov.au/technical-commercial/technical-library/road-traffic-engineering/guide-to-road-design/additional-road->

[design2/driveways/](#)). This would include a temporary sealed crossover section at the intersection of the main carriageway.

It has been noted that this should apply to the main crossing points of Cordering Road North and Darkan Road as a minimum given the forecast volume of construction traffic associated with the project.

8. COMMITTED DEVELOPMENTS AND OTHER TRANSPORT PROPOSALS

8.1 Projects

As set out on the Shire of West Arthur website, there is significant investment in renewable energy projects planned within the local area:

"The Shire of West Arthur has been a focal point for renewable energy developers since April 2023. West Arthur is considered an ideal location for wind farm developments due to the ability of renewable energy generators to connect to the South West Interconnected System (SWIS) and its consistently positive wind test readings. The cleared freehold agricultural land in the Shire and the existing power lines running back to Collie present an opportunity for wind farm proponents."

To enable new renewable energy generation, new powerline infrastructure is planned, The Shire of West Arthur website says:

"Clean Energy Link - East

Western Power is delivering the network infrastructure needed to achieve the State Government's vision for WA as a world-leading renewable energy powerhouse. The network's transmission lines, and the wind and solar farms they will connect, will form one of the largest infrastructure, technology and construction transformations in Western Australia's history.

Western Power's network plays an important part in safely and reliably transferring more clean energy generated from wind and solar farms in regional areas to homes and businesses.

Clean Energy Link – East is a proposed project to expand the transmission network east of Collie, to connect new renewable generation sources to enable industry and the wider community to meet decarbonisation goals."

Stage 1 of Clean Energy Link - East project, as set out on the Western Power website, (as shown in Figure 95 adjacent to the site for this project) is progressing with the works comprising:

- *"a new terminal south of Darkan, providing a critical network connection point for renewable projects advancing in the area, unlocking significantly more clean energy.*
- *two new double-circuit 330kV transmission lines to connect the proposed new terminal back to the existing Muja and Shotts terminals".*

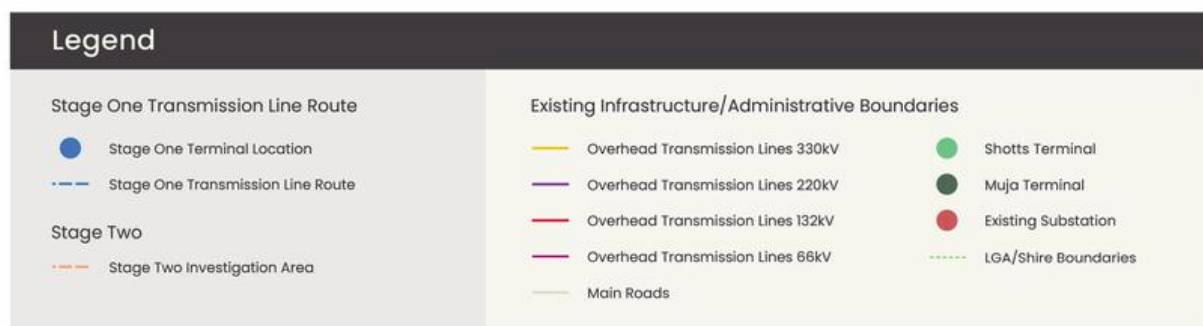
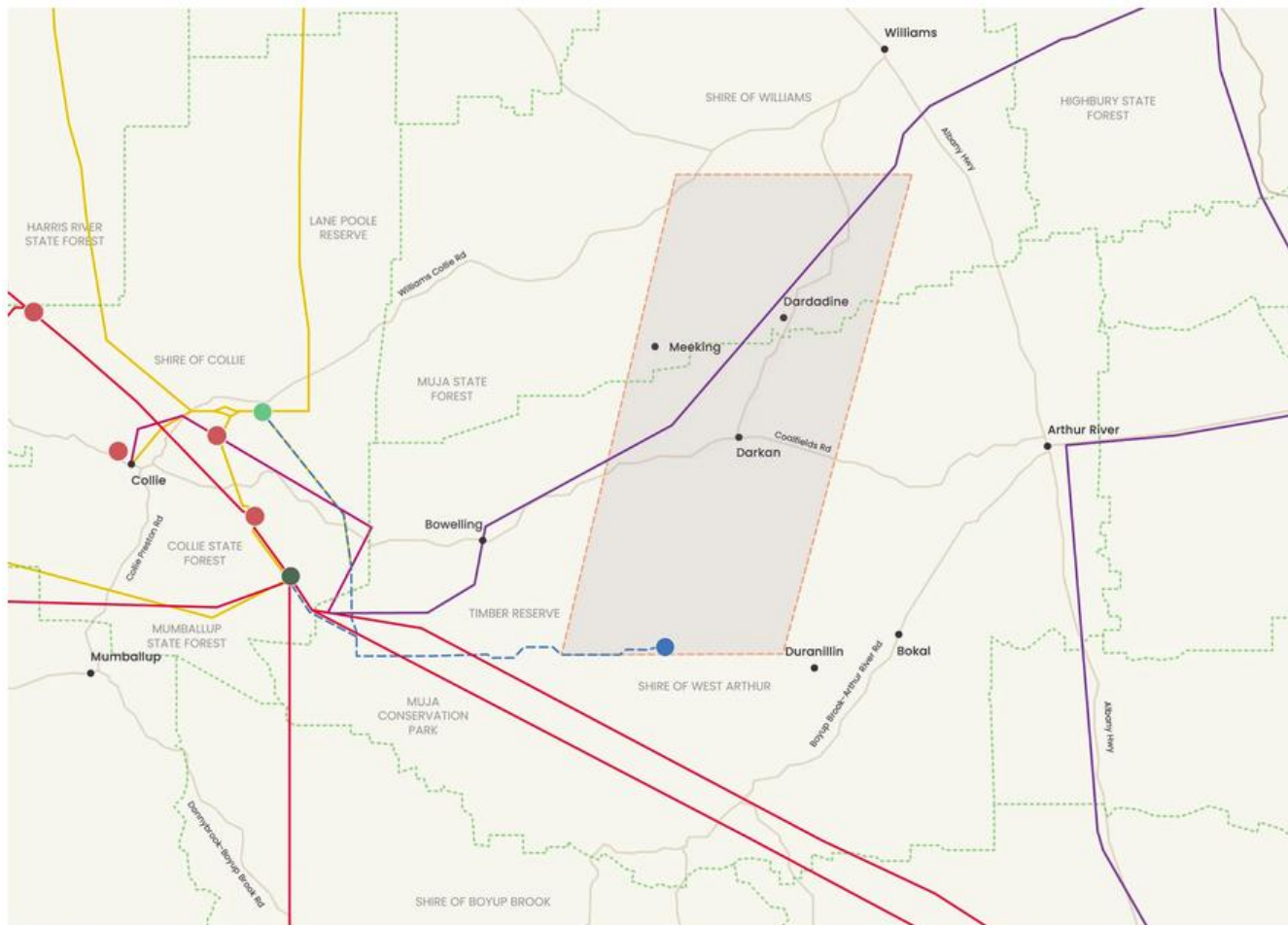


Figure 95 Project map Stage One of Clean Energy Link (source: Western Power)

The Clean Energy Link – East Stage 1 works allow for the connection of the West Arthur Wind Farm and Greenwind's Ambrosia project, located near Moodiarrup on similar timelines.

Stage 2 of Clean Energy Link East is expected to allow the connection of further projects within the area, however the expected timelines for those projects are post the construction of West Arthur Wind Farm and the Ambrosia project.

Within the wider region, the Narrogin Wind Farm project has already commenced construction and is likely to be completing construction at approximately the same time West Arthur Wind Farm commences, resulting in little expected cumulative impact on traffic in the region.

9. ROAD SAFETY

9.1 Crash Information

Main Roads WA crash data for the last five years was examined to understand if there were any issues apparent on the local network or adjacent to the proposed site accesses. These crash outputs are shown in Figure 96. The majority of crashes in this reporting period are along Coalfields Road which highlights the importance of addressing construction and operational staff movements.

There are no safety issues or crash patterns associated with existing usage of the network however the increase in movements associated with renewable energy projects in the area and the Wheatbelt will see an overall increase in traffic and therefore potential for additional issues. Within the project, the operational plans and safety plans should specifically address vehicle movements to and from the project. The TMP for the construction movements will include significant safety analysis and recommendations.

