Appendix S

Traffic

A-1 Sandy Ridge Facility – Traffic Management Plan (Tellus, 2019)

A-2 Sandy Ridge Facility – Access Roads - Traffic Management Plan (Tellus, 2019)

A-3 Sandy Ridge Facility – s38 Increase to Gate Capacity Transport Impact Assessment (GHD, 2021)

(This report focuses on the adequacy of the road network in response to potential increased traffic)

A-4 Transport Management Plan – 2021 GHD (GHD, 2021)

TELLUS

Sandy Ridge Facility

Sandy Ridge Facility - Traffic Management Plan

Management Plan

Tellus Holdings Ltd

August 19

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TABLE OF CONTENTS

Appendices

ABBREVIATIONS & DEFINITIONS

AS	Australian Standard
ATM	Aggregate Trailer Mass
BAC	Blood Alcohol Concentration
ESO	Emergency Services Officer
GVM	Gross Vehicle Mass
HV	Heavy Vehicle
IWDF	Intractable Waste Disposal Facility
km	kilometres
Km/hr	Kilometres per hour
LV	Light Vehicle
NZS	New Zealand Standard
OEM	Original Equipment Manufacturer
Tellus	Tellus Holdings Ltd.
the Facility	The Sandy Ridge Facility
TCD	Traffic Control Plan
TMP	Traffic Management Plan
UHF	Ultra-High Frequency
WA	Western Australia

Heavy Vehicle	Heavy Vehicles are vehicle that: • A heavy vehicle has a Gross Vehicle Mass (**GVM**) or Aggregate Trailer Mass (**ATM**) of more than 4.5 tonnes. • Each heavy vehicle type requires a specific driver's licence HR, HC, MC.
Light Vehicle	Light vehicles are vehicles that: • Have a Gross Vehicle Mass equal to or no greater than 4.5 tonne, • Constructed or equipped to seat no more than 12 passengers (including driver); and • Are road registrable. • This Includes but not limited to: cars, wagons, utilities, buses.
Mobile Equipment	Mobile equipment is self-propelled, tracked and rubber tyred equipment, categorised into 2 groups: • Light Vehicles. • Surface Mobile Equipment.

1 INTRODUCTION

1.1 Project overview

Tellus Holdings Ltd ('**Tellus'**) has Environmental Approval (refer to Ministerial Statement 1078) to construct and operate the Sandy Ridge Facility (the '**Facility'** and/or '**Project'**). The Facility involves the construction and operation of an open-cut kaolin mine and complementary waste storage and disposal facility with supporting above-ground infrastructure in the Shire of Coolgardie over 25 years.

The Facility is located approximately 75 kilometres (km) north east of Koolyanobbing, and approximately 240 km north west of Kalgoorlie, in the Shire of Coolgardie, within the Goldfields Region of Western Australia (**WA**).

The Facility is located on unallocated Crown Land and accessed from the Great Eastern Highway by the Mount Walton East Intractable Waste Disposal Facility (**IWDF**) Access Road, which leaves the highway approximately 96 km east of Southern Cross and 90 km west of Coolgardie. After travelling approximately 90 km north on the IWDF Access Road, access to the Facility is gained by turning west onto the Mount Dimer Road for 4.5 km, then north for 4 km along a new access road to the Facility.

1.2 Purpose and scope

This Traffic Management Plan (**TMP**) forms part of the Sandy Ridge Safety Management Plan and provides details on how all road users are considered to work within the Facility.

This TMP describes the controlling of traffic movement for vehicles within the Facility. The purpose is to reduce the risk of injury or incident in managing traffic movements around the Facility.

This TMP applies to all personnel who drive or operate machinery within the Facility.

1.3 Objectives

The objectives of this TMP are to;

- Provide for a safe environment for all road users.
- Provide protection to all personnel from traffic hazards that may arise as a result of increased traffic activity.

To achieve these above objectives, the TMP shall ensure:

- Whenever possible traffic lanes to accommodate vehicle movements are provided
- Traffic congestion is kept to a minimum and within acceptable levels
- That appropriate/sufficient warning and information signs are installed, and that adequate guidance is provided to delineate the travel paths throughout the facility
- The area is free of hazards and all users are protected from any work areas within the facility.
- That all needs of road users are accommodated through the facility during operational activities
- Provision for safety procedures to enable work site personnel to enter or leave the work area in a safe manner.

2 REGUALTORY FRAMEWORK

Traffic management works, and control devices shall be conducted in accordance with:

- *Mine Safety and Inspection Act 1994*.
- Mine Safety and Inspection Regulation 1995.
- *Occupational Safety and Health Act 1984* (the OSH Act)).
- Occupational Safety and Health Regulations 1996 (the OSH regulations).
- Traffic Management for Works on Roads, Code of Practice, Main Roads WA (MRWA), September 2018.
- Road Traffic Code 2000 (WA).
- Australian Standard (**AS**) 1742.3-2009 Manual of uniform traffic control devices - Traffic control for works on roads[1].
- AS/NZS ISO 31000-2018 Risk Management, Principles and Guidelines.
- AS/NZS 4602 | High Visibility Safety Garments.

2.1 *Mine Safety and Inspection Act 1994*

The *Mines Safety and Inspection Act 1994* imposes general duty of care provisions to maintain safe and healthy workplaces at mining operations and protect people at work from hazards. General duty of care obligations apply to:

- Employers.
- Employees.
- Contractors and their employees.
- Labour hire agents and workers.
- People involved in the design, supply, installation and maintenance of plant.

The Act outlines the obligations of each group and provides penalties for any breaches of those obligations to help prevent unsafe situations. It provides a framework where the general duty of care is supported by consultation, cooperation, workplace standards and procedures to resolve issues. The concept of general duty of care is the guiding principle for all other parts of the Act.

2.2 Mine Safety and Inspection Regulation 1995

The Mines Safety and Inspection Regulations 1995 describe some of the requirements that apply to specific work situations. While the regulations must be complied with, the overriding responsibility is to comply with the general duties in the Act.

[1] Except where expressly overridden by the Traffic Management for Works on Roads, Code of Practice (Mainroads WA).

2.3 *Occupational Safety and Health Act 1984*

The OSH Act provides for the promotion, coordination, administration and enforcement of occupational safety and health in WA. The OSH Act places certain duties on employers, employees, self-employed people, manufacturers, designers, importers and suppliers. It also places emphasis on the prevention of accidents and injury. In addition to the broad duties established by the OSH Act, the legislation is supported by a further tier of statute, commonly referred to as regulations, together with a lower tier of non-statutory codes of practice and guidance notes.

2.4 Occupational Safety and Health Regulations 1996

The Occupational Safety and Health Regulations 1996 (the OSH regulations) sets minimum requirements for specific hazards, work and administrative practices in relation to work safety and health.

2.5 Traffic Management for Works on Roads, Code of Practice

The MRWA Code of Practice 'Traffic Management for Works on Roads' details the steps that need to be taken in order to meet requirements of the OSH Act.

2.6 Road Traffic Code 2000

Details laws applying to road use in WA.

2.7 Australian Standard 1742.3-2009 Traffic Control Devices for Works on Roads

Australian Standards AS 1742.3:2009 - Manual of uniform traffic control devices – Part 3: Traffic control devices for works on roads is a nationally agreed standards document outlining the use of traffic control devices on the road network and has been adopted by all Australian jurisdictions.

2.8 AS/NZS ISO 31000-2018 Risk Management, Principles and Guidelines

AS/NZS ISO 31000 is a family of standards relating to risk management codified by the International Organization for Standardization (ISO). The purpose of ISO 31000:2018 is to provide principles and generic guidelines on risk management. ISO 31000 seeks to provide a universally recognised paradigm for practitioners and companies employing risk management processes to replace the myriad of existing standards, methodologies and paradigms that differed between industries, subject matters and regions.

2.9 AS/NZS 4602 High Visibility Safety Garments

The Australian Standard AS/NZS4602 specifies the visual requirement for high visibility safety garments for occupational wear by people who may be exposed to hazard from moving traffic, moving plant or equipment in high risk situations. The garments specified in the Australian Standard AS/NZS4602.1:2011 are classified as follows:

- **Class D** – a garment designed for daytime use only. Class D garments are intended to provide the wearer with high visibility under daylight viewing conditions and generally not effective when viewed under artificial light.
- **Class N** – a garment designed for night-time use only.
- **Class D/N** – a garment designed for both day and night use, comprising retroreflective elements on a fluorescent or other non-retroreflective high visibility background material.

3 RESPONSIBILITIES

Registered Manager	• Responsible for traffic management for their respective work area. • All traffic control measures detailed in this TMP are in place and maintained in accordance with relevant Acts, Codes, Standards and Guidelines. • Suitable communication and consultation with affected stakeholders is maintained at all times. • Inspections of traffic control measures are undertaken in accordance with this TMP with results recorded and any variations detailed together with reasons. • Review feedback from inspections, worksite personnel and take action to amend traffic control measures as appropriate. • Arrange or undertake necessary audits with incident investigations.
Manager / Supervisor	• Instruct workers on relevant safety Standards, including the correct wearing of Personal Protective Equipment and other equipment as required. • Allocate vehicles that are fit-for-purpose and are in safe working order. • Ensure traffic control measures are implemented/maintained in accordance with this TMP. • Check that vehicle defects are being reported and that repairs are made before a vehicle is put back into use. • Check that vehicles are being routinely inspected and maintained. • Undertake or submit required inspection and evaluation reports to the Registered Manager. • Render assistance to road users and stakeholders when incidents arising out of the works affect road network performance, or the safety of road users including Workers and take appropriate action to correct unsafe conditions, including any necessary modifications to this TMP.
Employees and other Operators	• Only operate a vehicle if appropriately licensed, trained and qualified to do so safely. • Only operate vehicles which are fit-for-purpose. • Check that your vehicle is in safe working order before commencing a journey. Conduct a documented pre-start check of the vehicle(s) they will use prior to operation at any time and ensuring the paperwork associated with the pre-start check is delivered in a timely manner to their immediate Manager / Supervisor. • Report any vehicle defects to your Manager / Supervisor or person in charge. • Reporting all incidents and non-conformances associated with this TMP to their Manager / Supervisor. • Use the safety equipment associated with the vehicle at all times when the vehicle is in operation on and off the site. • Do not interfere, alter or disable any safety equipment or control(s) associated with the vehicle they are operating. • Wear a seat belt at all times while in a moving vehicle. • Must not leave a running vehicle unattended unless it is parked in a safe manner with parking controls engaged.

4 TRAFFIC MANAGEMENT

4.1 Facility traffic flow

The flow of traffic within the Facility will be minimised to dedicated access ways to allow for safe passage of trough traffic with minimal interference with operational tasks. This will be in conjunction with a site-based risk assessment and Traffic Control Diagram (**TCD**)

Where access ways intersect, control measures will be implemented in the form of signage to ensure traffic flow is controlled and safe for all users.

Site speed limits within the Facility will be implemented and will take into account general access ways, Light Vehicle (**LV**) and Heavy Vehicle (**HV**) parking areas, workshop, work areas and main gate.

Speed limits for the different areas are:

- General access ways 20 km/hr.
- LV/HV paring 10 km/hr.
- Workshop 5 km/hr.
- Outside main gate 40, 20 and 10 km/hr.
- Inside main gate 10 then raised to 20 km/hr.
- Work areas (i.e. container stacking area) 10 km/hr.

Signage with Ultra High Frequency (**UHF**) channel number and mines radio channel will be displayed prior to entering the Facility.

The Facility TCD is presented in **Appendix A**.

4.2 Intersecting access ways

At various locations within the Facility general traffic flows will intersect, these points will be controlled in conjunction with a site-based risk assessment and signage. Main intersections will be controlled with the use of stop signs to ensure that vehicles come to a complete stop and check for oncoming traffic, this is to eliminate vehicles rolling through intersections

4.3 Exclusion zones

Exclusion zones will be in place for operational areas limiting general traffic movements within these areas, access to these areas will be controlled by call up signs prior to entry and delineation to allow separation of HVs, LVs and pedestrians.

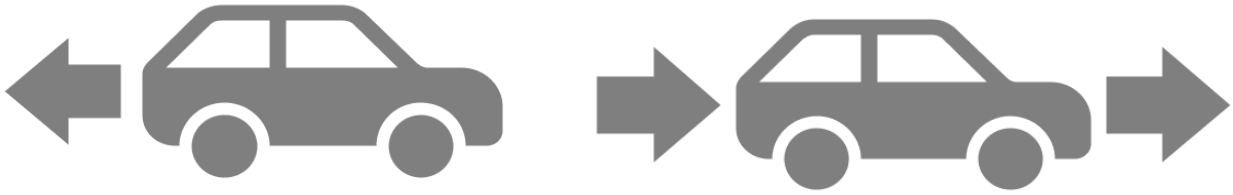
4.4 Main gate

Entry to the Facility main gate will be controlled with speed reduction signage along with park up areas to avoid congestion. The speed reduction will work in conjunction with the Sandy Ridge Access Roads TMP and reduce vehicles from 40 km/hr down to 10 km/hr to facilitate safe entry to the Facility for both vehicles and pedestrians working at the main gate.

Once through the main gate a 10 km/hr speed limit will be in place until clear of the main gate office area where it will then revert to 20 km/hr for general access ways.

4.5 Parking areas

Parking areas for HVs and LVs within the Facility must allow either:



Reverse Parking

Drive Through Parking

The only exemption to this requirement will be busses brining personnel to the Facility. Busses will have a designated parking area at the main car park at the front of the Facility.

Speed limits within parking areas is limited to 10 km/hr.

4.6 Workshop

Access to the Workshop is by authorised personnel only unless positive two-way communications is granted to enter. The Workshop where possible will be a drive through Facility and the speed limit within the workshop will be restricted to a maximum of 5 km/hr.

4.7 Work areas

Work areas within the Facility will be classed as ‘exclusion zones’ to achieve separation with general traffic and will require call-up authorisation prior to entry, the maximin speed limit within the work areas will be 10 km/hr.

4.8 General service areas

Refuelling, wash bay, power station and the raw water facility will be classed as a ‘general service area’ and will have a reduced speed limit of 10 km/hr within the immediate area. This will be separate to the general access ways and will be indicated by the way of delineation and signage.

4.9 Haul road

The haul road is the road that links the Facility to the cell/pit area and will be utilised by both HVs and LVs. The haul road width has been designed to ensure there is adequate separation between passing HVs in opposite directions. Prior to LVs entering the haul road communication via mine radio must be made announcing that the LV is on the haul road in order to alert HV operators. The maximum speed limit on the haul road is 40 km/hr; however, personnel must drive to prevailing conditions and must reduce their speed as required if site conditions change. Refer to **Appendix B** for the haul road TCD.

4.9.1 Overtaking

No overtaking is permitted on the haul road unless in a breakdown situation. In such a situation positive communication must be made prior to passing broken-down vehicle. Emergency vehicles have exception to this rule in an emergency situation where radio silence is to be maintained and all vehicle movements are to stop until all clear is given by the lead Emergency Services Officer (**ESO**).

4.10 Pit / cell

Access to and from a Pit/Cell will be via an airlock door in the air dome which will be single lane only. All vehicles entering the airlock must stop prior to entering the airlock doors and call-up on the mine radio to gain access to the air dome. All vehicles must wait until clear instructions to proceed are given from within the Pit/Cell.

Vehicles exiting the pit/cell must wait at the base of the exit ramp in a clear area to confirm that:

- The ramp is clear.
- No vehicles are in the air lock doors and about to commence entry to the air dome.

Note - Loaded vehicles waiting for instruction to enter the air dome have right of way and are to be called through if safe to do so.

Ramp speeds are limited to a maximum of 20 km/hr with loaded dump trucks to be locked in low gear or in accordance with the operator's manual and Original Equipment Manufacturer's (**OEM**) specifications. Refer to **Appendix B** for the Pit/Cell TCD.

4.11 Accommodation camp

Access to the accommodation camp will be via the camp access road which is covered under the Sandy Ridge **Access Roads TMP**. Access roads within the camp will be limited to 20 km/hr with parking areas being 10 km/hr.

All vehicles are to be reversed parked in designated parking areas. Traffic flow through the camp will be one way to facilitate safe passage for road users and pedestrians with designated walk ways. Refer to **Appendix C** for the accommodation camp TCD.

4.12 Signage and Barricades

Signage at the Facility will be in accordance with Australian Standard (**AS**) 1742 (and manufactured in accordance with AS 1743) and shall be at least size 'B' and will be Class 1 retro-reflective.

Prior to installation, all signage shall be checked for damage or cleanliness and repaired, replaced or cleaned as necessary. Signage shall be erected in accordance with locations specified on the TCD's so that they:

- Are properly displayed and securely mounted.
- Are within the driver's line of sight.
- Cannot be obscured from view.
- Do not obscure other devices from the driver's line of sight.
- Do not become a possible hazard to workers or vehicles.
- And do not deflect traffic into an undesirable path.

5 MONITORING AND MEASUREMENT

5.1 Site inspections and record keeping

The **Registered Manager** will ensure that this **Sandy Ridge Facility TMP** is implemented and evaluated for effectiveness. The **Supervisor** shall inspect and monitor traffic movements within the Facility. The outcomes of the inspection will be diarised for information and assessment.

Inspections shall be undertaken as required and at a minimum on the following occasions:

- During the hours of daily work.

A daily record of the inspections should be kept indicating;

- Condition of signage and road(s).
- If amendments are required.
- Any significant incidents or observations associated with the traffic controls and their impacts on road users.

Where significant changes to the traffic environment or adverse impacts are observed, the controls should be reviewed as a matter of urgency. Daily inspection sheets shall be completed by the **Supervisor** and reviewed for any amendments. All variations to the **Sandy Ridge Facility TMP** and /or TCDs, non-conformances, incidents and accidents shall be recorded.

5.2 TMP auditing

Compliance audits will be undertaken quarterly by Tellus to ensure all requirements of this TMP are implemented.

5.3 Incident reporting

In the event of a motor vehicle incident, the **Facility Manager** or **Emergency Services Officer** shall be notified immediately. Vehicles involved in an incident will not to be moved without explicit authority from the **Facility Manager**.

In the event of a motor vehicle accident that results in the designated driver or others being injured, and or significant damage to property occurs, all possible assistance is to be rendered if safe to do so and Sandy Ridge **Emergency Response Team** are to be contacted immediately.

A full investigation into the incident will be undertaken in consultation with all parties as to identify the causal factors and to implement adequate controls to help reduce the risk of recurrence.

In the event of a motor vehicle incident a ‘For Cause Blood Alcohol Concentration’ (**BAC**) test will be conducted as part of the investigation.

Broken down vehicles and vehicles involved in minor non-injury crashes shall be temporarily moved to the verge as soon as possible after details of the crash locations have been gathered and noted. Suitable recovery systems shall be used to facilitate prompt removal of broken-down vehicles.

5.4 Risk Identification and Assessment

Risk analysis of the facility access ways has identified a number of risk events/items that will be managed by effective traffic management planning and the implementation of this TMP. A risk analysis table is attached at **Appendix D**. The assessment process has been undertaken in accordance with Australian Standard AS/NZS ISO 31000, Risk Management Principles and Guidelines.

Identified risks have been treated by development of this TMP. Unforeseen risks arising after the implementation of this TMP will be treated in accordance with standard work practices and procedures where appropriate.

APPENDICIES

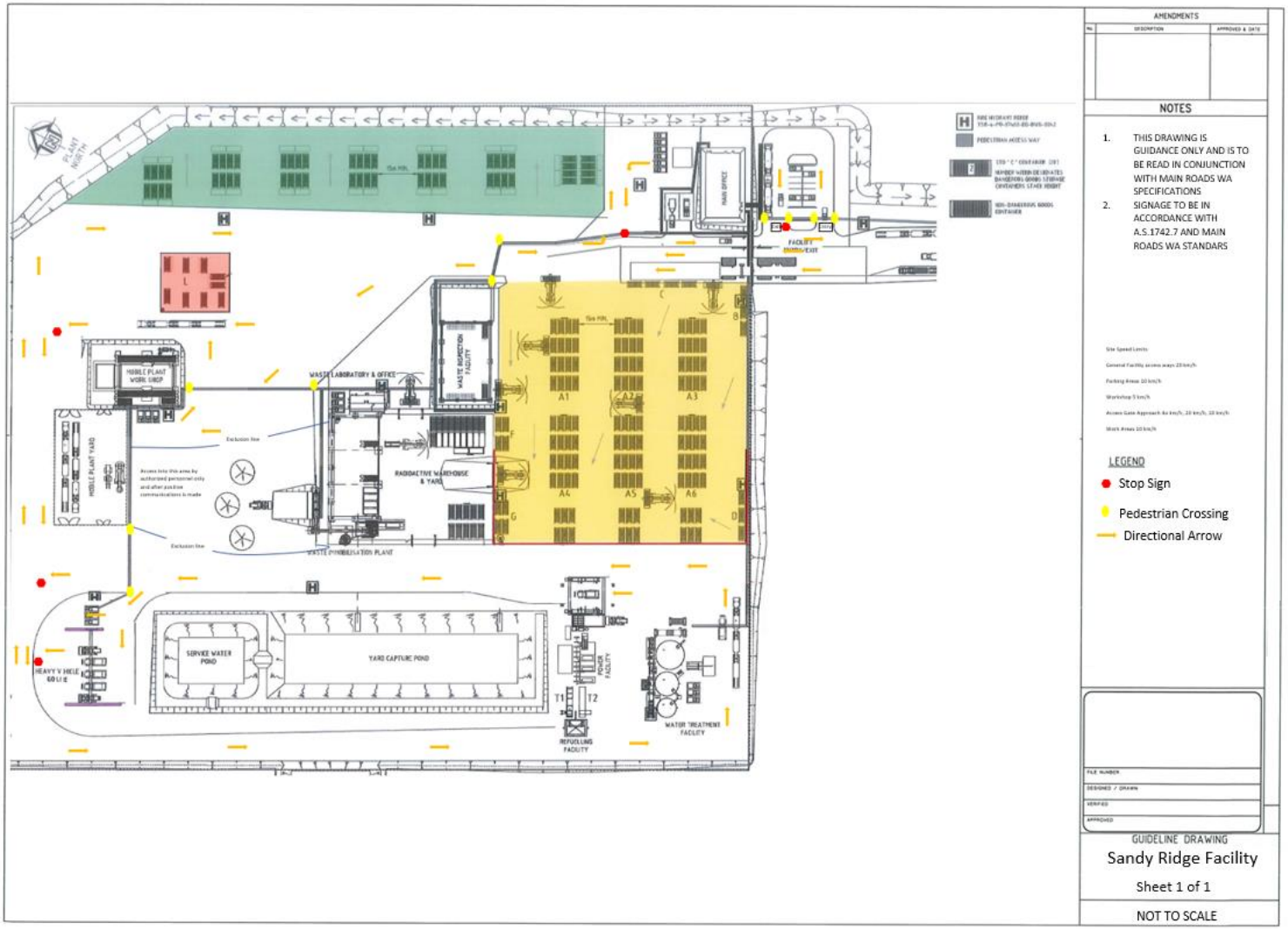
Appendix A – Facility TCD

Appendix B – Haul road and Cell TCD

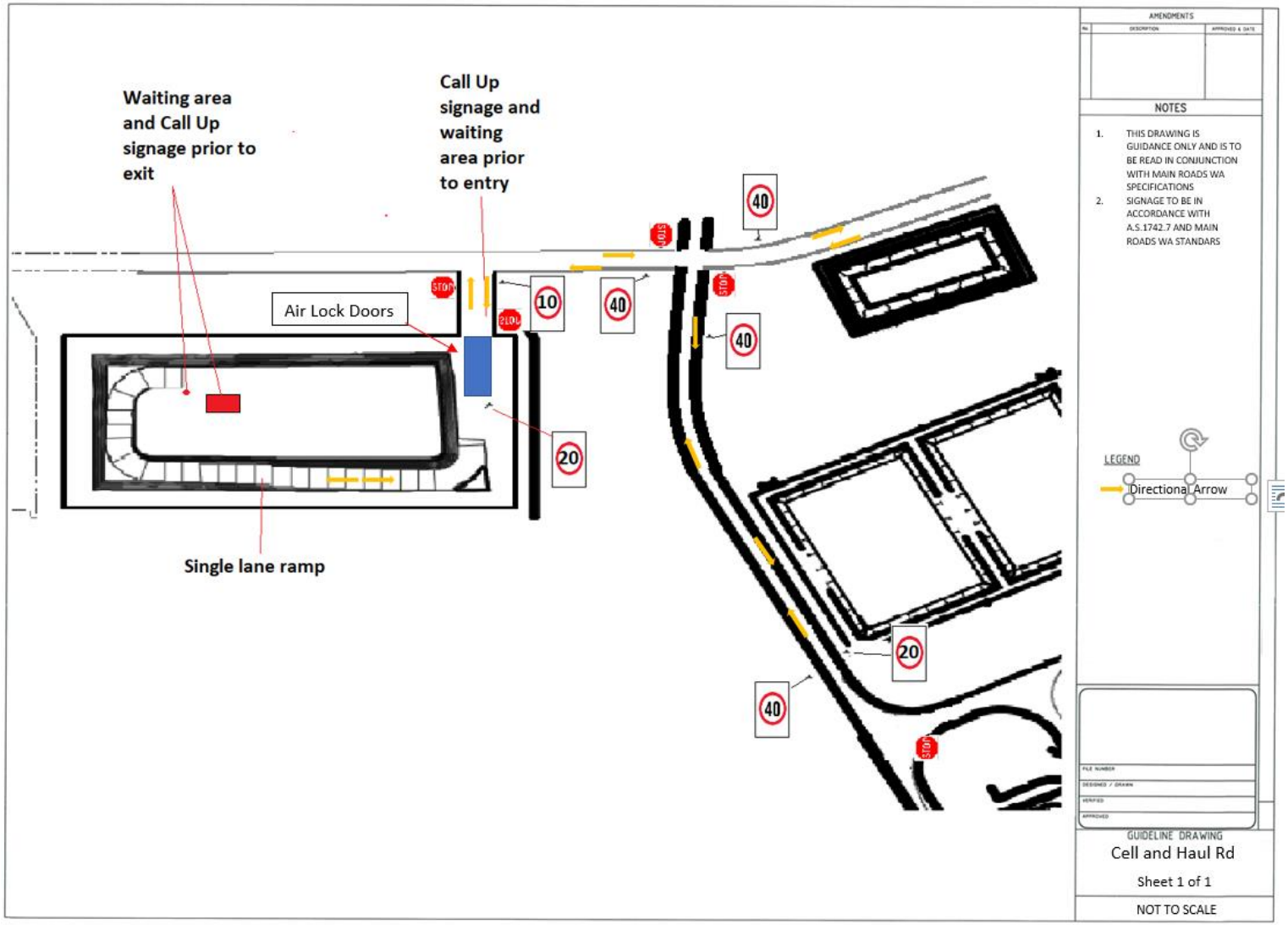
Appendix C – Accommodation Camp TCD

Appendix D – Risk Assessment

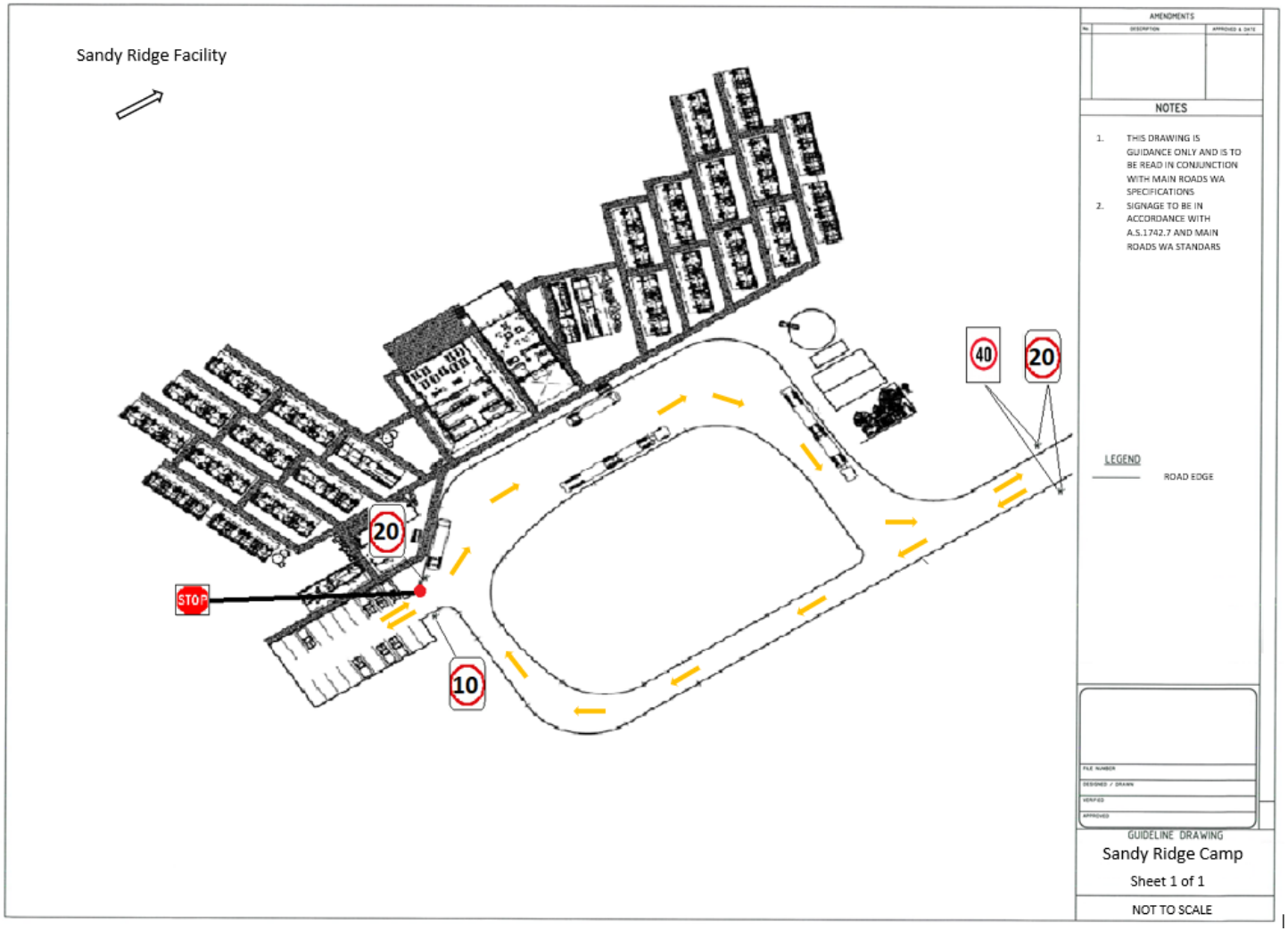
Appendix A – Facility Traffic Control Diagram



Appendix B – Haul Road and Cell Traffic Control Diagram



Appendix C – Accommodation Camp Traffic Control Diagram



Appendix D –Risk Assessment

SANDY RIDGE FACILITY TMP RISK REGISTER

Risk	Main Risk	Description	Risk Category	Sub-Risk No.	Sub Risks	Root Cause	Cause occurs here	Potential Consequence Description	Consequences: People	Environment	Financial	Legal	Reputation	Inherent Risk: Likelihood	Consequence	Risk Level	Preventive Controls (to reduce likelihood)	Control: Effectiveness	Status	Corrective Controls (to reduce consequence once event has occurred)	Control: Effectiveness	Status	Action	Due By	Residual Risk: Status	Likelihood	Consequence	Risk Level	Risk Tolerance	Risk Owner	Remarks
OP	Main Gate	Entering/Exiting Facility via main gate	HSE Risks	OP.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Reduction in speeds on entering main gate area down to 10 km/h parking bay prior to entrance to reduce conjestion at main gate Call up signs with site two way channels and emergency contact detail dedicated walk ways for padestrains	Strong	Implemented	Emergency contact signage at entrance to the facility onsite medical facility and ESO	Satisfactory	Action			open	Rare	Catastrophic	High		Tellus Operations	
OP1			Hazards/Events	OP1.1	Hydrocarbon/Hazardous waste spill	Ruptured fuel, oil or hazardouse waste receptical		Environmental impact to surrounding fauna and floora		Minor				Possible	Minor	Medium	spill kits placed at front gate inspection of vehicles and containers on arrival	Satisfactory	Implemented	onsite eso and cleanup capabilities	Satisfactory	Action			open	Rare	Minor	Low		Tellus Operations	
OP3			Hazards/Events	OP3.2	Dust	Travelling at Speed Lack of dust suppression High winds Road surface breaking up		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	10km/h speed at main gate sealed road surface to reduce dust potential regular dust supression on unsealed sections to maintain minimal dust	Satisfactory	In development	daily inspections of main gate area including road conditions	Satisfactory	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP3			Hazards/Events	OP3.3	Fauna	Local Wildlife accessing near main gate		Vehicle vs Fauna causing damage and potential injury Personnel verse fauna causing injury		Minor				Possible	Minor	Medium	wildlife warning signs be visually vigulant and maintain safe distance contact site ESO for assistance	Satisfactory	In development	Remove Fauna from area by an authorised person Report to Sandy Ridge ESO and supervisor	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP3			Hazards/Events	OP3.4	Poor vision	Sunglare Dirty windscreen Heavy Rain Dust Poor light		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	ensure signage is clean and visable ensure windscreens are clean and clear Drive to conditions reduce speed as required Ensure all driving lights are working	Satisfactory	In development	onsite observations and inspections daily work area inspection to assess ground conditions clear painted line marking on sealed road section for better visability	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP19			Hazards/Events	OP19.3	environmental impacts	ruptured receprical leaking waste		contamination to environment fauna and floora impact	Minor					Possible	Minor	Medium	spill kits throughout the facility inspections of hazardouse waste containers entering site self bunded containers where required to prevent spills dedicated refueling locations with use of spill trays to capture any potential spill to ground	Satisfactory	In development	Onsite eso to provide assistance as required daily inspections carried out and any visable spills to be cleaned up immediately	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP3			Hazards/Events	OP3.5	Wet conditions	Rain event causing road to become slippery over use of dust surpression		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible		#N/A	site inspection to assess ground conditions monitor use of water truck during dust surpression VOCd and ticketed operators drive to conditions	Satisfactory	In development	Road inspections carried out by cometent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP	Facility	Access ways within the facility	HSE Risks	OP.1	Vehicle collision or near miss	Poor signage Poor vision within the facilty Poor road conditions		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Max speed of 20 km/h within the facility and 10 km/h in parking areas clear visual signage inplace at intersections to ensure itersections are controled dedicated sign posted walk ways for padestrains	Strong	In development	Onsite Medical facility and ESO daily site inspections of acceaa ways and signage	Strong	Action			open	Unlikely	Major	Medium			
OP10			Hazards/Events	OP10.1	Hydrocarbon/Hazardous waste spill	Ruptured fuel tank, oil or hazardouse waste receptical		Environmental impact to surrounding fauna and floora	Catastrophic					Possible	Catastrophic	High	spill kits placed throughout the facility for fast response onsite eso to assist with hazardouse substances	Improvement required	In development	onsite eso and cleanup capabilities isolation of area and immediate clean up to avoid further contamination of ground	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
			Hazards/Events		Dust	Travelling at Speed Lack of dust suppression High winds Road surface breaking up		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible		#N/A	20km/h speed limit throughout the facility sealed road surface to reduce dust potential regular dust supression on unsealed sections to maintain minimal dust	Satisfactory	In development	daily inspections of facility access ways regular maintenance											
OP3			Hazards/Events	OP3.5	Wet conditions	Rain event causing road to become slippery over use of dust surpression		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Catastrophic					Possible		#N/A	Max speed of 20 km/h within the facility and 10 km/h in parking areas clear visual signage inplace at intersections to ensure itersections are controled dedicated sign posted walk ways for padestrains	Strong	In development	Onsite Medical facility and ESO daily site inspections of access ways and signage	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP19			Hazards/Events	OP19.3	Fauna	Local Wildlife accessing through facility		Vehicle vs Fauna causing damage and potential injury Personnel verse fauna causing injury		Moderate				Possible	Moderate	Medium	wildlife warning signs be visually vigulant and maintain safe distance contact site ESO for assistance	Satisfactory	In development	Remove Fauna from area by an authorised person Report to Sandy Ridge ESO and supervisor	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP19			Hazards/Events	OP19.3	environmental impacts	ruptured receprical leaking waste		contamination to environment fauna and floora impact		Major				Possible	Major	High	spill kits throughout the facility inspections of hazardouse waste containers entering site self bunded containers where required to prevent spills dedicated refueling locations with use of spill trays to capture any potential spill to ground	Satisfactory	In development	Onsite eso to provide assistance as required daily inspections carried out and any visable spills to be cleaned up immediately	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	