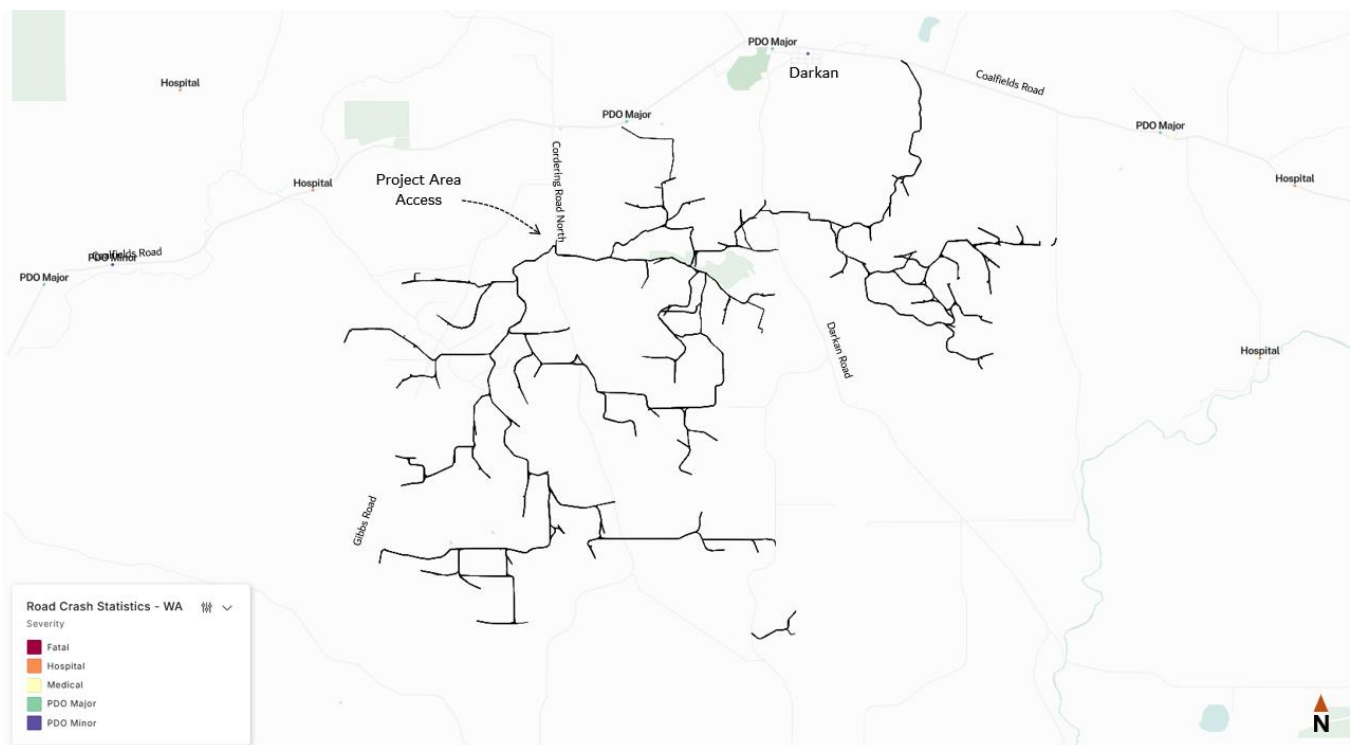


Figure 96 Crash information – 2020-2024 (source: Main Roads WA / Planwisely)

9.2 Project Requirements

The delivery of the project by West Arthur Energy would incorporate relevant Health and Safety requirements for its workforce for project access and operations, which would cover the range of risk elements associated with the transport network, including:

- Completion of appropriate Health and Safety Risk Assessment and management
- Induction on site for workforce to include appropriate safety measures and messaging around movement to and from the Project Area and travelling around internal access roads
- Provision of appropriate site vehicles and maintenance of vehicles
- Provision of appropriate safety equipment for working on site around internal road access
- Inclusion of relevant safety and risk assessment within the TMP component of the project construction
- Development and installation of appropriate safe access designs of the site crossovers in conjunction with requirements of Shire of West Arthur and Main Roads WA
- Completion of relevant risk and safety registers for the transportation of the renewable energy components to site
- Requirement for compliance of subcontractors to the relevant safety provisions.

Specific to the issues set out in this assessment, the project may also utilise time based restrictions on project vehicle movements when transporting components from Bunbury Port. That issue would be addressed within the WAWF TMP.

10. MITIGATION MEASURES

10.1 Mitigations

During the operational stage of the project, there will be minimal to no impact on the performance of the transport network. Relating to transportation of components and Project Area access, a range of mitigation measures would be appropriate, or conditions would be applied relating to the transport network. These measures are set out below:

- Completion of a detailed Traffic Management Plan (TMP) for the transportation of components to and from the Project Area as required. The TMP to cover the preferred route for HV movements to and from the Project Area taking into consideration the issues raised within this TIA
- Completion of all relevant permits and conditions of approval from Main Roads WA Heavy Vehicle Services (HVS) for transportation of components to the Project Area, including engagement with both Main Roads WA South-West and Wheatbelt Offices
- Completion of relevant work health and safety requirements for the project relating to the transportation of goods and materials and movement of employees to and from the Project Area
- Obtain approval for any road works considered as part of the project be as per Main Roads WA 'Procedure for Seeking Approval to Undertake Works within the Main Roads reserve
- Ensure no direct connection of the Workforce Accommodation site into Cordering Road North – access must be provided through the project access track that will run to the north and east of the site
- Ensure detailed design of the crossover into the main project Operations and Maintenance compound, BESS and Workforce Accommodation site take into account relevant design standards and requirements, including sight line assessment and appropriate design vehicle. It would be recommended to seal parts of Cordering Road North to maintain the surface integrity of the carriageway and cater for all-weather crossing movements as well as the main crossing point for Darkan Road
- Consider utilisation of project buses to move workforce around the Project Area when WTG sites to the west of Cordering Road North or east of Darkan Road are being worked on. This would reduce the overall volume of traffic using crossing points of the road network
- Develop travel information for workers accessing the Workforce Accommodation site so as to ensure that traffic is restricted to certain routes
- Ensure temporary parking area at the Operation and Maintenance compound and Workers Accommodation site be provided as required

- Engage with the PTA to discuss any implications for school routes on Darkan Road and Capercup Road North to ensure there are no impacts on school services. Movement of components or loads across those roads be limited to outside of peak times associated with school movements
- Undertake dilapidation surveys for all Shire of West Arthur controlled roads to allow project to maintain the roads in the equivalent standard during construction and return to at least that original state after construction
- Access point CO02 on Coalfields Road is used for emergency purposes only in event that it is required.

11. SUMMARY AND CONCLUSIONS

11.1 Summary

This Transport Impact Assessment (TIA) has been prepared by Flyt in support of the West Arthur Wind Farm (WAWF) (the project) proposed by West Arthur Energy. As indicated by the South West Aboriginal Land and Sea Council website; the project sits within the Gnaala Karla Booja ILUA Region.

The Project Area is located within the Shire of West Arthur, with the administration office based in Darkan. The project is considering up to 92 wind turbine generator (WTG) locations using 91m turbine blades with a maximum tip height of up to 253m and hub height of 160m. In addition, there will be a BESS as part of the project along with a range of other project based components – some of which will only be in place for construction purposes.

The Project Area is spread over an area of approximately 17km by 12km and has a number of roads running through or alongside the Project Area – most notably Cordering Road North and Darkan Road. The access strategy employed for the project will see the use of a single location off Cordering Road North for access either side by heavier vehicle movements associated with large indivisible components such as turbine blades and tower components. There will be a key access location off Cordering Road North for the main Operations and Maintenance compound, BESS facility and temporary Workforce Accommodation facility.

The project will have a total of 25 proposed connections into the existing road network with the majority of the proposed connections being existing field access tracks or crossovers. There would be seven proposed crossing points of the road network to allow for movement of components during the delivery stage. In addition, seven other connections may be used for exiting movements of empty trucks to reduce any issues on the internal network and crossing points or for right of way vehicle access. Four minor crossovers would be required to support construction of power transmission lines off Cordering Road North. There are 38 WTG sites to the west of Cordering North Road and 59 to the east.

The completion of a Traffic Management Plan for the transport task associated with the project construction would include additional details on truck configurations and movements at intersection points as required by Main Roads WA and the Shire of West Arthur.