OP11	Haul Road		HSE Risks	OP11.1	Vehicle collision or near miss	Poor signage Poor vision due to dust Poor road conditions speed incompetent/inexperienced operator		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Max speed of 40 km/h along the haul road clear visual signage inplace at intersections to ensure itersections are controled VOCd and ticketed operators dust supression as required no overtaking unless in a breakdown situation then possitive communications must be obtained (emergency vehicles in an emergency situation are exempt)	Strong	In development	Onsite Medical facility and ESO daily site inspections of haul road regular maintenance to maintain competent road surface	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP3			Hazards/Events	OP3.5	Hydrocarbon/Hazardous waste spill	Ruptured fuel tank, oil or hazardouse waste receptical		Environmental impact to surrounding fauna and floora		Moderate				Possible		#N/A	spill kits placed in all vehicles for fast response onsite eso to assist with hazardouse substancas spill kit at go-line and enterance to cell	Improvement required	In development	ensure trucks are not overloaded to avoid spillage drive to conditions	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP			Hazards/Events	OP.1	Dust	Travelling at Speed Lack of dust suppression High winds Road surface breaking up		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Minor					Possible	Minor	Medium	40km/h speed limit along the haul road regular dust supression to maintain minimal dust	Satisfactory	In development	daily inspections of haul road regular maintenance	Strong	Action			open	Unlikely	Minor	Low			
OP			Hazards/Events	OP.1	Wet conditions	Rain event causing road to become slippery over use of dust supression inexperienced operators		Vehicles leaving road way due to slippery conditions injury and damage environmental impact	Catastrophic					Possible	Catastrophic	High	Max speed of 40 km/h along the haul road clear visual signage inplace at intersections to ensure itersections are controled delineation to mark out edge of haul road with windrows VOCd and ticketed operators	Strong	In development	Onsite Medical facility and ESO drive to conditions	Strong	Action			open	Unlikely	Major	Medium			
OP12			Hazards/Events	OP12.1	Fauna	Local Wildlife accessing across haul road		Vehicle vs Fauna causing damage and potential injury Personnel verse fauna causing injury		Moderate				Possible	Moderate	Medium	wildlife warning signs on haul road be visually vigulant and maintain safe distance use two way communications to notify other road users to alert of potential hazard contact site ESO for assistance if removal of fauna is required	Satisfactory	In development	Remove Fauna from area by an authorised person Report to Sandy Ridge ESO and supervisor	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP13			Hazards/Events	OP13.1	environmental impacts	ruptured receprical leaking waste		contamination to environment fauna and floora impact		Minor				Possible	Minor	Medium	spill kits in vehicles Pre-start inspections of machinery and vehicles to check for leaks self bunded containers where required to prevent spills dedicated refueling locations with use of spill trays to capture any potential spill to ground	Satisfactory	In development	Onsite eso to provide assistance as required daily inspections carried out and any visable spills to be cleaned up immediately	Strong	Action			open	Unlikely	Insignificant	Low			
OP3	Cell/Air dome		HSE Risks	OP3.5	Vehicle collision or near miss	Poor signage Poor vision due to dust Poor road conditions speed incompetent/inexperienced operator no possitive communications		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Moderate					Possible		#N/A	Max speed of 10 km/h entering airlock doors 20km/h max on ramp into cell All vehicle entering the cell must stop prior to entering the air dome and obtain authorisation to proceed via positive communications from inside the qir dome clear call up and possitive communication prior to entry, no entry untill approval from inside the air dome has been given VOCd and ticketed operators dust supression as required ramp access inside cell is single lane, all vehicle exiting cell need to park up in a safe place at bottom of ramp and call up prior to leaving. Possitive communications must be obtained prior to moving off communications must be obtained (emergency vehicles in an emergency situation are exempt)	Strong	In development	Onsite Medical facility and ESO daily site inspections regular maintenance to maintain competent road surface	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP15			Hazards/Events	OP15.1	Hydrocarbon/Hazardous waste spill	Ruptured fuel tank, oil or hazardouse waste receptical		Environmental impact to soils	Catastrophic					Possible	Catastrophic	High	spill kits placed in all vehicles for fast response spill kits at in cell go-line and enterance to cell	Improvement required	In development	ensure trucks are not overloaded to avoid spillage drive to conditions	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP16			Hazards/Events	OP16.1	Dust	Travelling at Speed Lack of dust suppression Road surface breaking up		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage		Moderate				Possible	Moderate	Medium	20km/h speed limit on ramp dust supression as required to maintain minimal dust	Satisfactory	In development	daily inspections of ramp and cell floor regular maintenance	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP17			Hazards/Events	OP17.1	Wet conditions	Rain event causing road to become slippery over use of dust supression inexperienced operators		Vehicles leaving road way due to slippery conditions injury and damage environmental impact	Minor					Possible	Minor	Medium	Max speed of 10 km/h entering Air dome and 20km/h on ramp clear visual signage inplace with dedicated stopping area prior to entry of air dome adequate distance away from air lock doors to maintain safe passage for exiting vehicles delineation to mark out edge of ramp with windrows VOCd and ticketed operators	Strong	In development	Onsite Medical facility and ESO drive to conditions	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP17			Hazards/Events	OP17.2	Fauna	Local Wildlife accessing into cell via a tear or unsecured section of air dome		Vehicle vs Fauna causing damage and potential injury Personnel verse fauna causing injury	Catastrophic					Possible	Catastrophic	High	daily inspection of air dome for tears or unsecured sections and rectify if safe to do so contact site ESO for assistance if removal of fauna is required	Satisfactory	In development	Remove Fauna from area by an authorised person Report to Sandy Ridge ESO and supervisor	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP17			Hazards/Events	OP17.3	environmental impacts	ruptured receprical leaking waste		contamination to environment fauna and floora impact		Moderate				Possible	Moderate	Medium	spill kits in vehicles Pre-start inspections of machinery and vehicles to check for leaks dedicated refueling location in cell with use of spill trays to capture any potential spill to ground	Satisfactory	In development	Onsite eso to provide assistance as required daily inspections carried out and any visable spills to be cleaned up immediately	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP3	Accommodation camp		HSE Risks	OP3.5	Vehicle collision or near miss	Poor signage Poor vision due to dust Poor road conditions speed incompetent/inexperienced operator no possitive communications		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Moderate					Possible		#N/A	Max speed of 20 km/h along camp ring road and 10 km/h in parking areas clear visual signage inplace at intersections to ensure itersections are controled dedicated sign posted walk ways for padestrains	Strong	In development	Onsite Medical facility and ESO daily site inspections of area and signage	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP19			Hazards/Events	OP19.1	Hydrocarbon/Hazardous waste spill	Ruptured fuel tank, oil or hazardouse waste receptical		Environmental impact to soils	Catastrophic					Possible	Catastrophic	High	spill kits placed camp and in vehicles for fast response onsite eso to assist with hazardouse substances	Improvement required	In development	onsite eso and cleanup capabilities isolation of area and immediate clean up to avoid further contamination of ground	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP19			Hazards/Events	OP19.2	Dust	Travelling at Speed Lack of dust suppression Road surface breaking up		Potential for Vehicle verses vehicle, vehicle v person, vehicle v structure impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	20km/h speed limit on camp ring road sealed road surface to reduce dust potential regular dust supression on unsealed sections to maintain minimal dust drive to conditions	Satisfactory	In development	daily inspections of facility access ways regular maintenance	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP19			Hazards/Events	OP19.3	Wet conditions	Rain event causing road to become slippery over use of dust supression inexperienced operators		Vehicles leaving road way due to slippery conditions injury and damage environmental impact	Catastrophic	Minor				Possible	Catastrophic	High	Max speed of 20 km/h on camp ring road and 10 km/h in parking areas clear visual signage inplace at intersections to ensure itersections are controled dedicated sign posted walk ways for padestrains sealed car park and ring road to ruduce slipping potential engage 4 wheel drive if fitted and be VOCd to drive on site	Strong	In development	Onsite Medical facility and ESO daily site inspections of area and signage	Strong	Action			open	Unlikely	Moderate	Medium		Tellus Operations	
OP19			Hazards/Events	OP19.4	Fauna	Local Wildlife accessing into cell via a tear or unsecured section of air dome		Vehicle vs Fauna causing damage and potential injury Personnel verse fauna causing injury	Moderate					Possible	Moderate	Medium	wildlife warning signs be visually vigulant and maintain safe distance contact site ESO for assistance ensure rubbish control inplace to help prevent local wildlife entering camp area	Satisfactory	In development	Remove Fauna from area by an authorised person Report to Sandy Ridge ESO and supervisor	Satisfactory	Action			open	Rare	Moderate	Low		Tellus Operations	
OP19			Hazards/Events	OP19.5	environmental impacts	ruptured receprical leaking waste		contamination to environment fauna and floora impact		Moderate				Possible	Moderate	Medium	spill kits placed at designated points for ease of access inspections of hazardouse waste containers entering site self bunded containers where required to prevent spills	Satisfactory	In development	Onsite eso to provide assistance as required daily inspections carried out and any visable spills to be cleaned up immediately	Improvement required	Action			open	Rare	Moderate	Low		Tellus Operations	

TELLUS

Sandy Ridge Facility

Access Roads - Traffic Management Plan

Management Plan

Tellus Holdings Ltd

August 19

Doc ID: SR-08.601.01

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DOCUMENT CONTROL

The signatures below certify this **Access Roads Traffic Management Plan** has been reviewed, accepted and demonstrates that the signatories are aware of all the requirements contained herein and are committed to ensuring their provision.

	Name	Signature	Position	Date
Prepared by	David Parker		Sandy Ridge Facility Manager	16/08/2019
Reviewed by	Richie Phillips		General Manager HSECQ	16/08/2019
Approved by	Michael Ingram		Chief Operating Officer	16/08/2019

AMENDMENT RECORD

This **Access Roads Traffic Management Plan** is reviewed, audited and updated to ensure its continuing relevance to the systems and process that it describes. A record of contextual additions or omissions is given below:

Page No.	Context	Version	Date
-	Initial Release	0	16/08/2019

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TABLE OF CONTENTS

Appendices

ABBREVIATIONS & DEFINITIONS

AS	Australian Standard
ATM	Aggregate Trailer Mass
BAC	Blood Alcohol Concentration
GVM	Gross Vehicle Mass
Hwy	Highway
IWDF	Intractable Waste Disposal Facility
km	kilometres
Km/hr	Kilometres per hour
m	metres
Tellus	Tellus Holdings Ltd.
the Facility	The Sandy Ridge Facility
TMP	Traffic Management Plan
UHF	Ultra-High Frequency
WA	Western Australia

Heavy Vehicle	Heavy Vehicles are vehicle that: • A heavy vehicle has a Gross Vehicle Mass (**GVM**) or Aggregate Trailer Mass (**ATM**) of more than 4.5 tonnes. • Each heavy vehicle type requires a specific driver's licence HR, HC, MC.
Light Vehicle	Light vehicles are vehicles that: • Have a Gross Vehicle Mass equal to or no greater than 4.5 tonne, • Constructed or equipped to seat no more than 12 passengers (including driver); and • Are road registrable. • This Includes but not limited to: cars, wagons, utilities, buses.
Mobile Equipment	Mobile equipment is self-propelled, tracked and rubber tyred equipment, categorised into 2 groups: • Light Vehicles. • Surface Mobile Equipment.
Mount Walton Road	• Access from Great Eastern Highway to the Facility. • Rail corridor crossing Mount Walton Road. • Any road or track that intersects or crosses Mount Walton Road.

1 INTRODUCTION

1.1 Project overview

Tellus Holdings Ltd ('**Tellus'**) has Environmental Approval (refer to Ministerial Statement 1078) to construct and operate the Sandy Ridge Facility (the '**Facility'** and/or '**Project'**). The Facility involves the construction and operation of an open-cut kaolin mine and complementary waste storage and disposal facility with supporting above-ground infrastructure in the Shire of Coolgardie over 25 years.

The Facility is located approximately 75 kilometres (km) north east of Koolyanobbing, and approximately 240 km north west of Kalgoorlie, in the Shire of Coolgardie, within the Goldfields Region of Western Australia (**WA**).

The Facility is located on unallocated Crown Land and accessed from the Great Eastern Highway by the Mount Walton Intractable Waste Disposal Facility (**IWDF**) access Road, which leaves the highway approximately 96 km east of Southern Cross and 90 km west of Coolgardie. After travelling approximately 90 km north on the IWDF Access Road, access to the Facility is gained by turning west onto the M Mount t Dimer Road for 4.5 km, then north for 4 km along a new access road to the Facility.

This Traffic Management Plan (**TMP**) forms part of the Sandy Ridge Safety Management Plan and provides details on how road users are considered likely to travel to or from site.

1.2 Purpose and scope

This TMP describes the controlling traffic movement for vehicles accessing the Facility via the Mount Walton Road, including any accesses that intersect or cross the Mount Walton East Road. The purpose of the TMP is to provide controls with the intent to reduce the risk of injury or incident in managing traffic movements accessing to and from the site.

This TMP shall apply to all personnel who drive to and from the Facility along Mount Walton Road.

1.3 Objectives

The objectives of this TMP are to:

- Provide a safe environment for all road users.
- Provide protection to Workers, visitors, agents of Tellus and general public from traffic hazards that may arise as a result of increased traffic activity.
- Ensure access to adjacent premises is maintained at all times.

To achieve these above objectives, the TMP shall ensure:

- Whenever possible a sufficient number of traffic lanes to accommodate vehicle movements are provided that delays, and traffic congestion are kept to a minimum and within acceptable levels
- That appropriate/sufficient warning and information signs are installed, and that adequate guidance is provided to delineate the travel paths through the work site.
- The work area is free of hazards and all users are protected from excavations/obstructions v) that all needs of road users are accommodated on and through the work site during maintenance activities
- Provision for safety procedures to enable work site personnel to enter or leave the work area in a safe manner.

2 REGULATORY FRAMEWORK

Traffic management works, and control devices shall be conducted in accordance with:

- *Mine Safety and Inspection Act 1994*.
- Mine Safety and Inspection Regulation 1995.
- *Occupational Safety and Health Act 1984* (the OSH Act)).
- Occupational Safety and Health Regulations 1996 (the OSH regulations).
- Traffic Management for Works on Roads, Code of Practice, Main Roads WA (MRWA), September 2018.
- Road Traffic Code 2000 (WA).
- Australian Standard (**AS**) 1742.3-2009 Manual of uniform traffic control devices - Traffic control for works on roads[1].
- AS/NZS ISO 31000-2018 Risk Management, Principles and Guidelines.
- AS/NZS 4602 | High Visibility Safety Garments.

2.1 *Mine Safety and Inspection Act 1994*

The *Mines Safety and Inspection Act 1994* imposes general duty of care provisions to maintain safe and healthy workplaces at mining operations and protect people at work from hazards. General duty of care obligations apply to:

- Employers.
- Employees.
- Contractors and their employees.
- Labour hire agents and workers.
- People involved in the design, supply, installation and maintenance of plant.

The Act outlines the obligations of each group and provides penalties for any breaches of those obligations to help prevent unsafe situations. It provides a framework where the general duty of care is supported by consultation, cooperation, workplace standards and procedures to resolve issues. The concept of general duty of care is the guiding principle for all other parts of the Act.

2.2 Mine Safety and Inspection Regulation 1995

The Mines Safety and Inspection Regulations 1995 describe some of the requirements that apply to specific work situations. While the regulations must be complied with, the overriding responsibility is to comply with the general duties in the Act.

[1] Except where expressly overridden by the Traffic Management for Works on Roads, Code of Practice (Mainroads WA).

2.3 *Occupational Safety and Health Act 1984*

The OSH Act provides for the promotion, coordination, administration and enforcement of occupational safety and health in WA. The OSH Act places certain duties on employers, employees, self-employed people, manufacturers, designers, importers and suppliers. It also places emphasis on the prevention of accidents and injury. In addition to the broad duties established by the OSH Act, the legislation is supported by a further tier of statute, commonly referred to as regulations, together with a lower tier of non-statutory codes of practice and guidance notes.

2.4 Occupational Safety and Health Regulations 1996

The Occupational Safety and Health Regulations 1996 (the OSH regulations) sets minimum requirements for specific hazards, work and administrative practices in relation to work safety and health.

2.5 Traffic Management for Works on Roads, Code of Practice

The MRWA Code of Practice 'Traffic Management for Works on Roads' details the steps that need to be taken in order to meet requirements of the OSH Act.

2.6 Road Traffic Code 2000

Details laws applying to road use in WA.

2.7 Australian Standard 1742.3-2009 Traffic Control Devices for Works on Roads

Australian Standards AS 1742.3:2009 - Manual of uniform traffic control devices – Part 3: Traffic control devices for works on roads is a nationally agreed standards document outlining the use of traffic control devices on the road network and has been adopted by all Australian jurisdictions.

2.8 AS/NZS ISO 31000-2018 Risk Management, Principles and Guidelines

AS/NZS ISO 31000 is a family of standards relating to risk management codified by the International Organization for Standardization (ISO). The purpose of ISO 31000:2018 is to provide principles and generic guidelines on risk management. ISO 31000 seeks to provide a universally recognised paradigm for practitioners and companies employing risk management processes to replace the myriad of existing standards, methodologies and paradigms that differed between industries, subject matters and regions.

2.9 AS/NZS 4602 High Visibility Safety Garments

The Australian Standard AS/NZS4602 specifies the visual requirement for high visibility safety garments for occupational wear by people who may be exposed to hazard from moving traffic, moving plant or equipment in high risk situations. The garments specified in the Australian Standard AS/NZS4602.1:2011 are classified as follows:

- **Class D** – a garment designed for daytime use only. Class D garments are intended to provide the wearer with high visibility under daylight viewing conditions and generally not effective when viewed under artificial light.
- **Class N** – a garment designed for night-time use only.
- **Class D/N** – a garment designed for both day and night use, comprising retroreflective elements on a fluorescent or other non-retroreflective high visibility background material.

3 RESPONSIBILITIES

Registered Manager	• Responsible for traffic management for their respective work area. • All traffic control measures detailed in this TMP are in place and maintained in accordance with relevant Acts, Codes, Standards and Guidelines. • Suitable communication and consultation with affected stakeholders is maintained at all times. • Inspections of traffic control measures are undertaken in accordance with this TMP with results recorded and any variations detailed together with reasons. • Review feedback from inspections, worksite personnel and take action to amend traffic control measures as appropriate. • Arrange or undertake necessary audits with incident investigations.
Manager / Supervisor	• Instruct workers on relevant safety Standards, including the correct wearing of Personal Protective Equipment and other equipment as required. • Allocate vehicles that are fit-for-purpose and are in safe working order. • Ensure traffic control measures are implemented/maintained in accordance with this TMP. • Check that vehicle defects are being reported and that repairs are made before a vehicle is put back into use. • Check that vehicles are being routinely inspected and maintained. • Undertake or submit required inspection and evaluation reports to the Registered Manager. • Render assistance to road users and stakeholders when incidents arising out of the works affect road network performance, or the safety of road users including Workers and take appropriate action to correct unsafe conditions, including any necessary modifications to this TMP.
Employees and other Operators	• Only operate a vehicle if appropriately licensed, trained and qualified to do so safely. • Only operate vehicles which are fit-for-purpose. • Check that your vehicle is in safe working order before commencing a journey. Conduct a documented pre-start check of the vehicle(s) they will use prior to operation at any time and ensuring the paperwork associated with the pre-start check is delivered in a timely manner to their immediate Manager / Supervisor. • Report any vehicle defects to your Manager / Supervisor or person in charge. • Reporting all incidents and non-conformances associated with this TMP to their Manager / Supervisor. • Use the safety equipment associated with the vehicle at all times when the vehicle is in operation on and off the site. • Do not interfere, alter or disable any safety equipment or control(s) associated with the vehicle they are operating. • Wear a seat belt at all times while in a moving vehicle. • Must not leave a running vehicle unattended unless it is parked in a safe manner with parking controls engaged.

4 TRAFFIC MANAGEMENT

4.1 Site access

All vehicles traveling to and from the Facility must use the Mount Walton Road via the Great Eastern Highway (Hwy) (refer to **Appendix A**).

All drivers shall obey the traffic signs displayed on the route and any instructions given by the escort person if under escort.

The maximum speed limit along Mount Walton Road is **80 km/hr**; however, personnel accessing and leaving the Facility must drive to the prevailing conditions and be aware that there are other road user not associated with the Facility.

Signage with Ultra High Frequency (**UHF**) Channel number 39 and emergency locator points will be displayed along the access road.

4.2 Crossing rail corridor where intersects Mount Walton Road

REFFER TO MOUNT WALTON ROAD RAILWAY CROSSING TMP

4.3 Intersecting or crossing roads and access tracks

At various locations along the access roads are numerous tracks that access from the sides and even cross over, personnel are to be aware of these points and to drive with caution when approaching them. Where major crossings are in affect signage will be installed to control the intersection. Where minor crossings are situated clearing of the verge will occur to ensure uninterrupted vision is achieved these are classed as 'uncontrolled intersections' and the right of way rule must be implemented.

4.4 Carina Airport and processing plant road crossing

This crossing has minimal usage as the Carina Mine is currently in care and maintenance and is controlled with signage which has been implemented into this plan (refer to **Appendix B**).

4.5 Mount Walton/Sandy Ridge Road intersection

The Mount Walton/Sandy Ridge Road intersection will be controlled in accordance with the requirements provided in **Appendix C** and in conjunction with a risk assessment. The intersection will be next to the current Mount Walton/ Mount Dimer Road intersection with an approximate five metre buffer of bush separating the two. Signage will need to incorporate both roads to ensure safe passage for road users.

4.6 Mount Dimer Road to Aerodrome

At various locations along the Mount Dimer Road are numerous unsealed tracks that access from the sides and cross over, personnel are to be aware of these points and to drive with caution when approaching them. Where major crossings are in affect signage will be installed to control the intersection along with a risk assessment (refer to **Appendix F**). Controls for minor crossing that are classed as 'uncontrolled intersections' will be assessed through a risk assessment to determine if signage or clearing is required.

The maximin speed limit along Mount Dimer Road is 80 km/h.

4.7 Bore Field Access Road

The Bore Field Access Road is to allow safe access along the bore field pipeline and to the bore field to allow for inspections and maintenance activities. The Bore Field Access Road crosses Mount Dimer Road and will also be used as access to and from Sandy Ridge Camp and the Facility to the Mount Dimer aerodrome.

Safe passage will be achieved by signage along the Bore Field Access Road and at the Mount Dimer Road intersection The maximin speed along the Bore field access road is 60km/h, drivers also need to drive to conditions (ref to **Appendix D**) this will be done in conjunction with a risk assessment (**Appendix F**)

4.8 Facility to Camp Access Road

All vehicles traveling to and from the Sandy Ridge Facility to Camp must access via the Camp/Sandy Ridge access Road that links the two facilities (**Appendix E**)

All drivers shall obey the traffic signs displayed on route and always use the drive to conditions approach. Maximum speed limit along the camp access road is 60km/h and UHF channel 39, high traffic times will be prior to start of shift in the mornings and after shift in the afternoons, control of this is covered in the attached risk assessment (**Appendix F**).

4.9 Escorting vehicles

As required oversize vehicles may need to be escorted along the Mount Walton Road. The pilot escort vehicle will ensure that:

- The driver of the load understands all access requirements and is briefed on the designated route.
- Radio communication is established between the pilot vehicle and the load vehicle. The pilot vehicle has hazard lights on and flashing beacon on whilst escorting.
- The pilot vehicle will ensure that there is no visible traffic if so will ensure oncoming traffic is pulled over in a safe place to allow oversize safe passage

4.10 Signage and barricades

All signs will be in accordance with AS 1742 (and manufactured in accordance with AS 1743), shall be at least size ‘B’ and will be Class 1 retro-reflective. Prior to installation, all signage shall be checked for damage or cleanliness and repaired, replaced or cleaned as necessary. Signage and devices shall be erected in accordance with locations on the TCD’s such that they:

- Are properly displayed and securely mounted.
- Are within the driver’s line of sight.
- Cannot be obscured from view.
- Do not obscure other devices from the driver’s line of sight.
- Do not become a possible hazard to workers or vehicles.
- Do not deflect traffic into an undesirable path.

Stop signs, warning signs (including advanced warning signals at rail crossing), Rail control signals and boom gates will be installed as required along the Mount Walton East road to control traffic movements

5 MONITORING AND MEASUREMENT

5.1 Site inspections and record keeping

The **Registered Manager** will ensure that this TMP is implemented and evaluated for effectiveness. The **Supervisor** shall inspect and monitor traffic movements along the access roads. The outcomes of the inspection will be diarised for information and assessment. Inspections shall be undertaken as required and at a minimum on the following occasions:

- During the hours of work daily.

A daily record of the inspections should be kept indicating:

- Condition of signage and road.
- If amendments are required.
- any significant incidents or observations associated with the traffic controls and their impacts on road users or adjacent properties.

Where significant changes to the traffic environment or adverse impacts are observed, the controls should be reviewed as a matter of urgency. Daily inspection sheets shall be completed by the **Supervisor** and reviewed for any amendments. All variations to the TMP/TCD, non-conformances, incidents and accidents shall be recorded.

5.2 TMP auditing

Compliance audits will be undertaken quarterly by Tellus to ensure all access roads continues to meet required standards.

5.3 Incident Reporting

In the event of a motor vehicle incident, the **Facility Manager** or **Emergency Services Officer** shall be notified immediately. Vehicles involved in an incident will not to be moved without explicit authority from the **Facility Manager**, or if the Local Police deem the area unsafe to the public and request removal.

In the event of a motor vehicle accident that results in the designated driver or others being injured, and or significant damage to property occurs, all possible assistance is to be rendered if safe to do so and Sandy Ridge **Emergency Response Team** are to be contacted immediately.

A full investigation into the incident will be undertaken in consultation with all parties as to identify the causal factors and to implement adequate controls to help reduce the risk of recurrence.

In the event of a motor vehicle incident a ‘For Cause Blood Alcohol Concentration’ (**BAC**) test will be conducted as part of the investigation.

Broken down vehicles and vehicles involved in minor non-injury crashes shall be temporarily moved to the verge as soon as possible after details of the crash locations have been gathered and noted. Suitable recovery systems shall be used to facilitate prompt removal of broken-down vehicles.

5.4 Risk identification and assessment

Risk analysis of the access roads has identified a number of risk events/items that will be managed by effective traffic management planning and the implementation of this TMP. A risk assessment register is presented in **Appendix F**. The assessment process has been undertaken in accordance with Australian Standard AS/NZS ISO 31000, Risk Management Principles and Guidelines.

Identified risks have been treated by development of this TMP. Unforeseen risks arising after the implementation of this TMP will be treated in accordance with standard work practices and procedures, where appropriate.

APPENDICIES

Appendix A – Great Eastern Highway/ Mount Walton Road Intersection

Appendix B – Carina Air Port and Processing plant road crossing

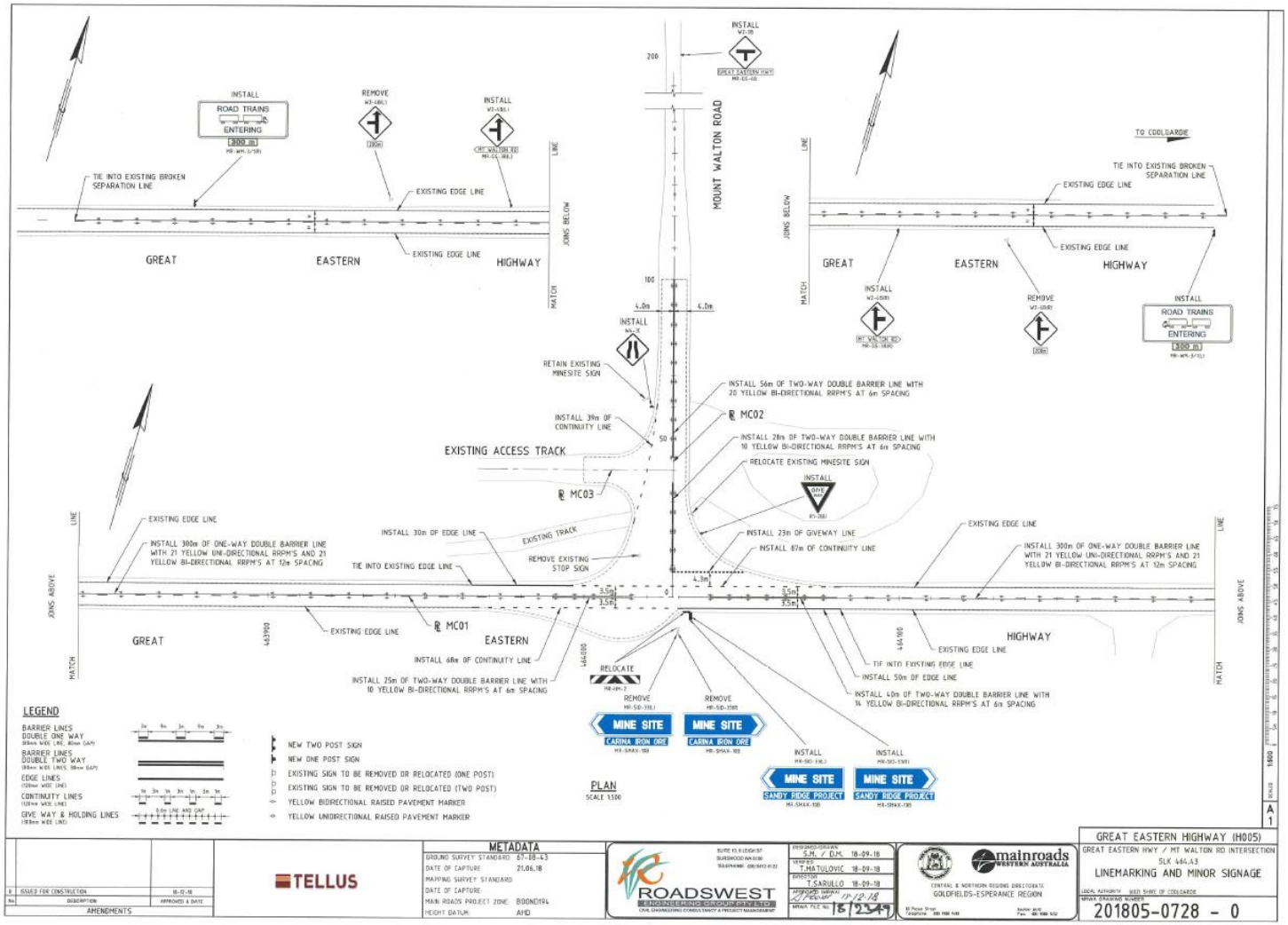
Appendix C - Mount Walton/Sandy Ridge Road Intersection