The corridor between Bunbury Port and the Project Area has been assessed for the largest component being the 91m turbine blade. The corridor is suitable for purpose, with a number of minor mitigation measures proposed. These would all be captured and finalised within the TMP required for the construction stage of the project.

The overall level of traffic associated with the project can be accommodated within the existing network and the use of a Workforce Accommodation site will assist in reducing overall daily impacts associated with traffic on the local road network. Notwithstanding this, the volume of traffic generated throughout the project delivery stage will see a significant increase of volumes on the local network albeit not to a level that would result in any congestion impacts or requirement for works on the main intersections on Coalfields Road. The existing intersection with Cordering Road North is a high quality, substantial intersection that will see an upgrade to the east with the introduction of a passing lane. Cordering Road North has also recently seen the extension of the bitumenised surface available.

During the operational stage of the project, there will be minimal to no impact on the performance of the transport network. Relating to transportation of components and Project Area access, a range of mitigation measures would be appropriate, or conditions would be applied relating to the transport network. These measures are set out below:

- Completion of a detailed Traffic Management Plan for the transportation of components to and from the project as required. The TMP to cover the preferred route for HV movements to and from the Project Area taking into consideration the issues raised within this TIA
- Completion of all relevant permits and conditions of approval from Main Roads WA Heavy Vehicle Services (HVS) for transportation of components to the Project Area, including engagement with both Main Roads WA South-West and Wheatbelt Offices
- Completion of relevant work health and safety requirements for the project relating to the transportation of goods and materials and movement of employees to and from the Project Area
- Approval for any road works considered as part of the project be as per Main Roads WA 'Procedure for Seeking Approval to Undertake Works within the Main Roads reserve
- Ensure no direct connection of the Workforce Accommodation site into Cordering Road North – access must be provided through the project access track that will run to the north and east of the site
- Ensure detailed design of the crossover into the main site Operations and Maintenance compound, BESS and Workforce Accommodation site considers relevant design standards and requirements, including sight line assessment and appropriate design vehicle. It would be recommended to seal parts of Cordering Road North to maintain the surface integrity of the carriageway and cater for all-weather crossing movements as well as the main crossing point for Darkan Road
- Consider utilisation of project buses to move workforce around the Project Area when WTG sites to the west of Cordering Road North or east of Darkan Road are being worked on. This would reduce the overall volume of traffic using crossing points of the road network

- Develop travel information for workers accessing the Workforce Accommodation site so as to ensure that traffic is restricted to certain routes
- Provide temporary parking area at the Operation and Maintenance compound and Workers Accommodation site
- Engage with the PTA to discuss any implications for school routes on Darkan Road and Capercup Road North to ensure there are no impacts on school services. Movement of components or loads across those roads be limited to outside of peak times associated with school movements
- Undertake dilapidation surveys for all Shire of West Arthur controlled roads to allow project to maintain the roads in the equivalent standard during construction and return to at least that original state after construction
- Access point CO02 on Coalfields Road is used for emergency purposes only in event that it is required.

12. CHECKLIST

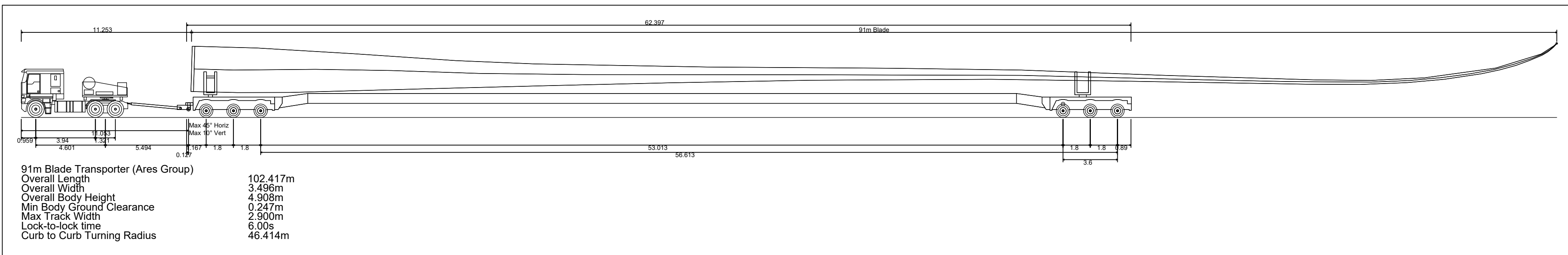
ITEM	PROVIDED	COMMENTS/PROPOSALS
Proposed development		
existing land uses	Yes	Rural land holdings
proposed land use	Yes	
context with surrounds	Yes	
Vehicular access and parking		
access arrangements	Yes	Routes in and around Project Area described
public, private, disabled parking set down/pick up		n/a
Service vehicles (non-residential)		
access arrangements		n/a
on/off-site loading facilities		n/a
Service vehicles (residential)		
rubbish collection and emergency vehicle access		n/a
Hours of operation (non-residential only)		n/a
Traffic volumes		
daily or peak traffic volumes	Yes	Estimated peak day volumes and hour volumes using example projects
type of vehicles (for example, cars, trucks)	Yes	RAV network issues covered, swept path for access of largest WTG components shown to illustrate capability of network to cater for turns.
Traffic management on frontage streets		Discussed, recommendations made on TMP and surfacing of Cordering Road North and Darkan Road
Public transport access		
nearest bus/train routes		n/a
nearest bus stops/train stations		n/a
pedestrian/cycle links to bus stops/train station		n/a

ITEM	PROVIDED	COMMENTS/PROPOSALS
Pedestrian access/facilities		
existing pedestrian facilities within the development (if any)		n/a
proposed pedestrian facilities within development		n/a
existing pedestrian facilities on surrounding roads		n/a
proposals to improve pedestrian access		n/a
Cycle access/facilities		
existing cycle facilities within the development (if any)		n/a
proposed cycle facilities within development		n/a
existing cycle facilities on surrounding roads		n/a
proposals to improve cycle access		n/a
Site specific issues		Addressed
Safety issues		
identify issues	Yes	Crash reporting examined and information provided.
remedial measures	Yes	Internal safety measures through design and management.