Appendix D – Bore Field Access Road and Mount Dimer Intersection

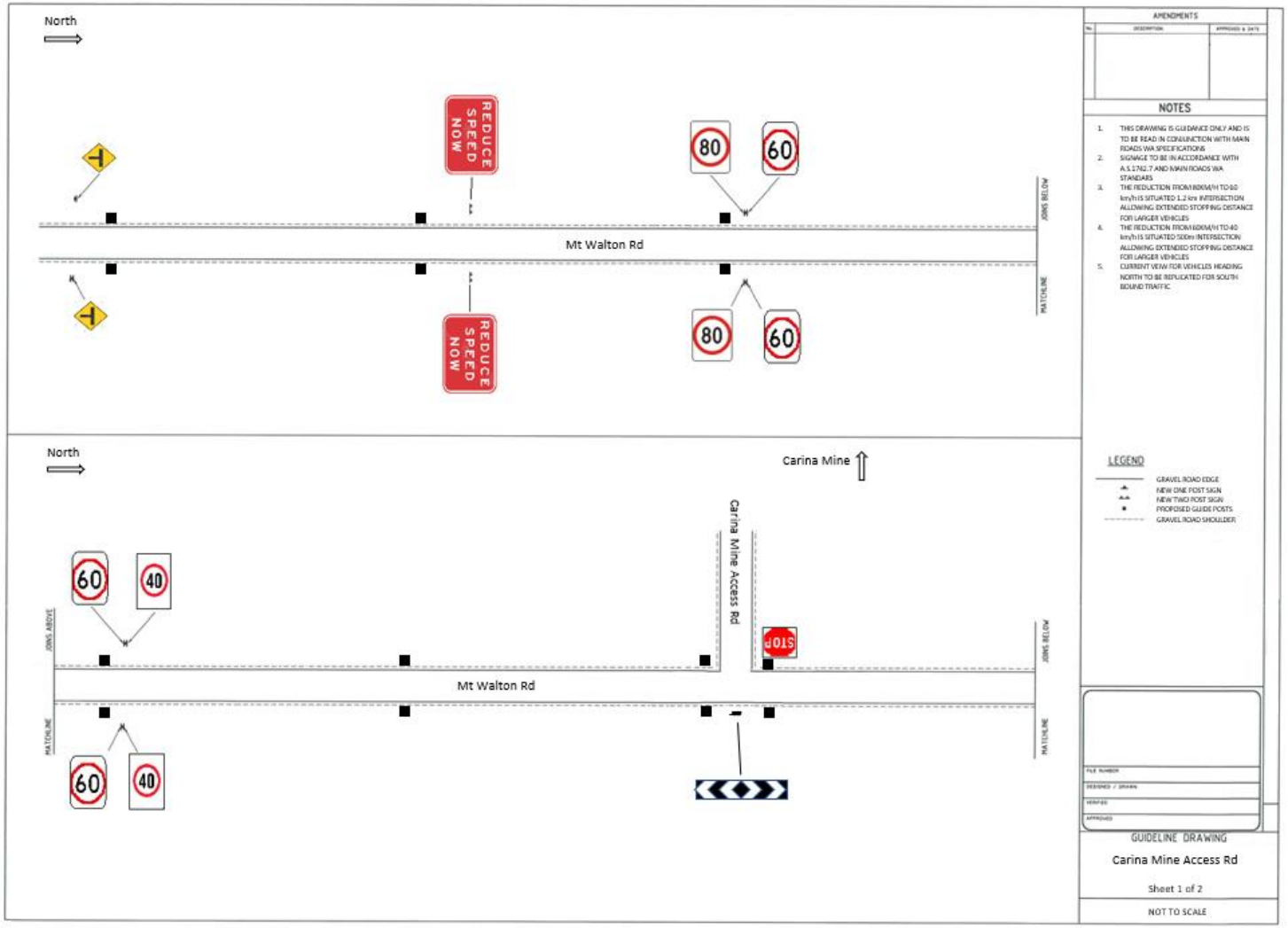
Appendix E – Camp/Sandy Ridge Facility Access Road

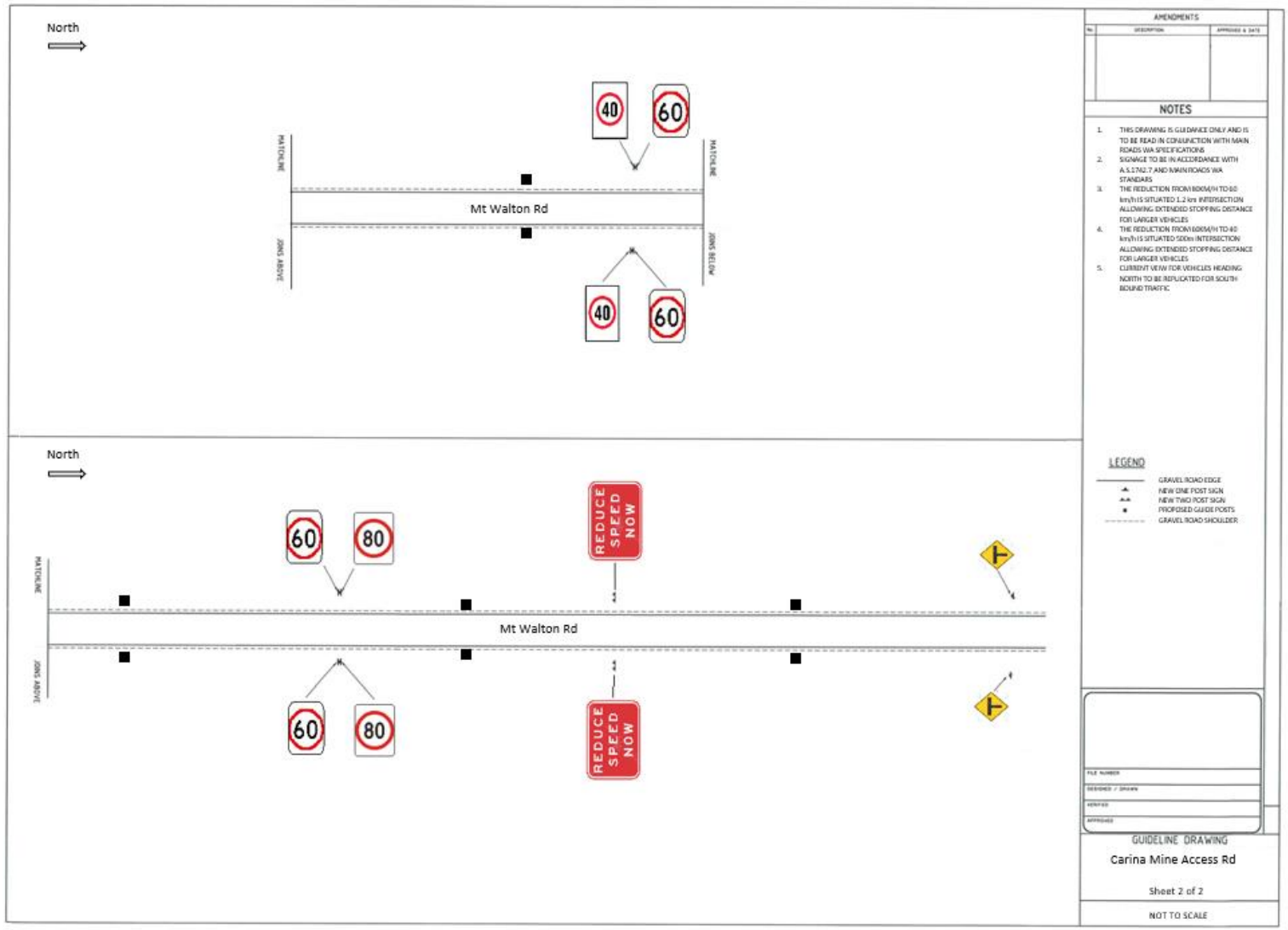
Appendix F – Risk Register

Appendix A - Great Eastern Highway/ Mount Walton Road Intersection



Appendix B - Carina Airport and Processing plant road crossing

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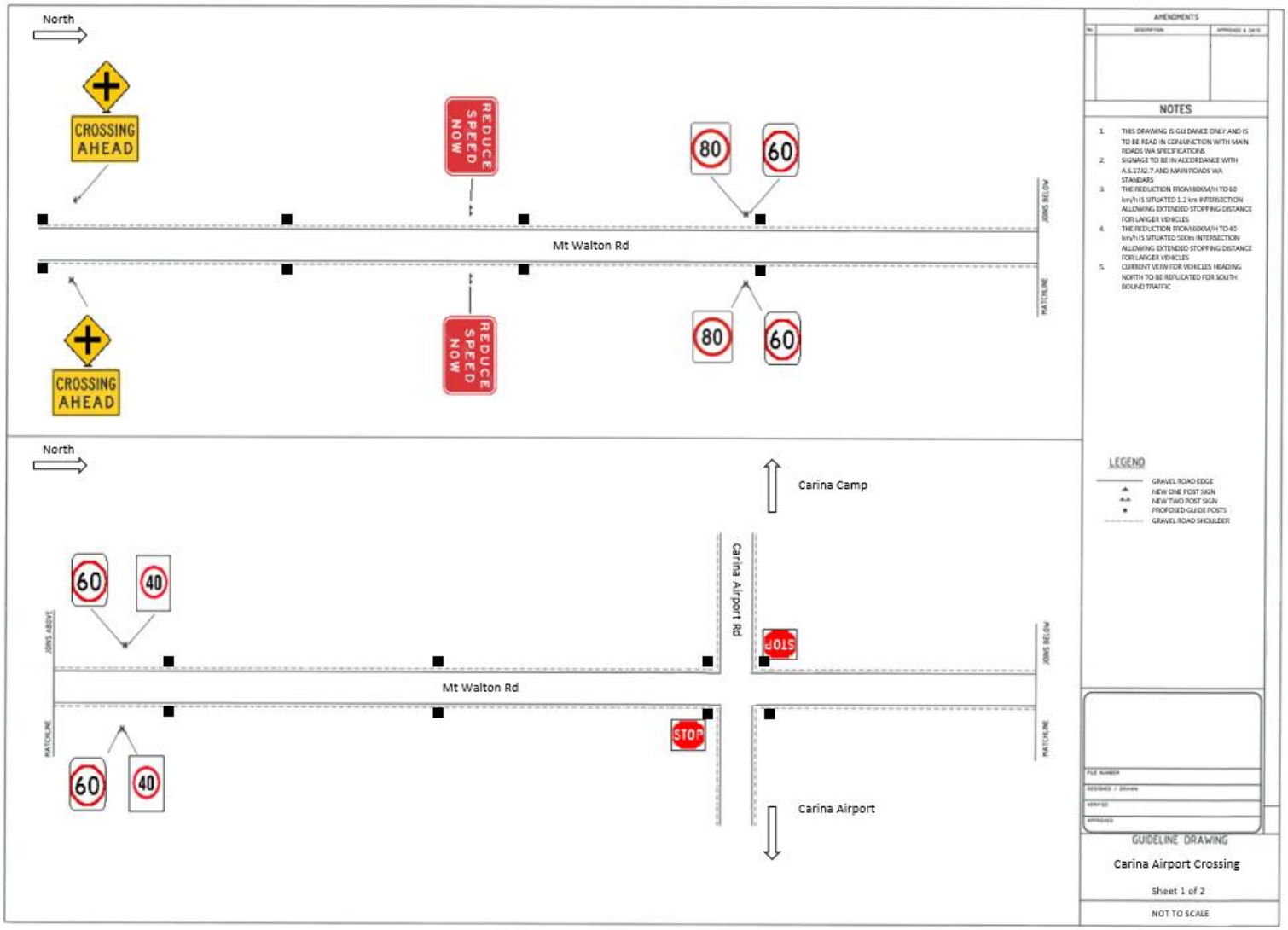
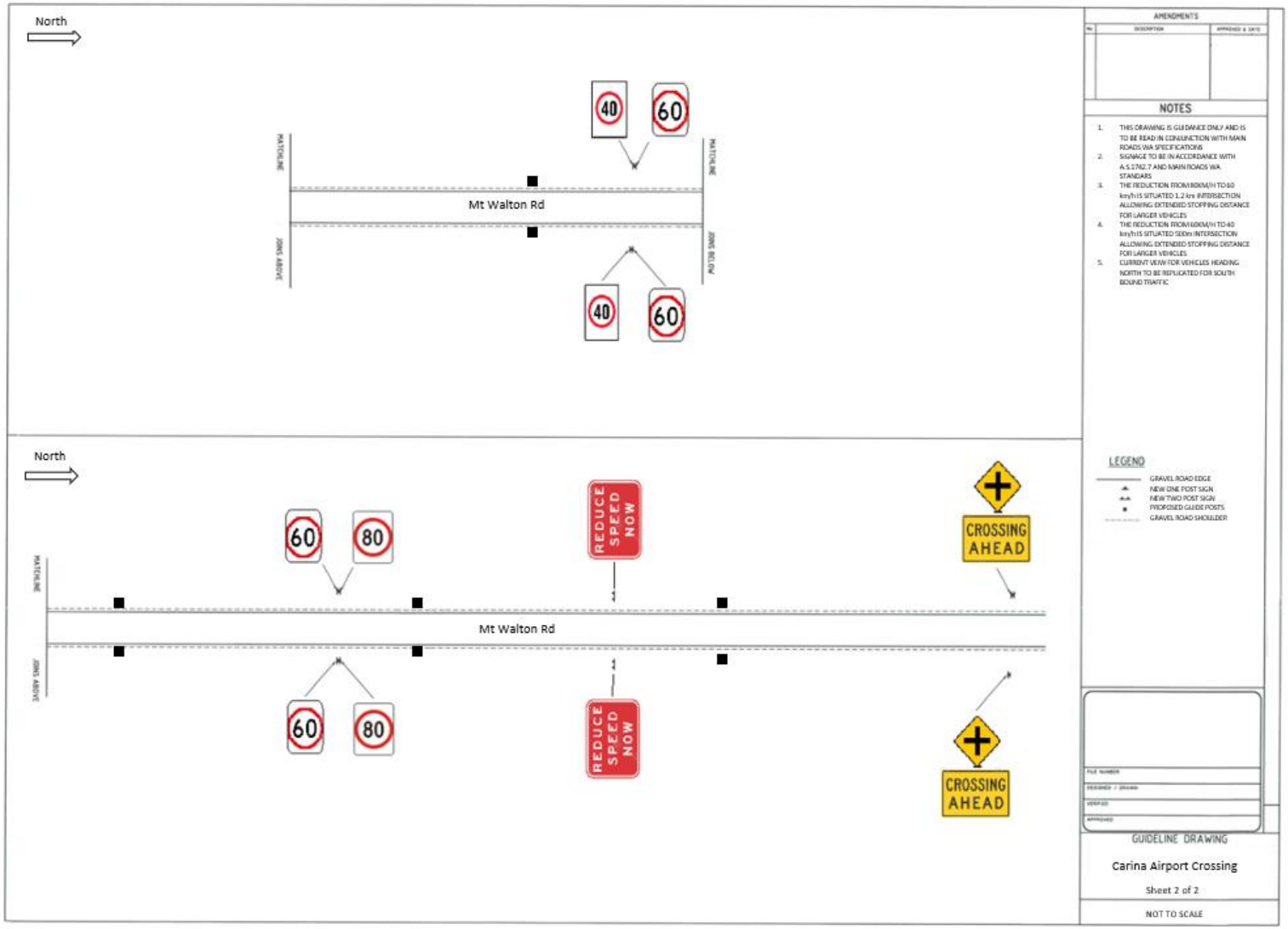
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH A.S.1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 80KM/H TO 60 km/h IS SITUATED 1.2 km INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
4. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
5. CURRENT VIEW FOR VEHICLES HEADING NORTH TO BE REPLICATED FOR SOUTH BOUND TRAFFIC
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
GUIDELINE DRAWING
Carina Mine Access Rd
Sheet 2 of 2
NOT TO SCALE


North
CROSSING AHEAD
REDUCE SPEED NOW
80
60
Mt Walton Rd
CROSSING AHEAD
REDUCE SPEED NOW
80
60
North
Carina Camp
60
40
Carina Airport Rd
STOP
Mt Walton Rd
STOP
60
40
Carina Airport
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS 1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 100KM/H TO 60 km/h IS SITUATED 1.2 km INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
4. THE REDUCTION FROM 100KM/H TO 40 km/h IS SITUATED 500m INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
5. CURRENT VIEW FOR VEHICLES HEADING NORTH TO BE REPLICATED FOR SOUTH BOUND TRAFFIC
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
GUIDELINE DRAWING
Carina Airport Crossing
Sheet 1 of 2
NOT TO SCALE


North
40
60
Mt Walton Rd
40
60
North
60
80
REDUCE SPEED NOW
CROSSING AHEAD
Mt Walton Rd
60
80
REDUCE SPEED NOW
CROSSING AHEAD
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS 1742.2 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 80KM/H TO 60 km/h IS SITUATED 1.2 km INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
4. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
5. CURRENT VIEW FOR VEHICLES HEADING NORTH TO BE REFLICKTED FOR SOUTH BOUND TRAFFIC
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
GUIDELINE DRAWING
Carina Airport Crossing
Sheet 2 of 2
NOT TO SCALE