APPENDIX A

Swept Paths

ISO A1 594mm x 841mm



PROJECT STAMP

DRAWING SCALE

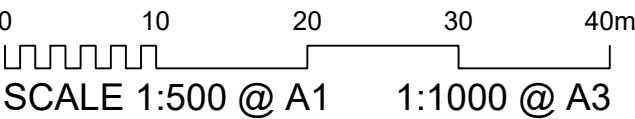
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INTERNAL PROJECT NO. FLY0125-003		
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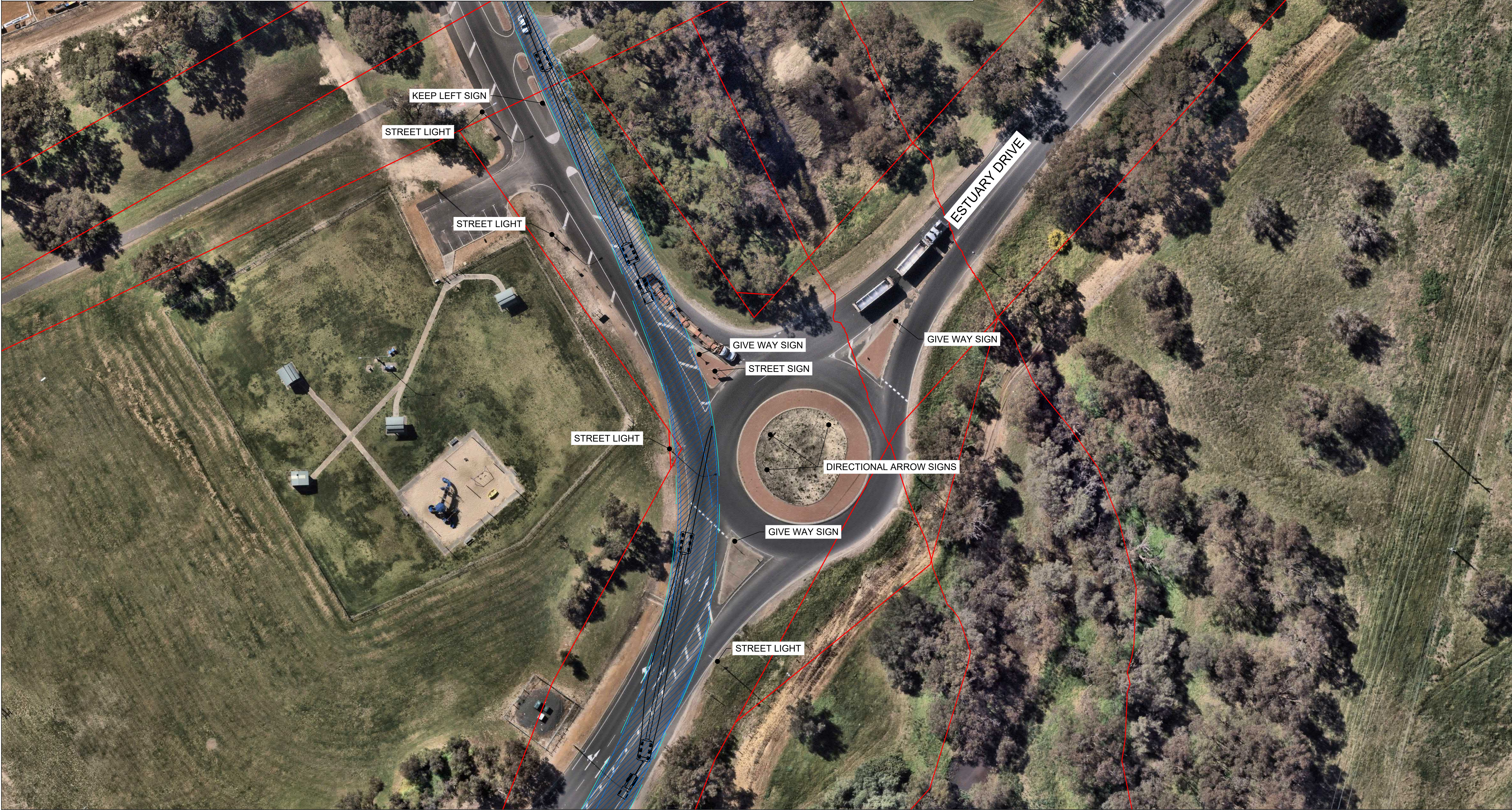
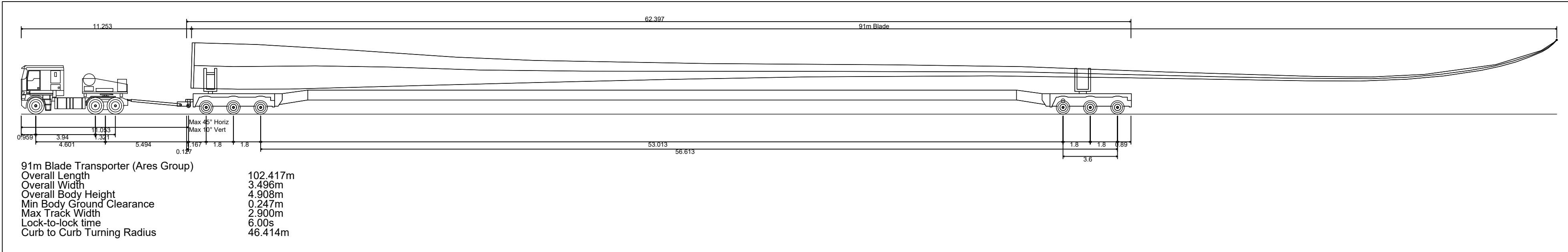


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CONSULTING

CLIENT FLYT PTY LTD
PROJECT WEST ARTHUR WIND FARM
TITLE 91M BLADE SWEPT PATH

DRAWING NUMBER FLY0125-003-BL-PP-01

REVISION A



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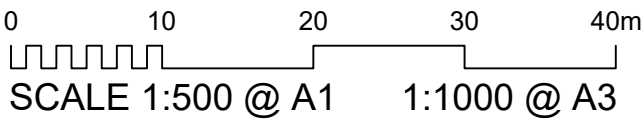
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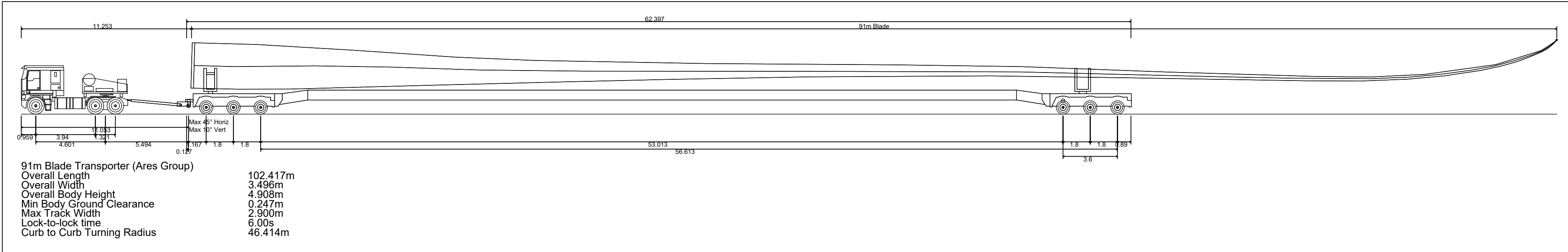


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TITLE 91M BLADE SWEPT PATH

DRAWING NUMBER
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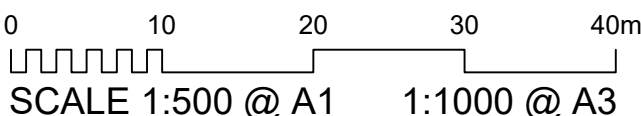
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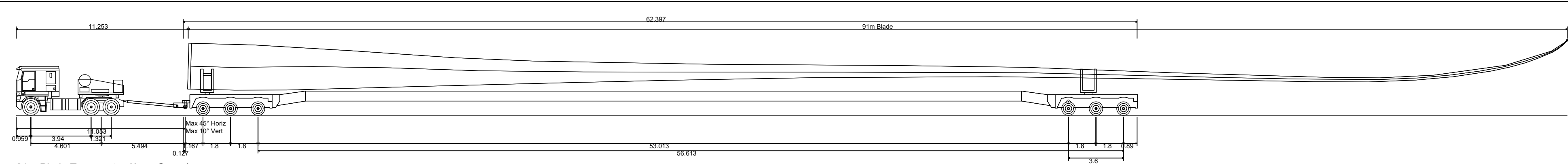
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TITLE 91M BLADE SWEEP PATH

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ISO A1 594mm x 841mm



91m Blade Transporter (Ares Group)
Overall Length 102.417m
Overall Width 3.496m
Overall Body Height 4.908m
Min Body Ground Clearance 0.247m
Max Track Width 2.900m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 46.414m