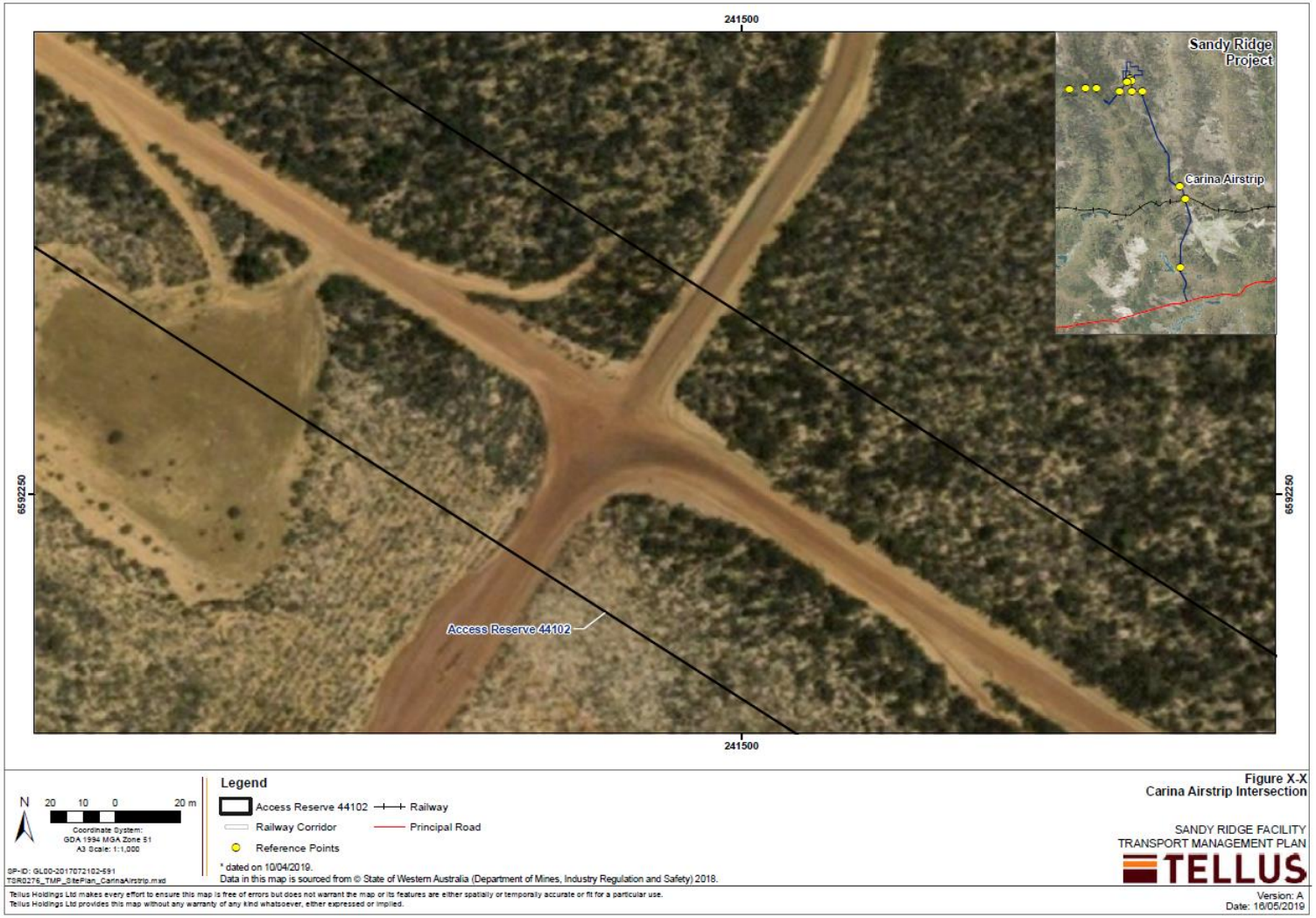

241500
6592250
Sandy Ridge Project
Carina Airstrip
Access Reserve 44102
241500
6592250
N
20 10 0 20 m
Coordinate System:
GDA 1994 MGA Zone 51
A3 Scale: 1:1,000
SP-ID: GL00-201707202-591
TSR0276_TMP_SitePlan_CarinaAirstrip.mxd
Legend
Access Reserve 44102
Railway
Railway Corridor
Principal Road
Reference Points
* dated on 10/04/2019.
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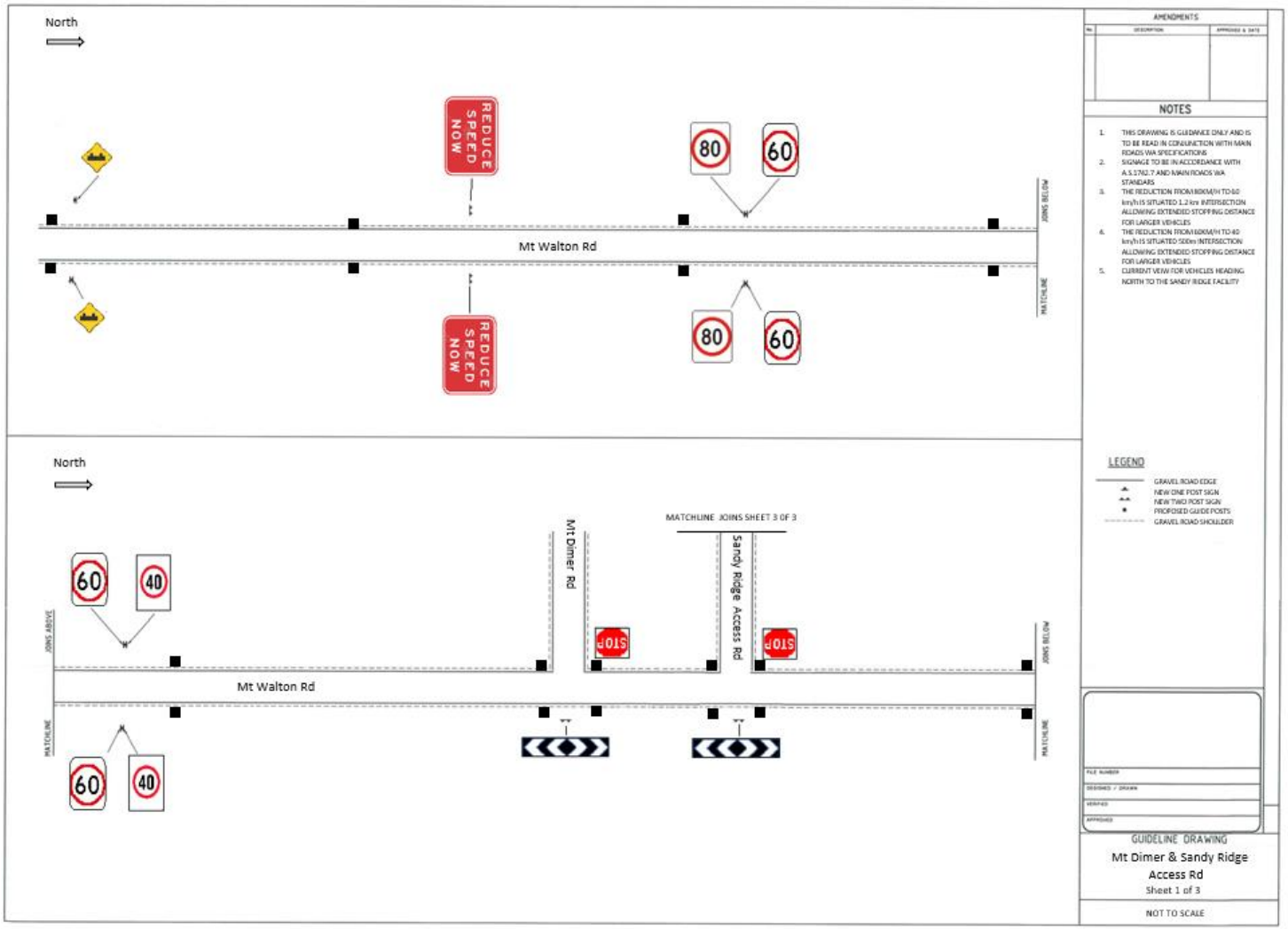
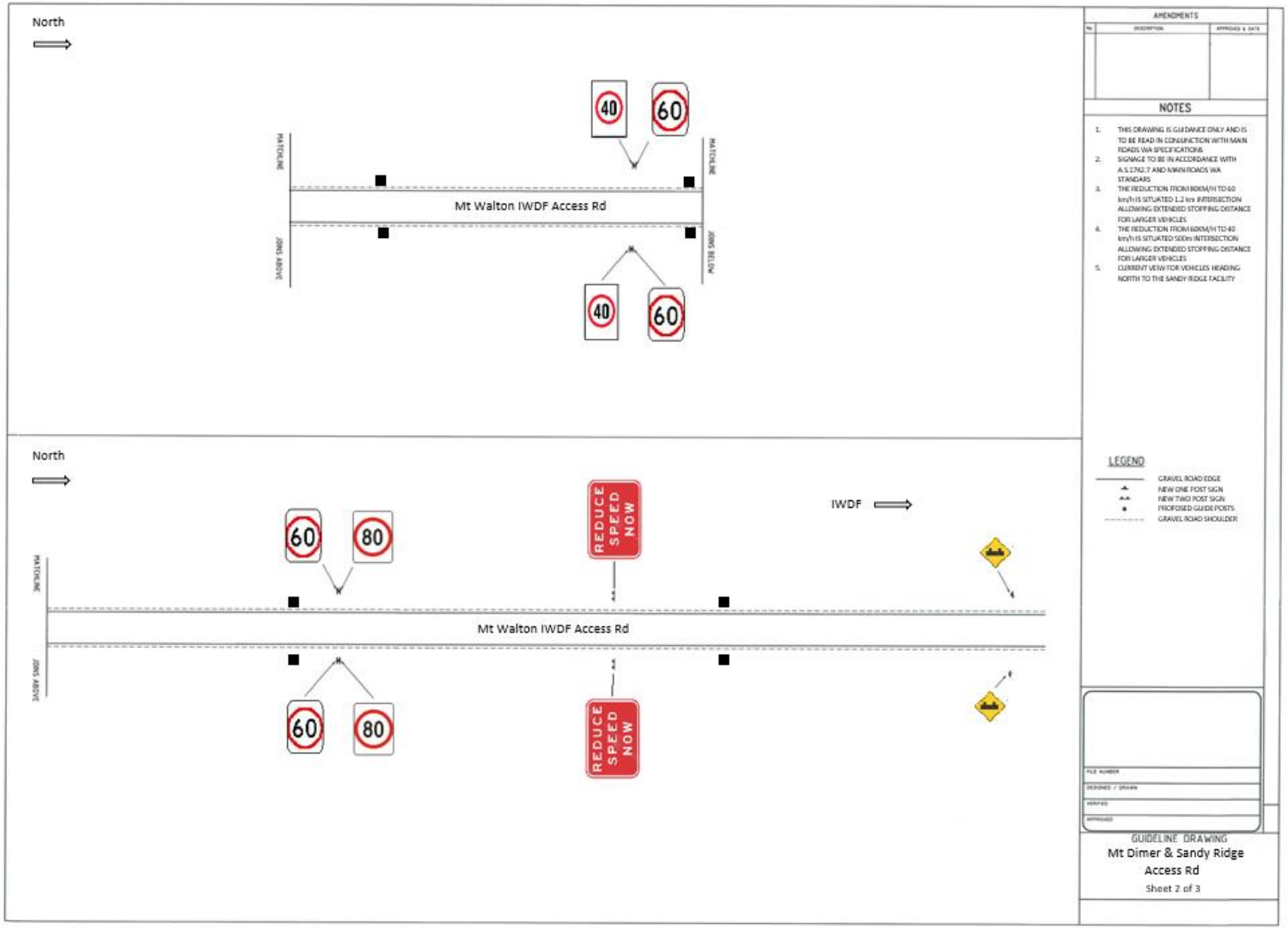
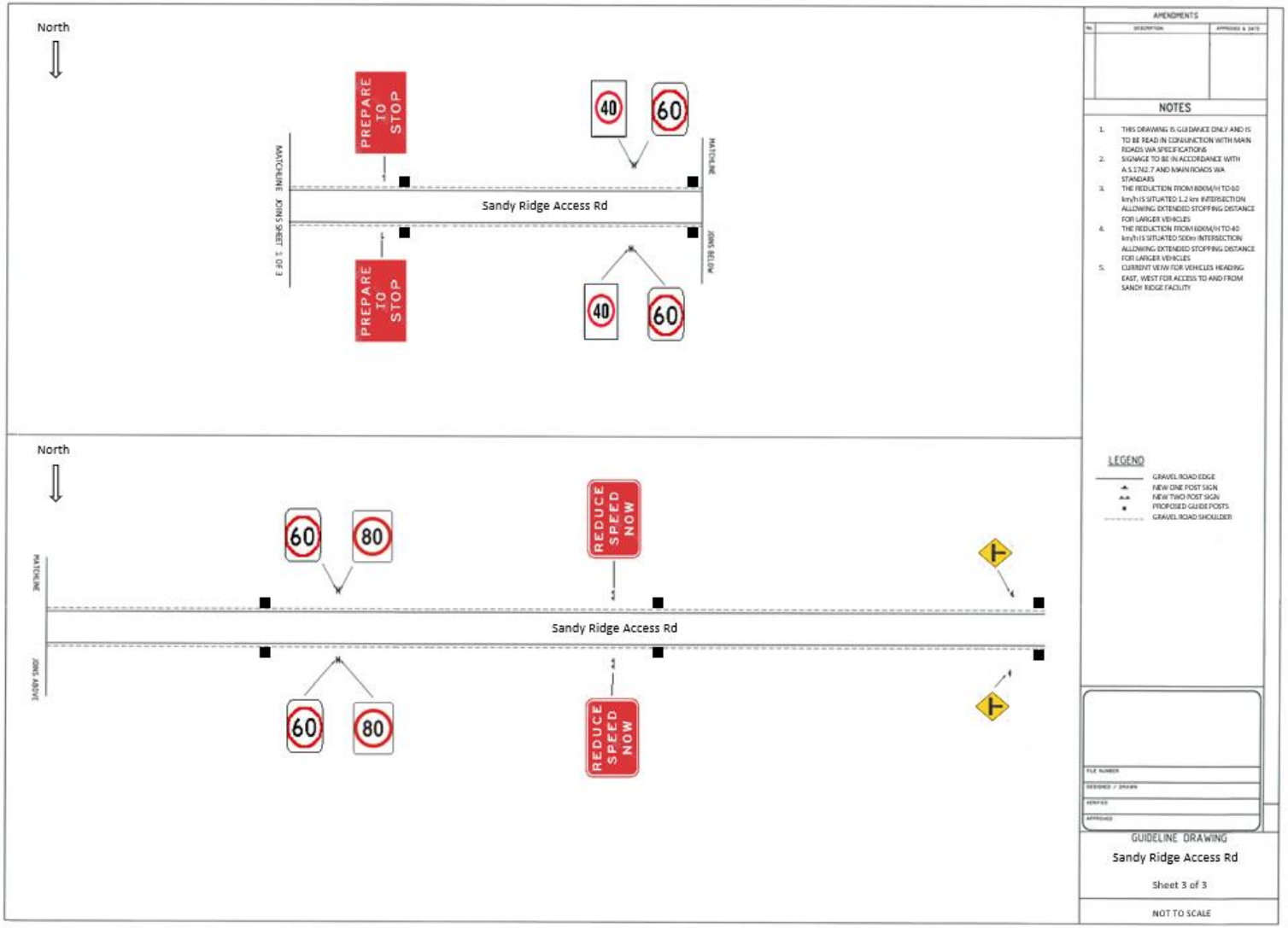
Figure X-X
Carina Airstrip Intersection
SANDY RIDGE FACILITY
TRANSPORT MANAGEMENT PLAN
TELLUS
Version: A
Date: 16/05/2019

Appendix C - Mount Walton/Sandy Ridge Road Intersection




North
40
60
Mt Walton IWDF Access Rd
40
60
North
60
80
REDUCE SPEED NOW
IWDF
Mt Walton IWDF Access Rd
60
80
REDUCE SPEED NOW
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH A.S.1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 80KM/H TO 60 km/h IS SITUATED 1.2 km INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
4. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
5. CURRENT VIEW FOR VEHICLES HEADING NORTH TO THE SANDY RIDGE FACILITY
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
GUIDELINE DRAWING
Mt Dimer & Sandy Ridge Access Rd
Sheet 2 of 3


North
PREPARE TO STOP
40
60
Sandy Ridge Access Rd
PREPARE TO STOP
40
60
North
60
80
REDUCE SPEED NOW
Sandy Ridge Access Rd
60
80
REDUCE SPEED NOW
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS 1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 80KM/H TO 60 km/h IS SITUATED 1.2 km INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
4. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
5. CURRENT VIEW FOR VEHICLES HEADING EAST, WEST FOR ACCESS TO AND FROM SANDY RIDGE FACILITY
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
GUIDELINE DRAWING
Sandy Ridge Access Rd
Sheet 3 of 3
NOT TO SCALE