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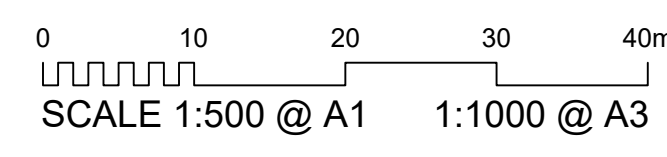
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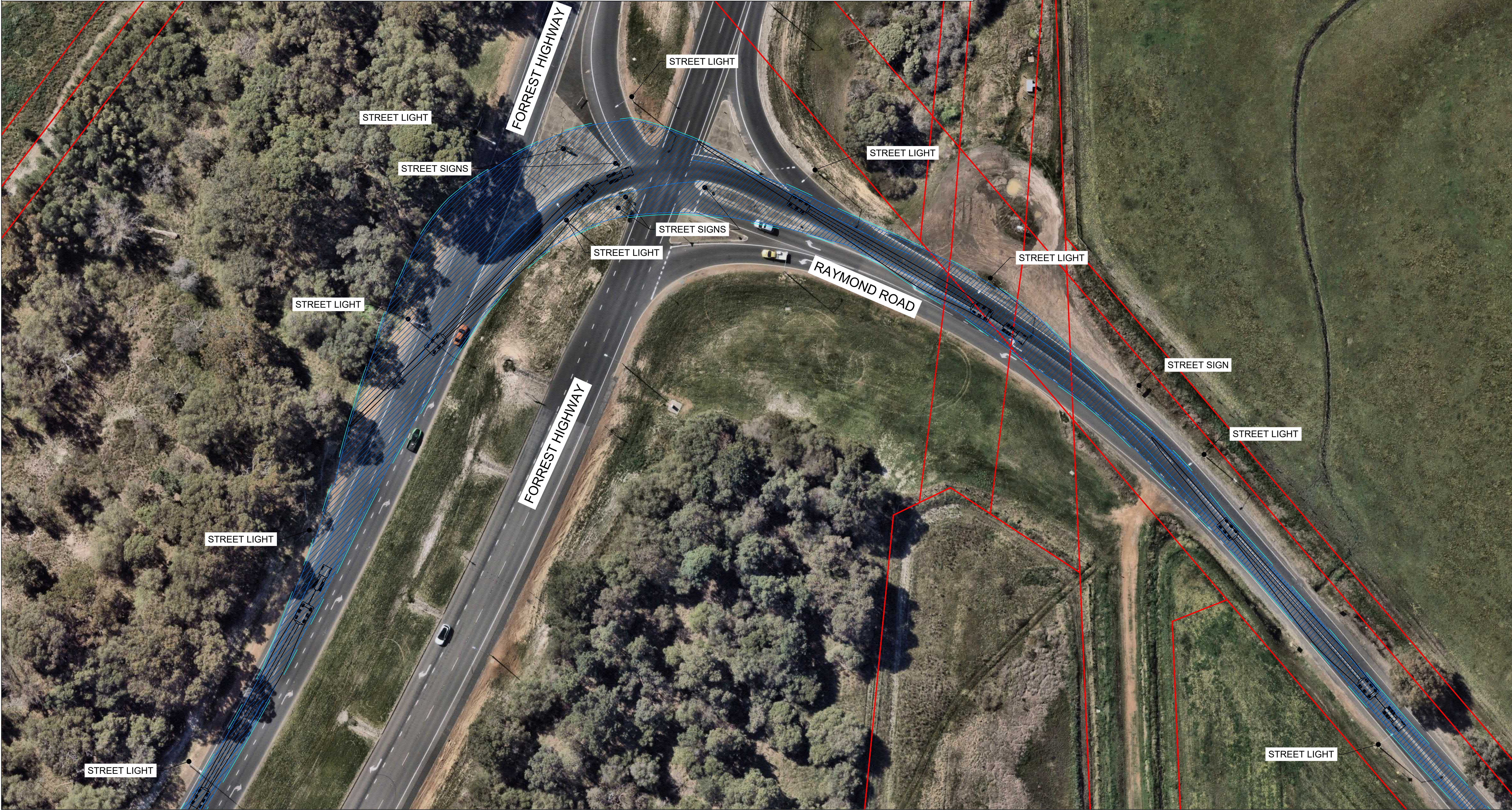
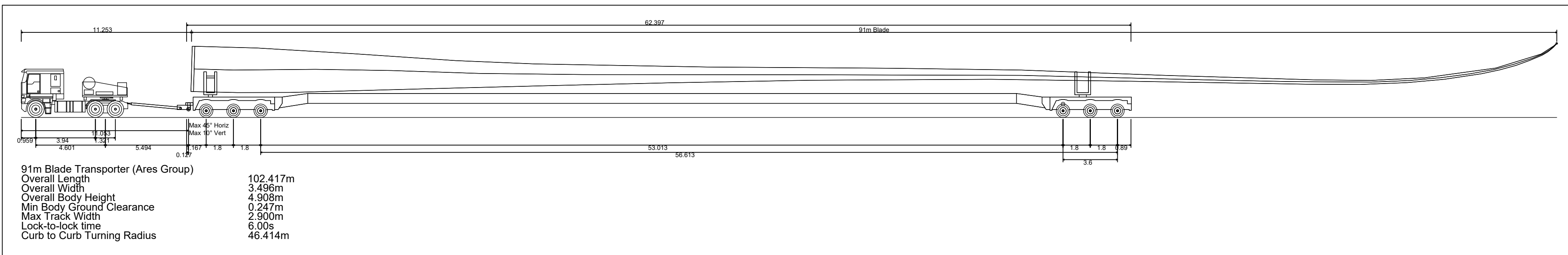
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TITLE 91M BLADE SWEEP PATH

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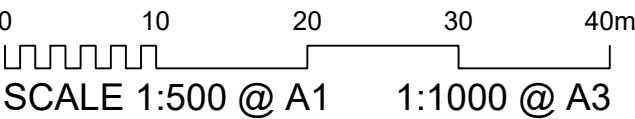
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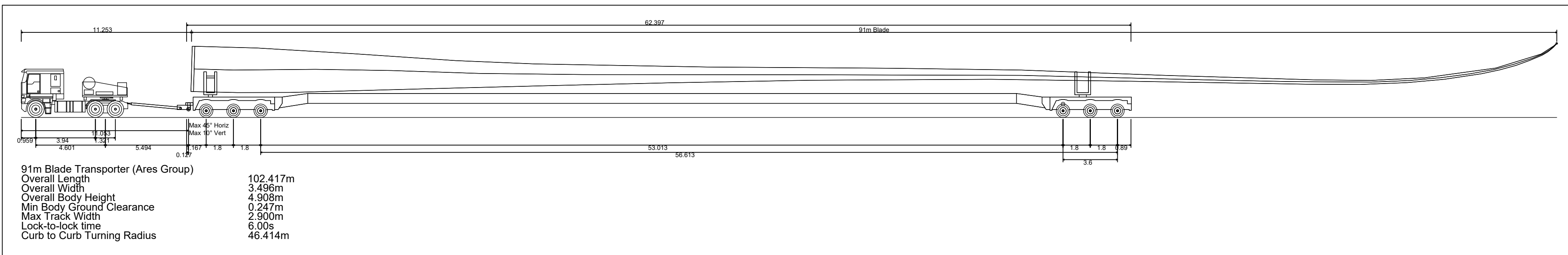


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TITLE 91M BLADE SWEEP PATH

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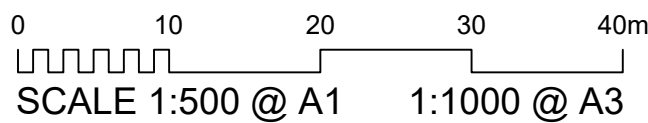
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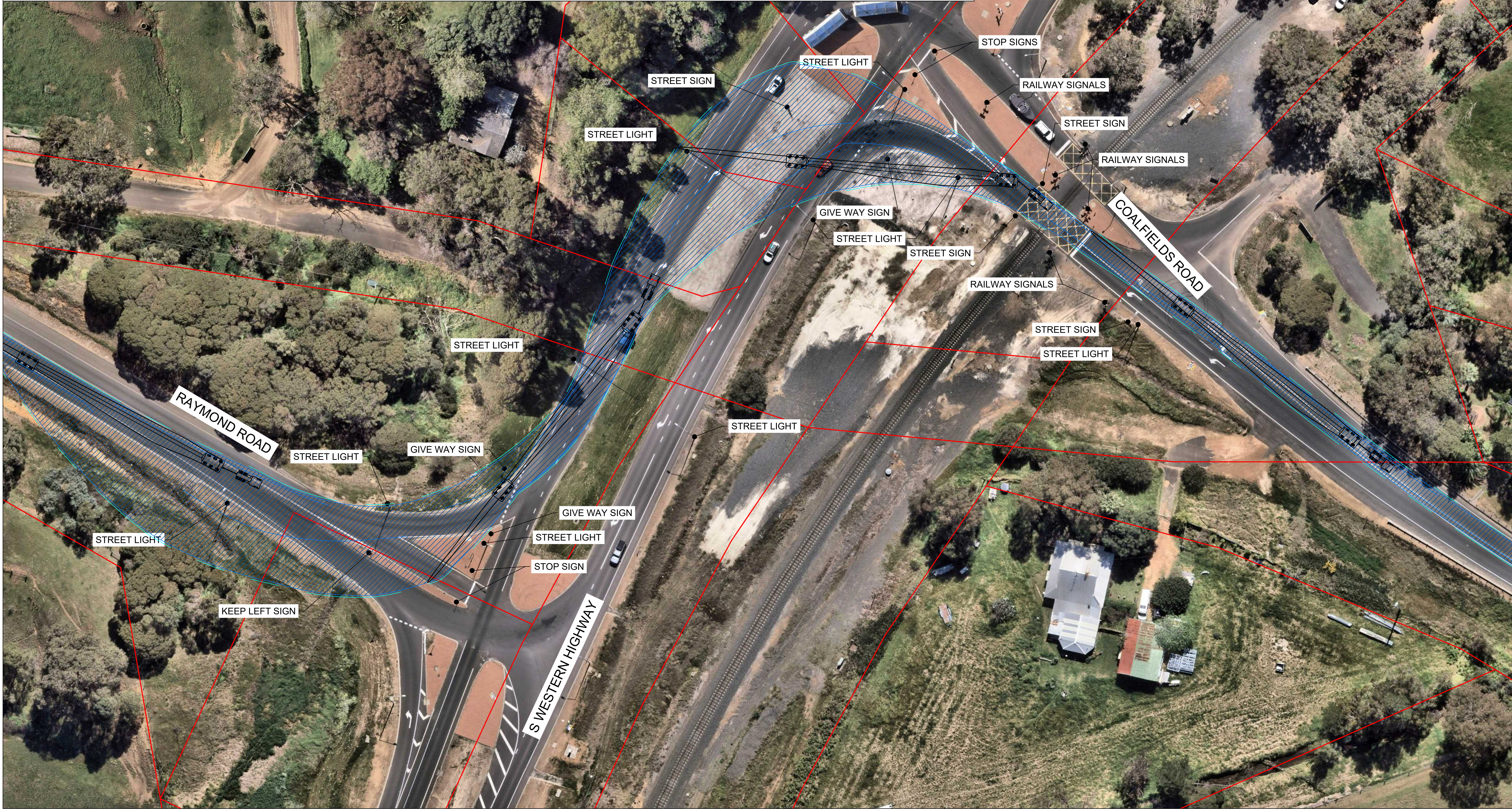
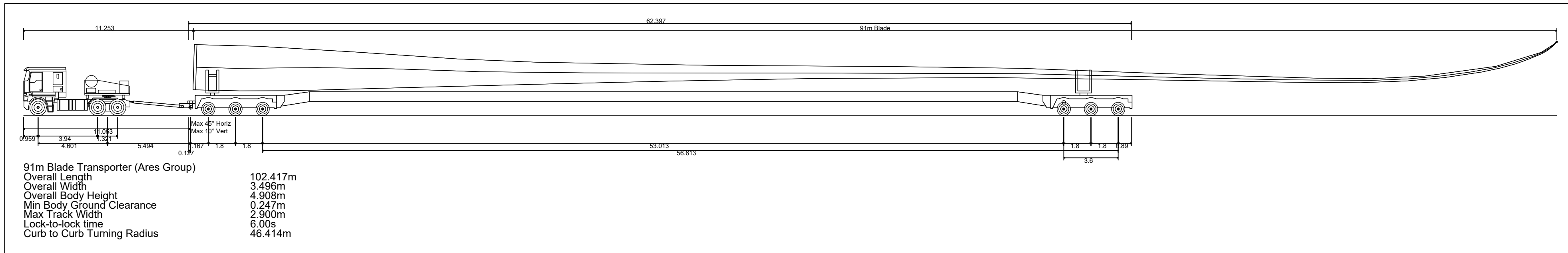


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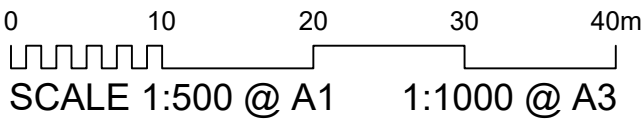
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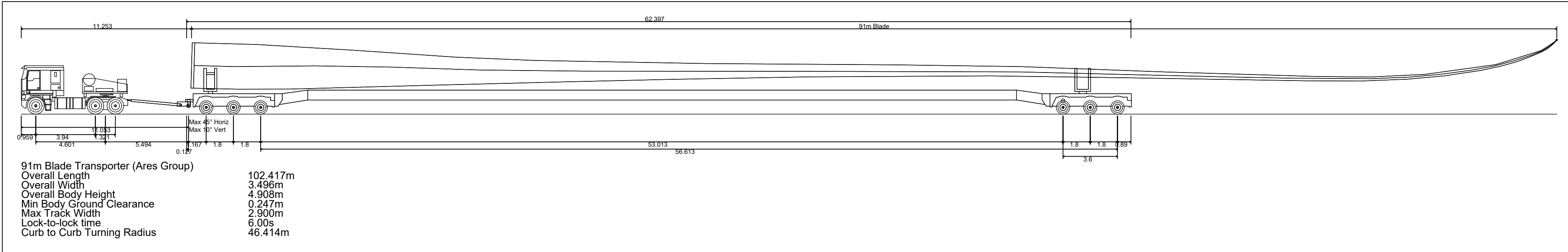


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TITLE 91M BLADE SWEPT PATH

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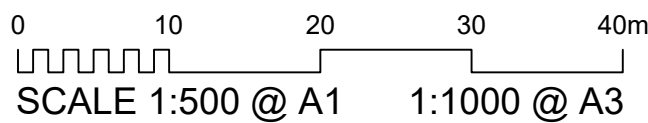
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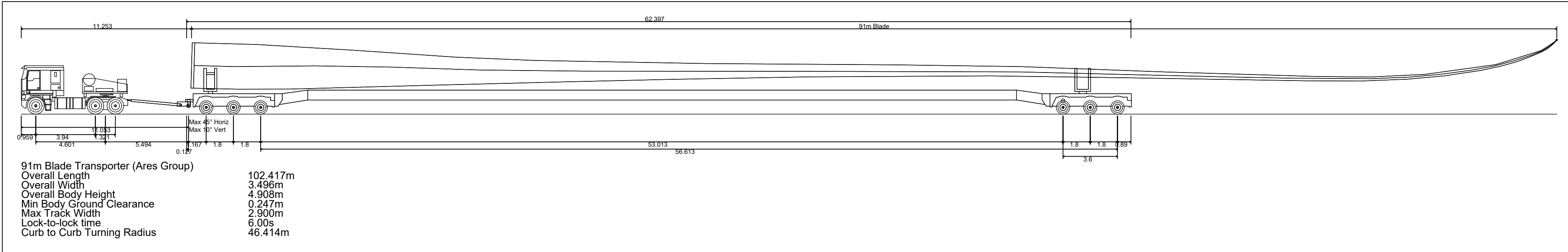
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TITLE

91M BLADE SWEEP PATH

DRAWING NUMBER
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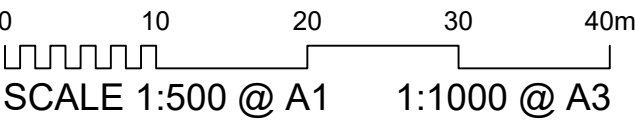
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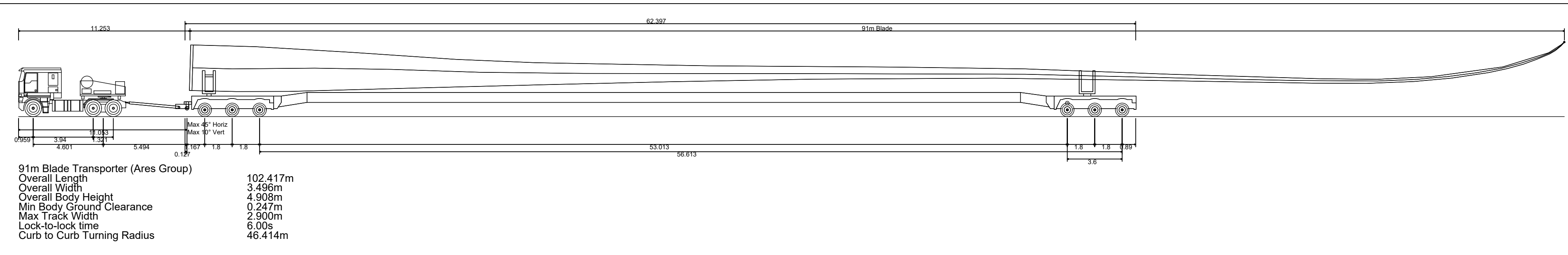
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TITLE

91M BLADE SWEPT PATH

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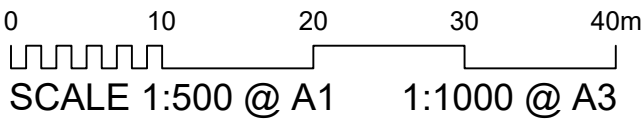
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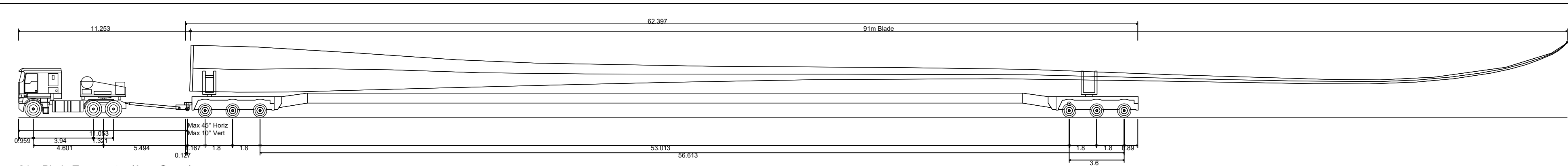
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TITLE 91M BLADE SWEPT PATH