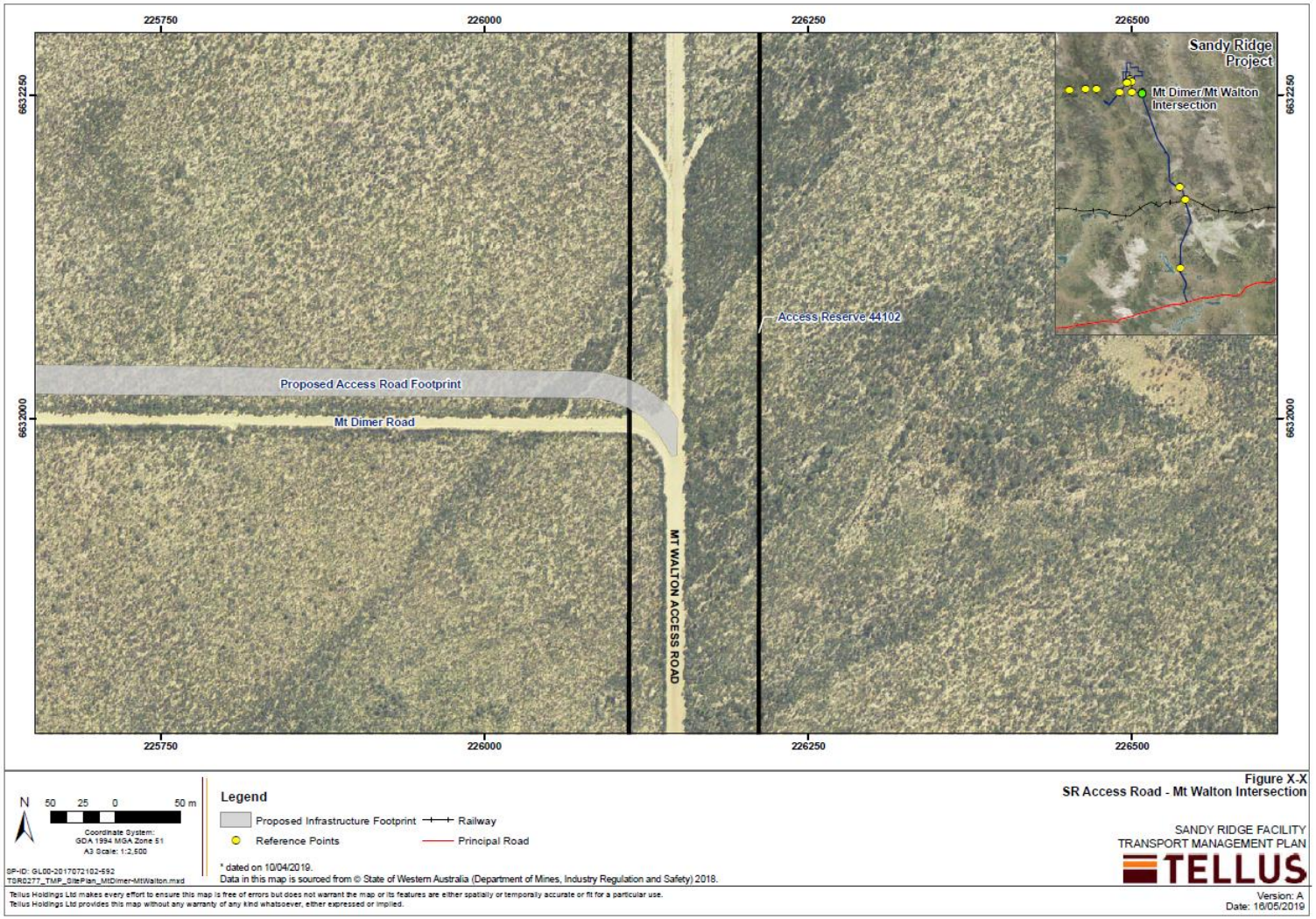

225750
226000
226250
226500
6632250
6632000
Sandy Ridge Project
Mt Dimer/Mt Walton Intersection
Access Reserve 44102
Proposed Access Road Footprint
Mt Dimer Road
MT WALTON ACCESS ROAD
N
50 25 0 50 m
Coordinate System:
GDA 1994 MGA Zone 51
A3 Scale: 1:2,500
SP-ID: GL00-20170721O2-592
TSR0277_TMP_SitePlan_MtDimer-MtWalton.mxd
Legend
Proposed Infrastructure Footprint
Railway
Reference Points
Principal Road
* dated on 10/04/2019.
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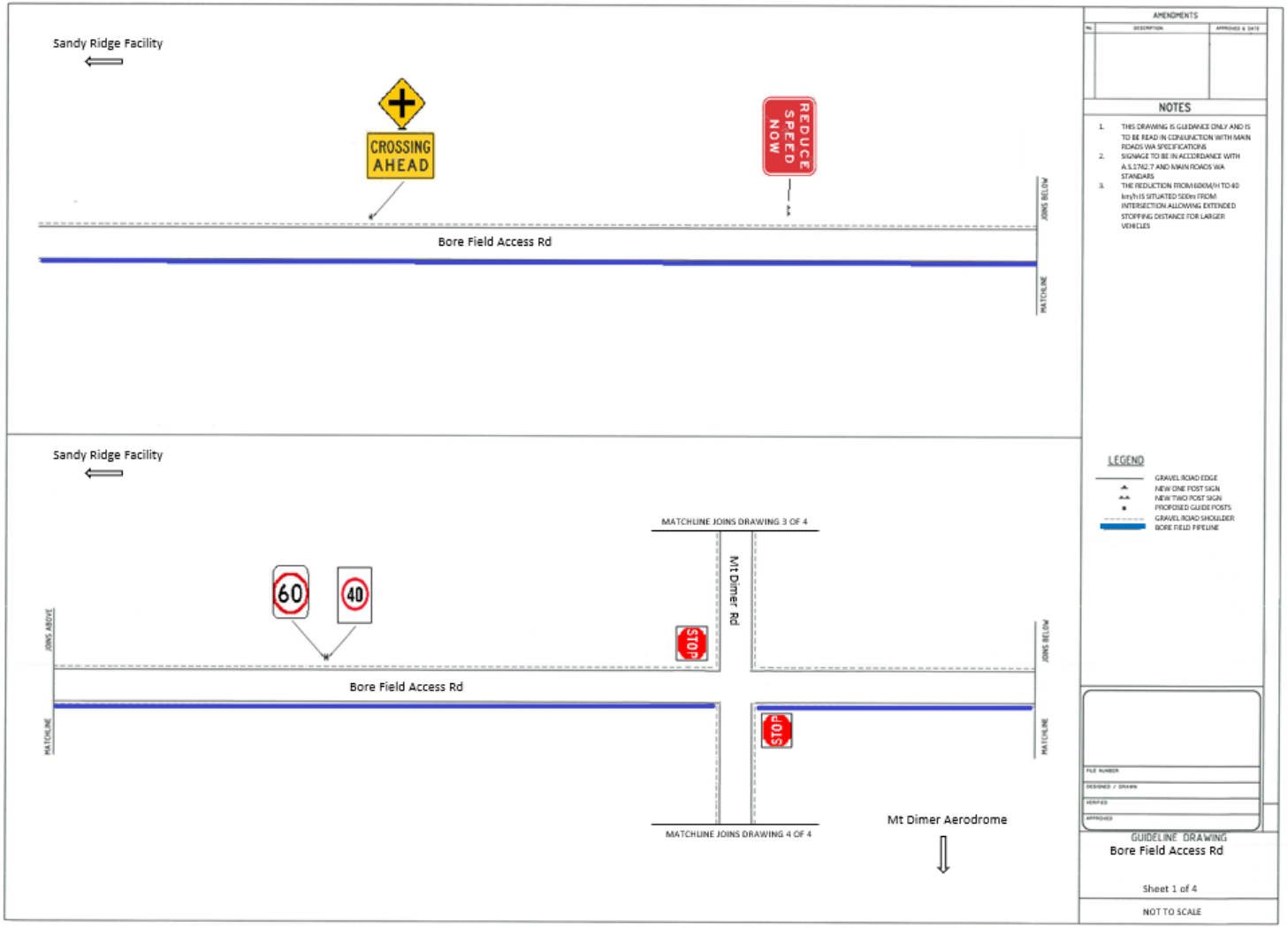
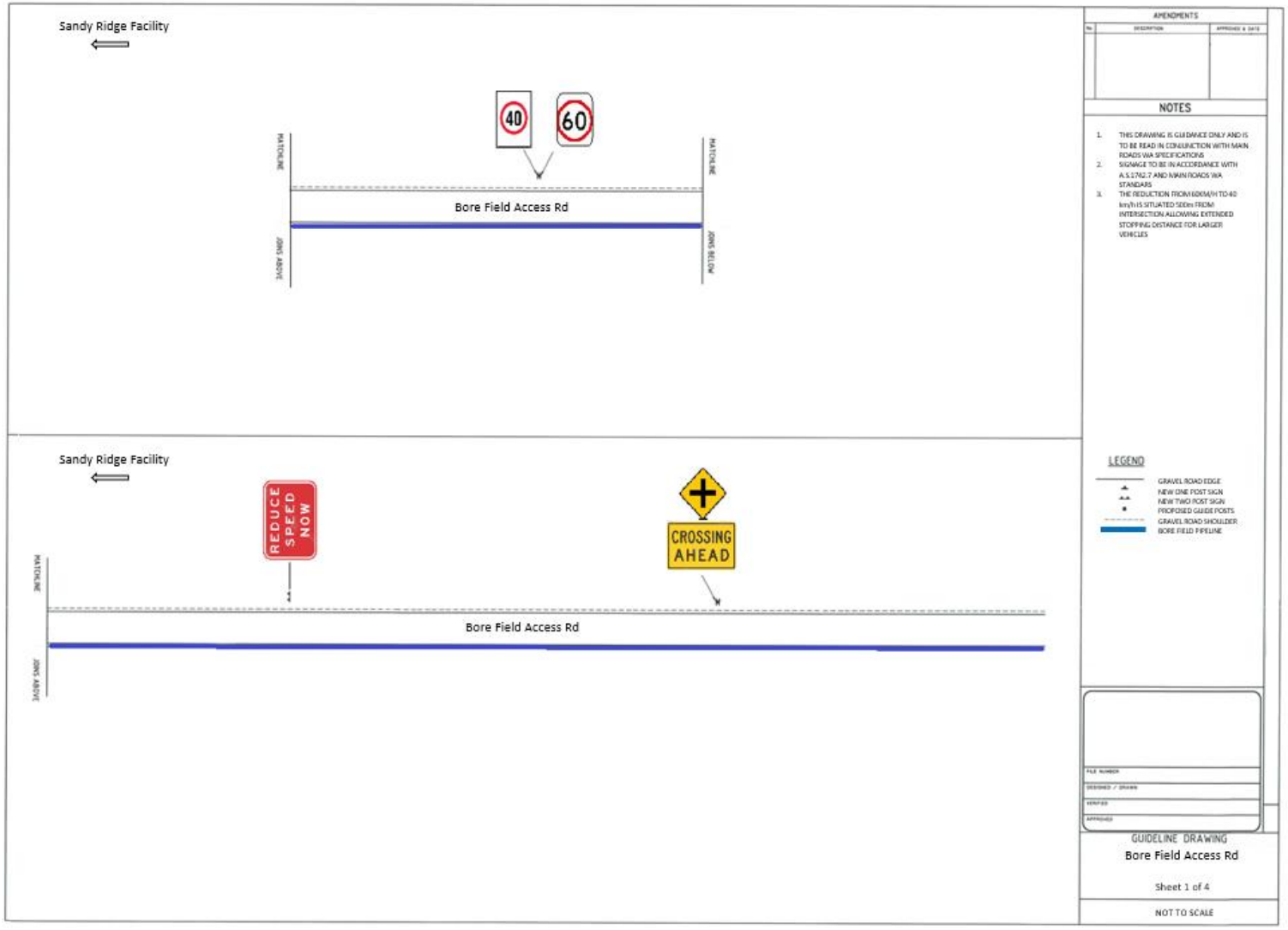
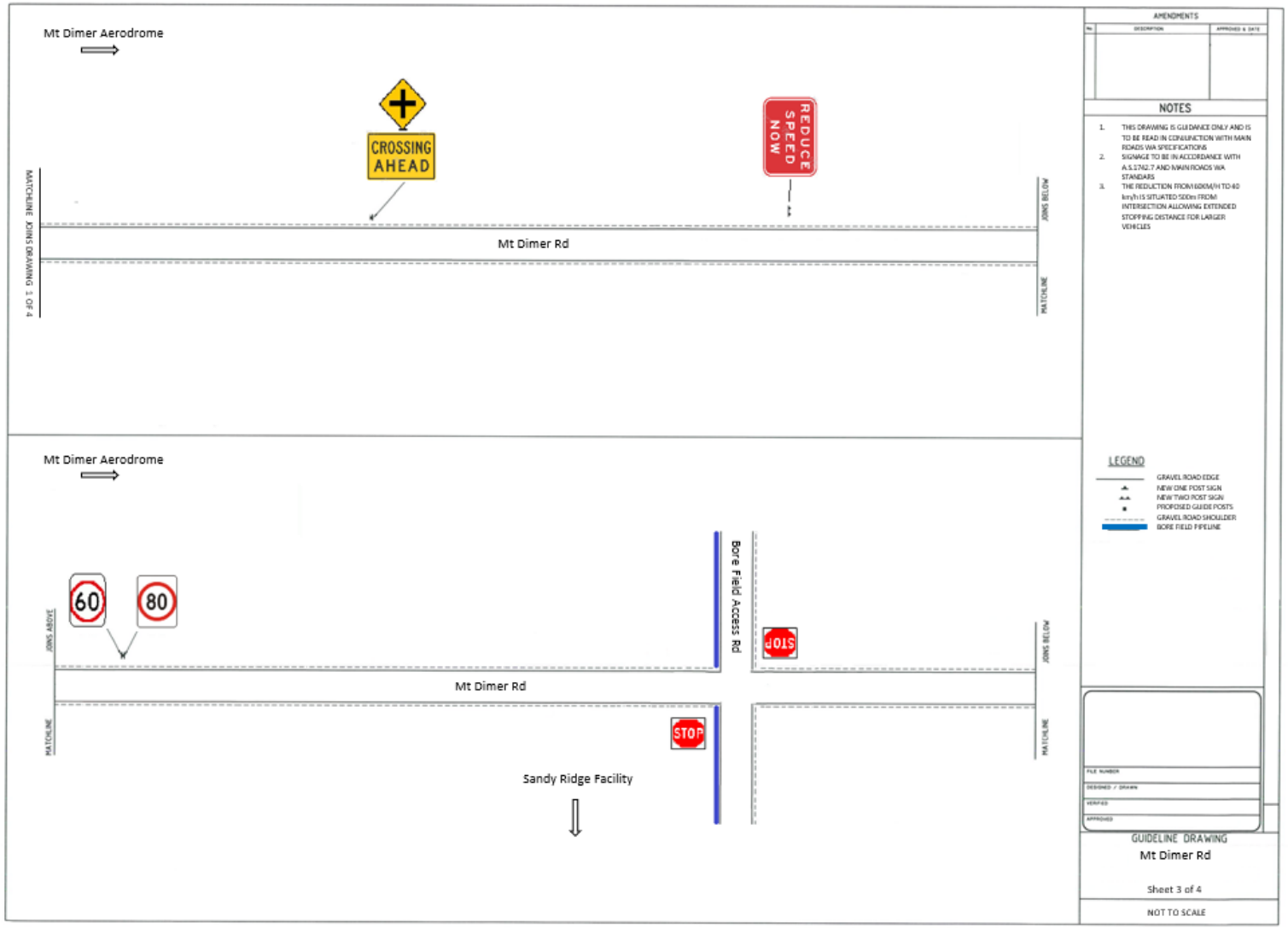
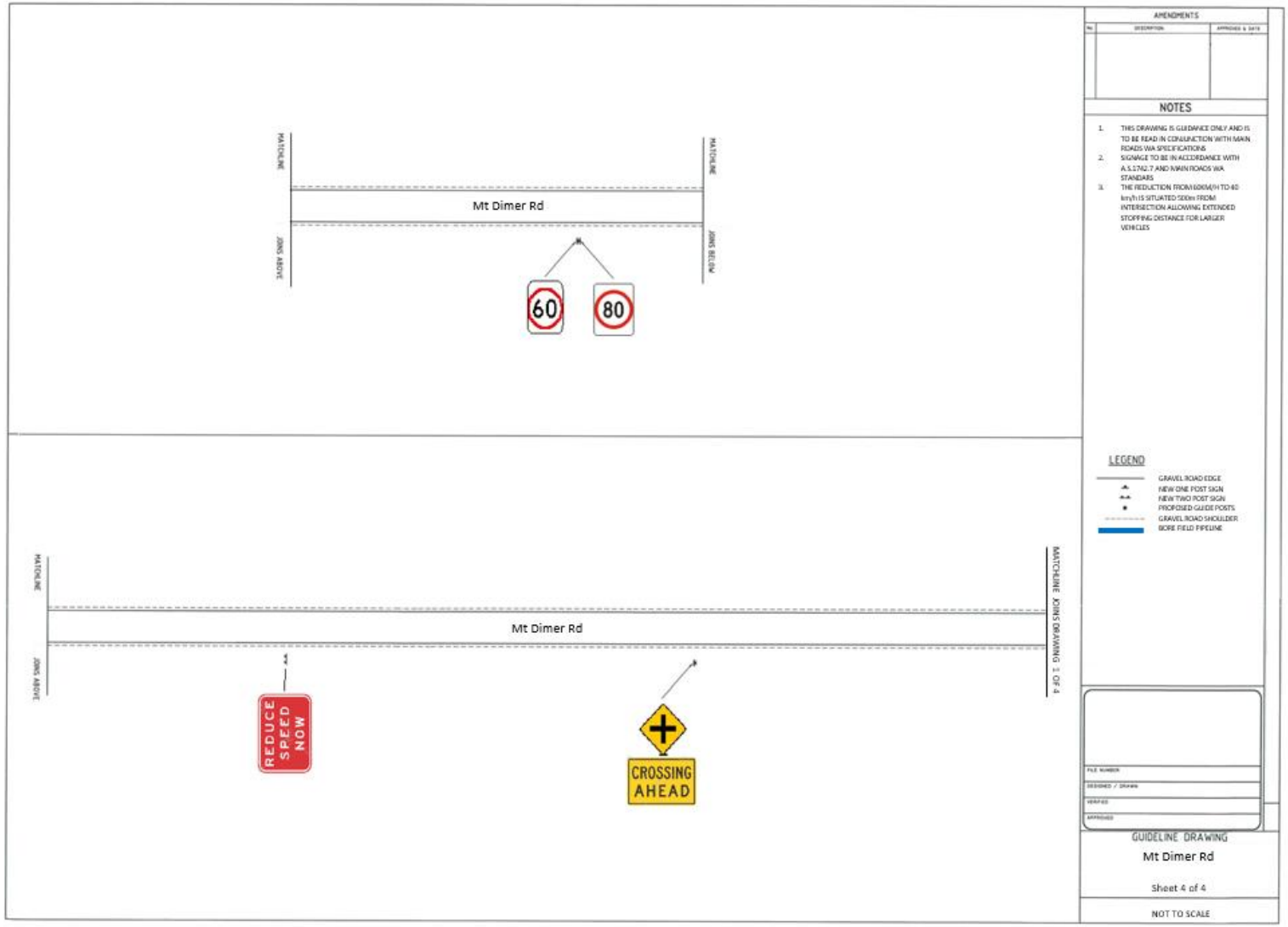
Figure X-X
SR Access Road - Mt Walton Intersection
SANDY RIDGE FACILITY
TRANSPORT MANAGEMENT PLAN
TELLUS
Version: A
Date: 16/05/2019