DRAWING NUMBER FLY0125-003-BL-PP-13

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ISO A1 594mm x 841mm



91m Blade Transporter (Ares Group)
Overall Length 102.417m
Overall Width 3.496m
Overall Body Height 4.908m
Min Body Ground Clearance 0.247m
Max Track Width 2.900m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 46.414m



PROJECT STAMP

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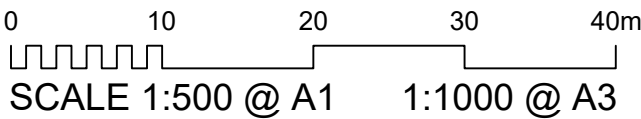
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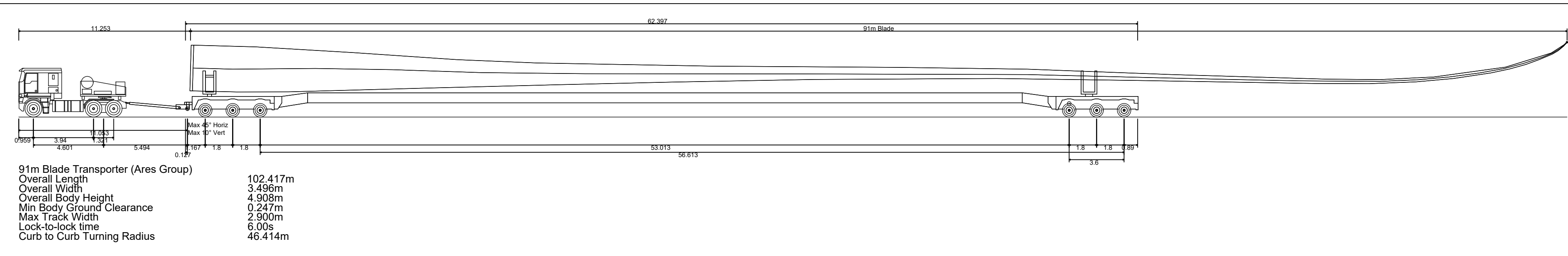


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PROJECT WEST ARTHUR WIND FARM
TITLE 91M BLADE SWEPT PATH

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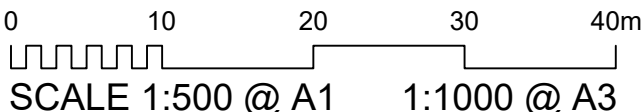
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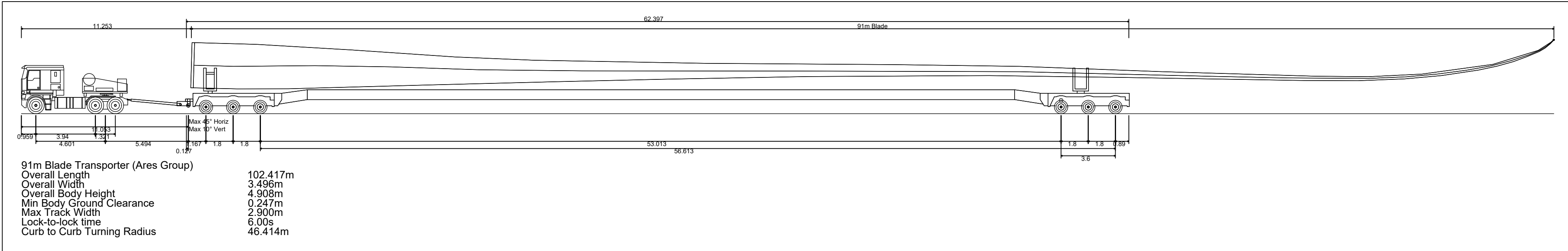


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PROJECT WEST ARTHUR WIND FARM
TITLE 91M BLADE SWEPT PATH

DRAWING NUMBER
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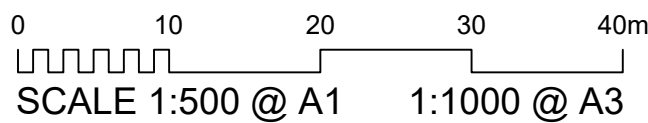
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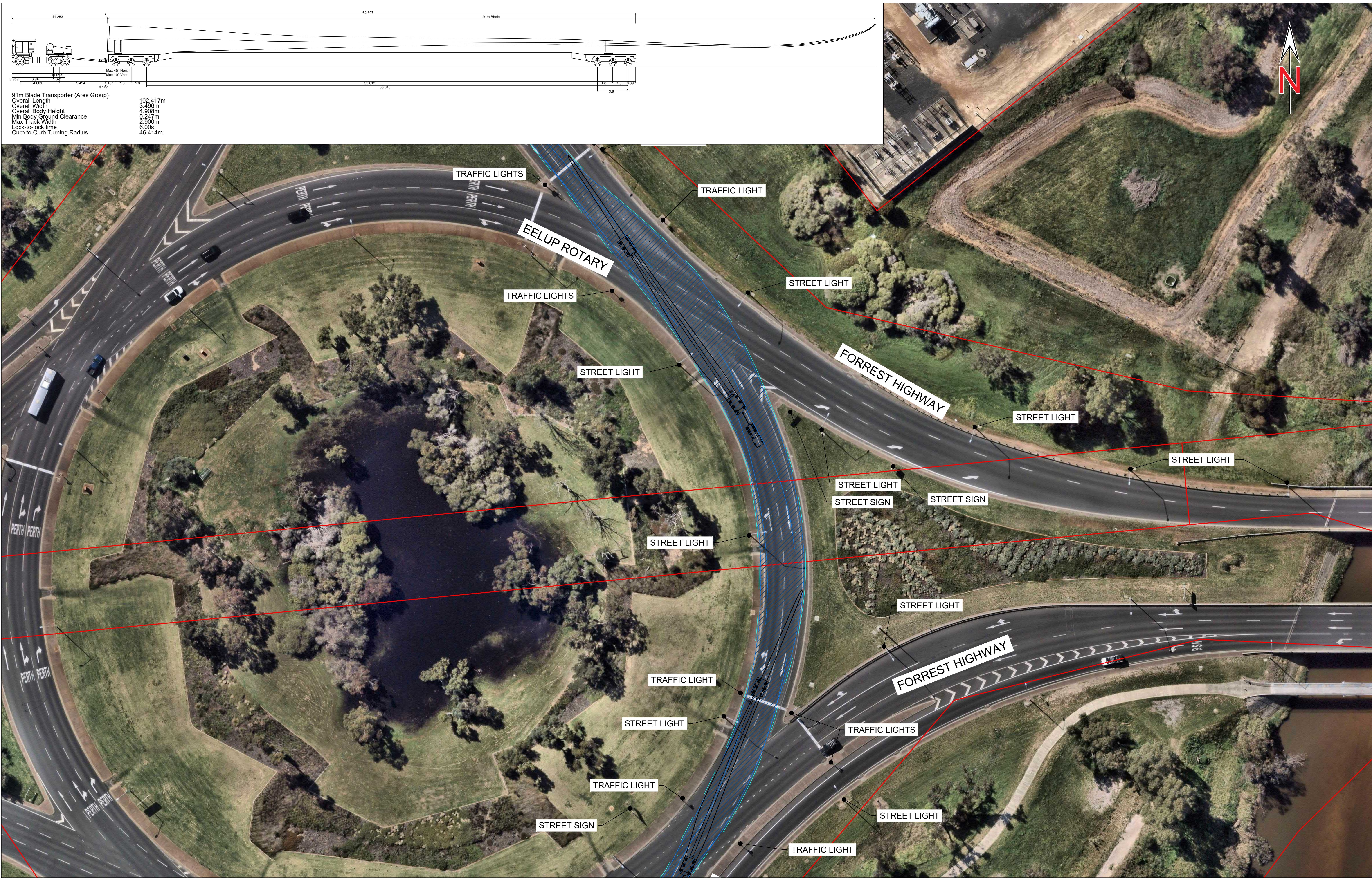
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PROJECT WEST ARTHUR WIND FARM
TITLE 91M BLADE SWEPT PATH

DRAWING NUMBER
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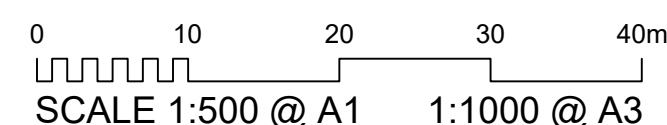
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91m Blade Transporter (Ares Group)	
Overall Length	102.417m
Overall Width	3.496m
Overall Body Height	4.908m
Min Body Ground Clearance	0.247m
Max Track Width	2.900m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	46.414m



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PROJECT	WEST ARTHUR WIND FARM
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91M BLADE SWEEP PATH ALT ROUTE

DRAWING NUMBER
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This aerial photograph shows a complex road intersection with several technical annotations. The roads are labeled: PICTON ROAD (top left), ROBERTSON DRIVE (top center), S WESTERN HIGHWAY (bottom left), and S WESTERN HIGHWAY (bottom right). The intersection features traffic lights and give way signs. Street lights are marked along the roads, and power poles are indicated. A speed sign is also visible. The surrounding area includes green fields, trees, and some residential buildings. Red lines delineate property boundaries or planning zones. Blue lines and arrows indicate traffic flow and lane markings. The annotations are as follows:

- TRAFFIC LIGHTS (at the intersection of PICTON ROAD and ROBERTSON DRIVE)
- GIVE WAY SIGN (at the intersection of PICTON ROAD and ROBERTSON DRIVE)
- STREET LIGHT (along ROBERTSON DRIVE)
- GIVE WAY SIGN (along ROBERTSON DRIVE)
- STREET LIGHT (along S WESTERN HIGHWAY)
- POWER POLE (along S WESTERN HIGHWAY)
- SPEED SIGN (along S WESTERN HIGHWAY)
- POWER POLE (along S WESTERN HIGHWAY)

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0 10 20 30 40m
SCALE 1:500 @ A1 1:1000 @ A3

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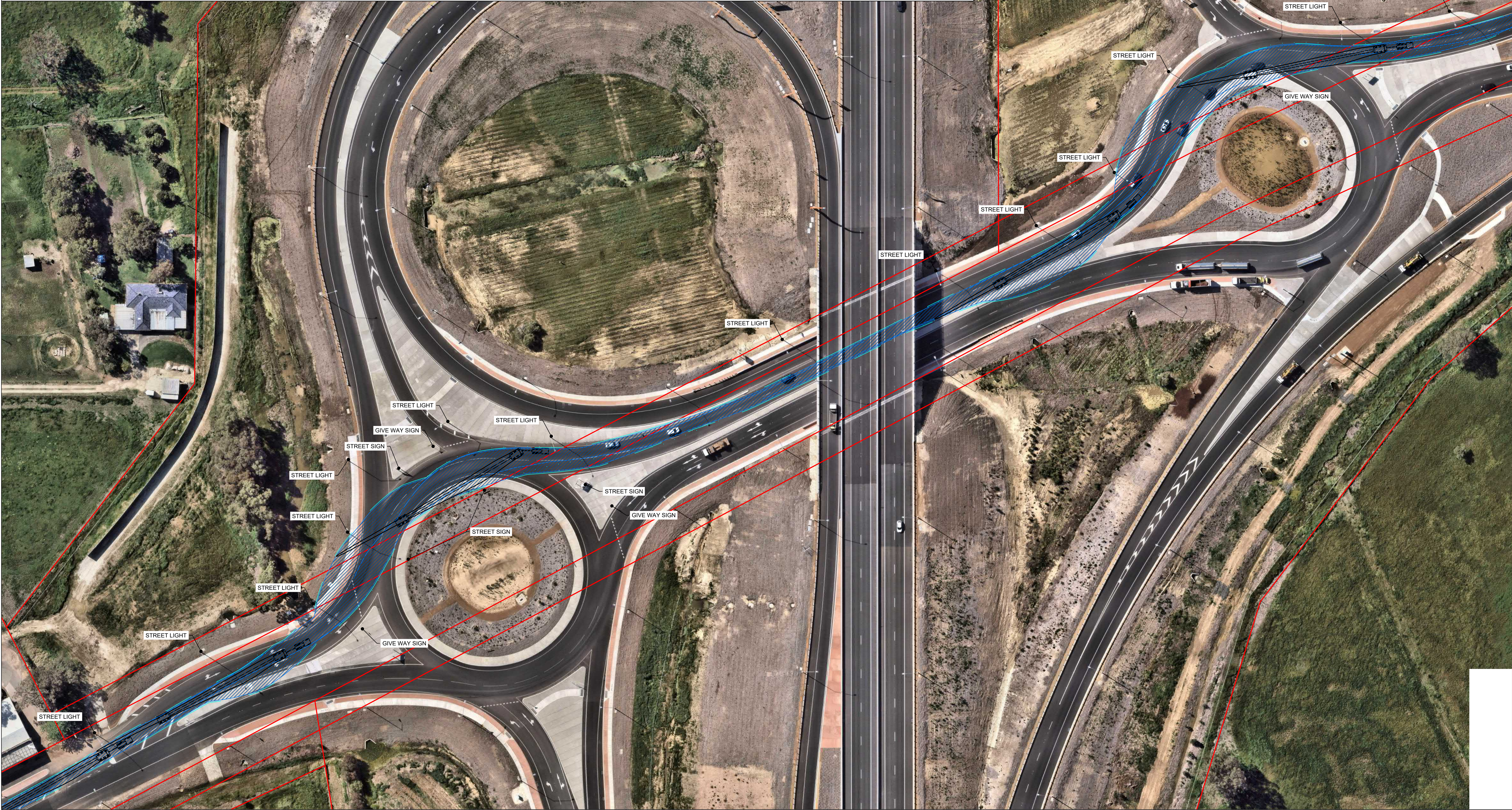
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PROJECT	WEST ARTHUR WIND FARM
TITLE	

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91m Blade Transporter (Ares Group)	
Overall Length	102.417m
Overall Width	3.496m
Overall Body Height	4.908m
Min Body Ground Clearance	0.247m
Max Track Width	2.900m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	46.414m



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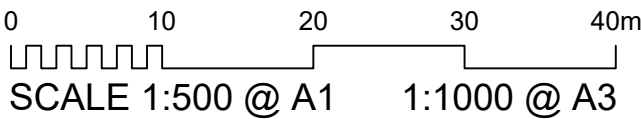
CLIENT	FLYT PTY LTD
PROJECT	WEST ARTHUR WIND FARM

91M BLADE SWEPT PATH ALT ROUTE

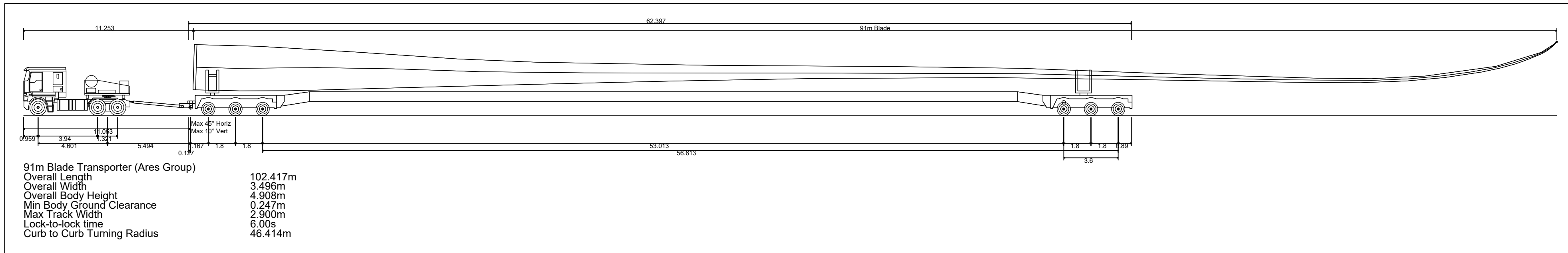
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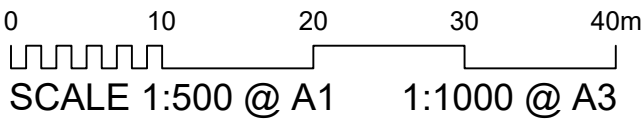
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