Appendix D - Bore Field Access Road and Mount Dimer Intersection




Sandy Ridge Facility
40
60
MATCHLINE
JOINS ABOVE
Bore Field Access Rd
JOINS BELOW
MATCHLINE
Sandy Ridge Facility
REDUCE SPEED NOW
CROSSING AHEAD
MATCHLINE
Bore Field Access Rd
JOINS ABOVE
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH A.S.1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m FROM INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
BORE FIELD PIPELINE
FILE NUMBER
DESIGNED / DRAWN
VERIFIED
APPROVED
GUIDELINE DRAWING
Bore Field Access Rd
Sheet 1 of 4
NOT TO SCALE


Mt Dimer Aerodrome
CROSSING AHEAD
REDUCE SPEED NOW
MATCHLINE JOINS DRAWING 1 OF 4
Mt Dimer Rd
JOINS BELOW
MATCHLINE
Mt Dimer Aerodrome
60
80
JOINS ABOVE
Bore Field Access Rd
STOP
Mt Dimer Rd
STOP
Sandy Ridge Facility
JOINS BELOW
MATCHLINE
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS 1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m FROM INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
BORE FIELD PIPELINE
GUIDELINE DRAWING
Mt Dimer Rd
Sheet 3 of 4
NOT TO SCALE


Mt Dimer Rd
60
80
Mt Dimer Rd
REDUCE SPEED NOW
CROSSING AHEAD
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS.1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m FROM INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
BORE FIELD PIPELINE
GUIDELINE DRAWING
Mt Dimer Rd
Sheet 4 of 4
NOT TO SCALE

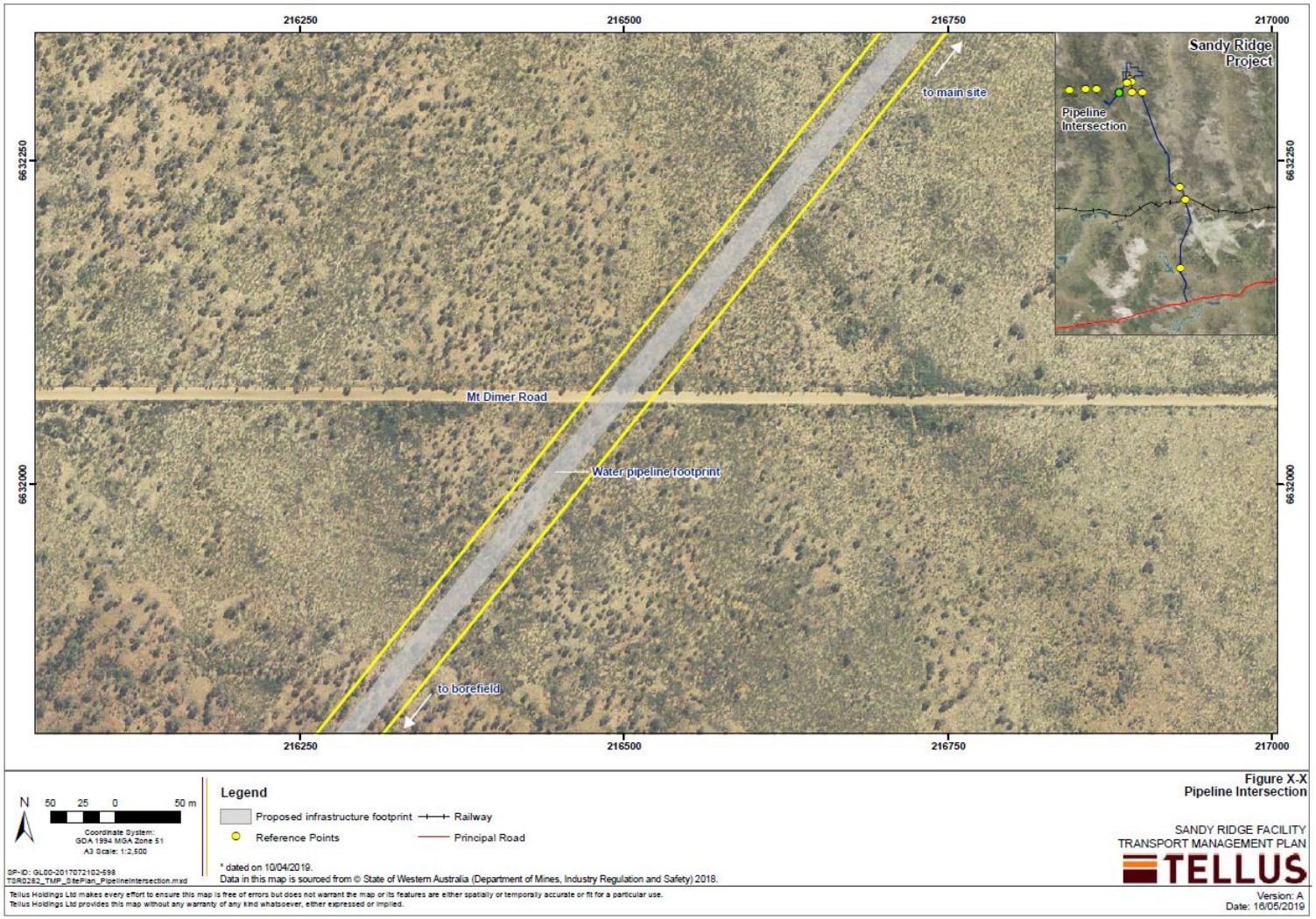

216250
216500
216750
217000
6632250
6632000
to main site
Sandy Ridge Project
Pipeline Intersection
Mt Dimer Road
Water pipeline footprint
to borefield
N
50 25 0 50 m
Coordinate System:
GDA 1994 MGA Zone 51
A3 Scale: 1:2,500
Legend
Proposed infrastructure footprint
Railway
Reference Points
Principal Road
* dated on 10/04/2019.
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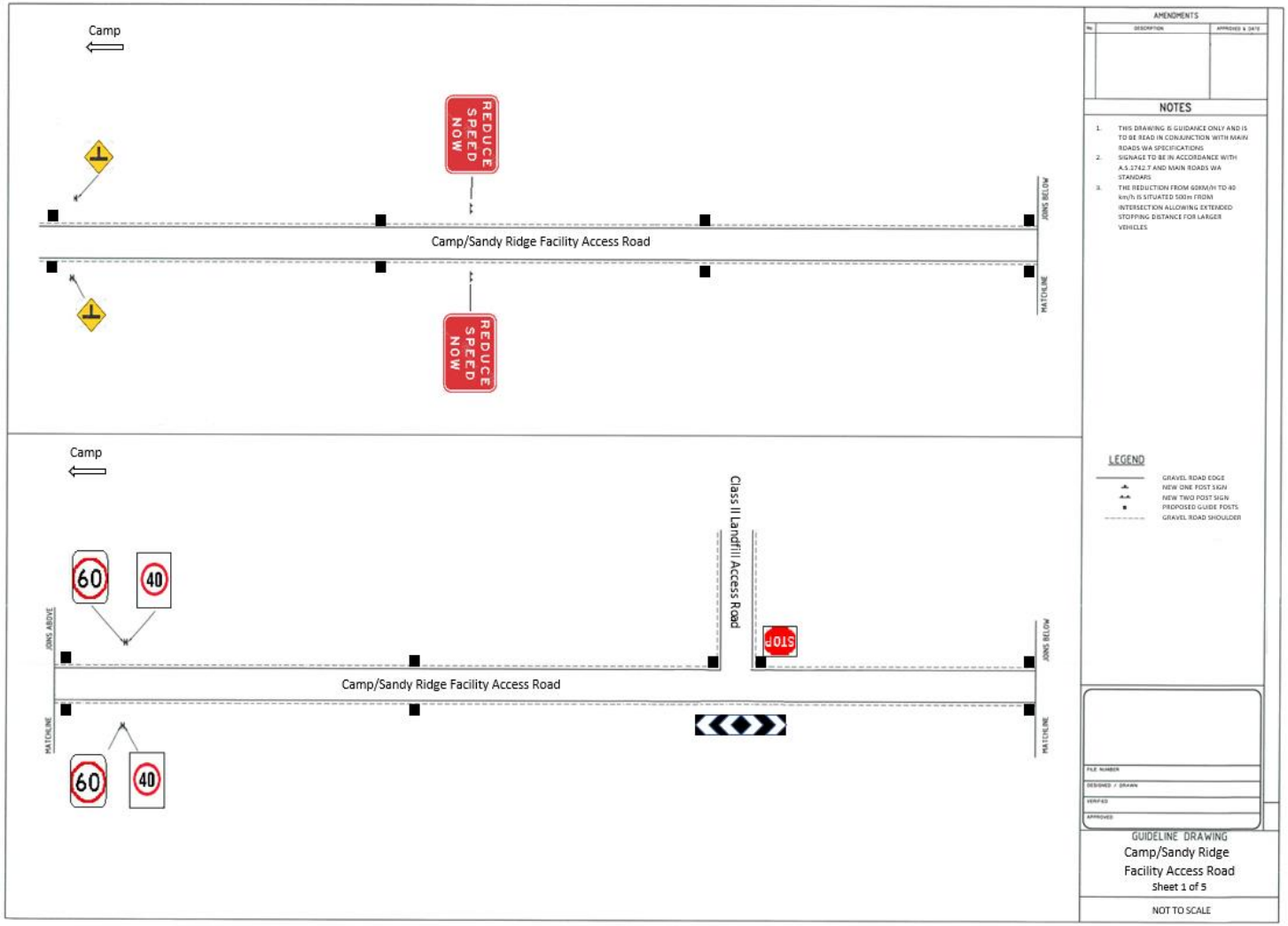
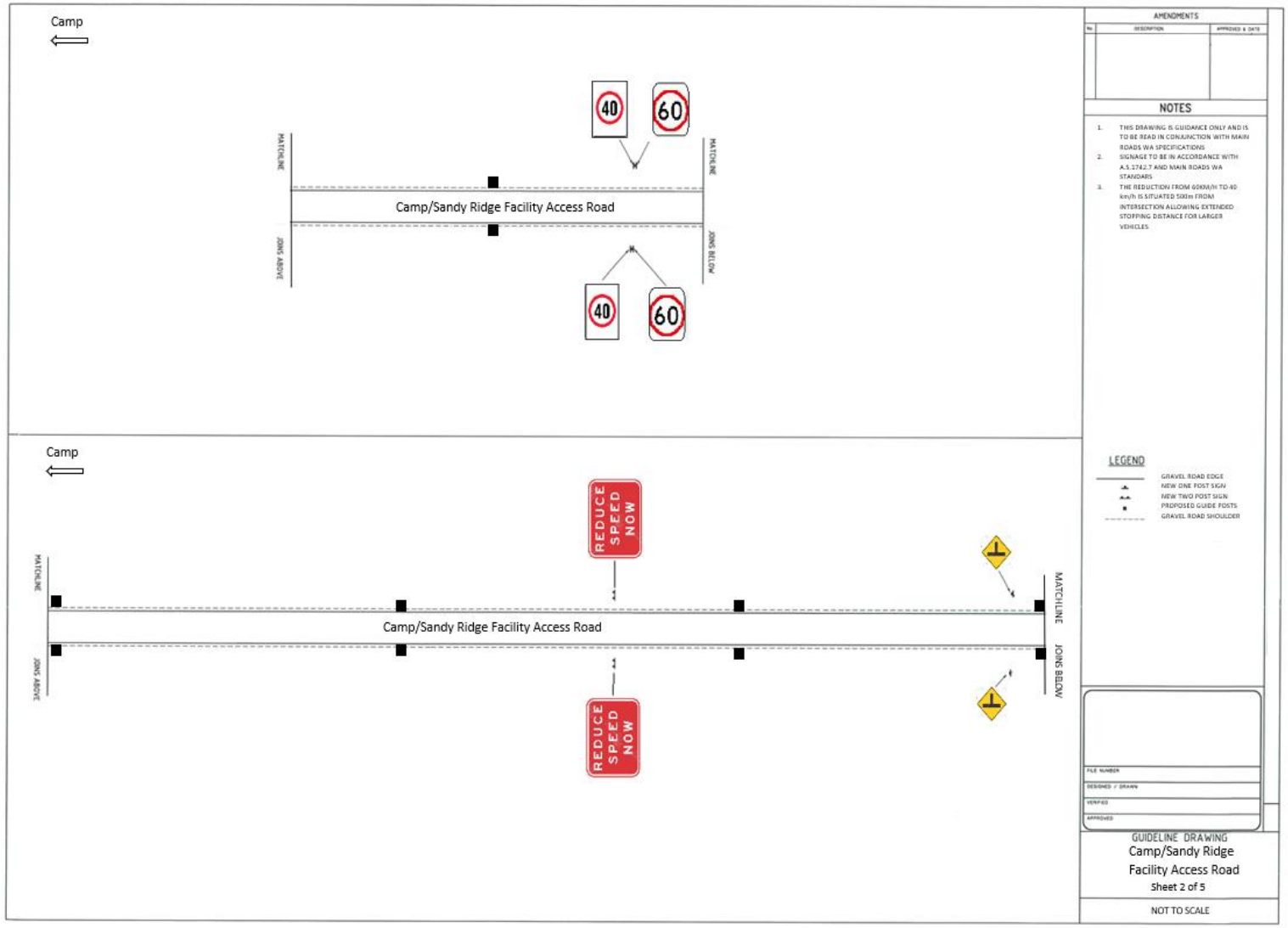
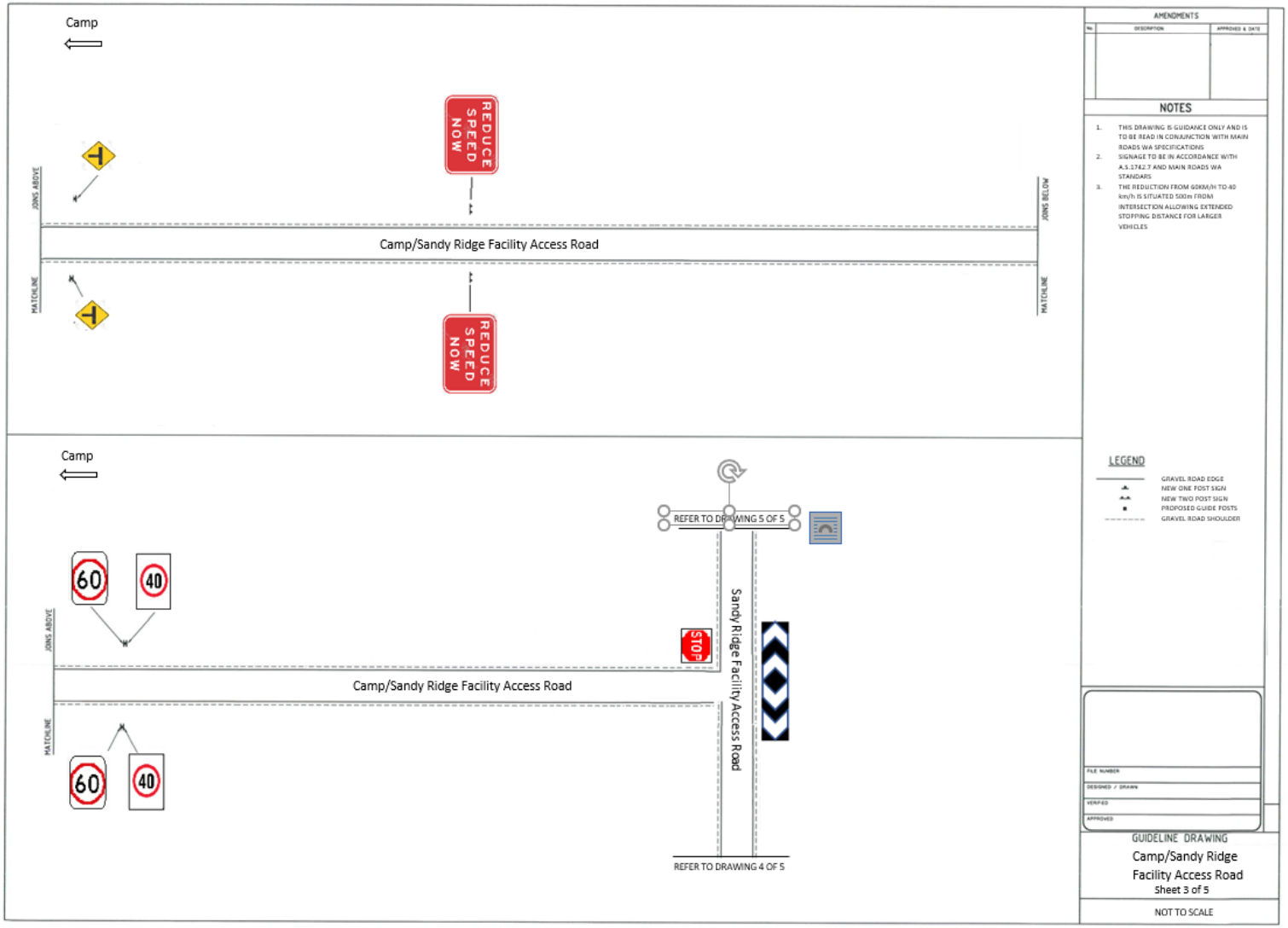
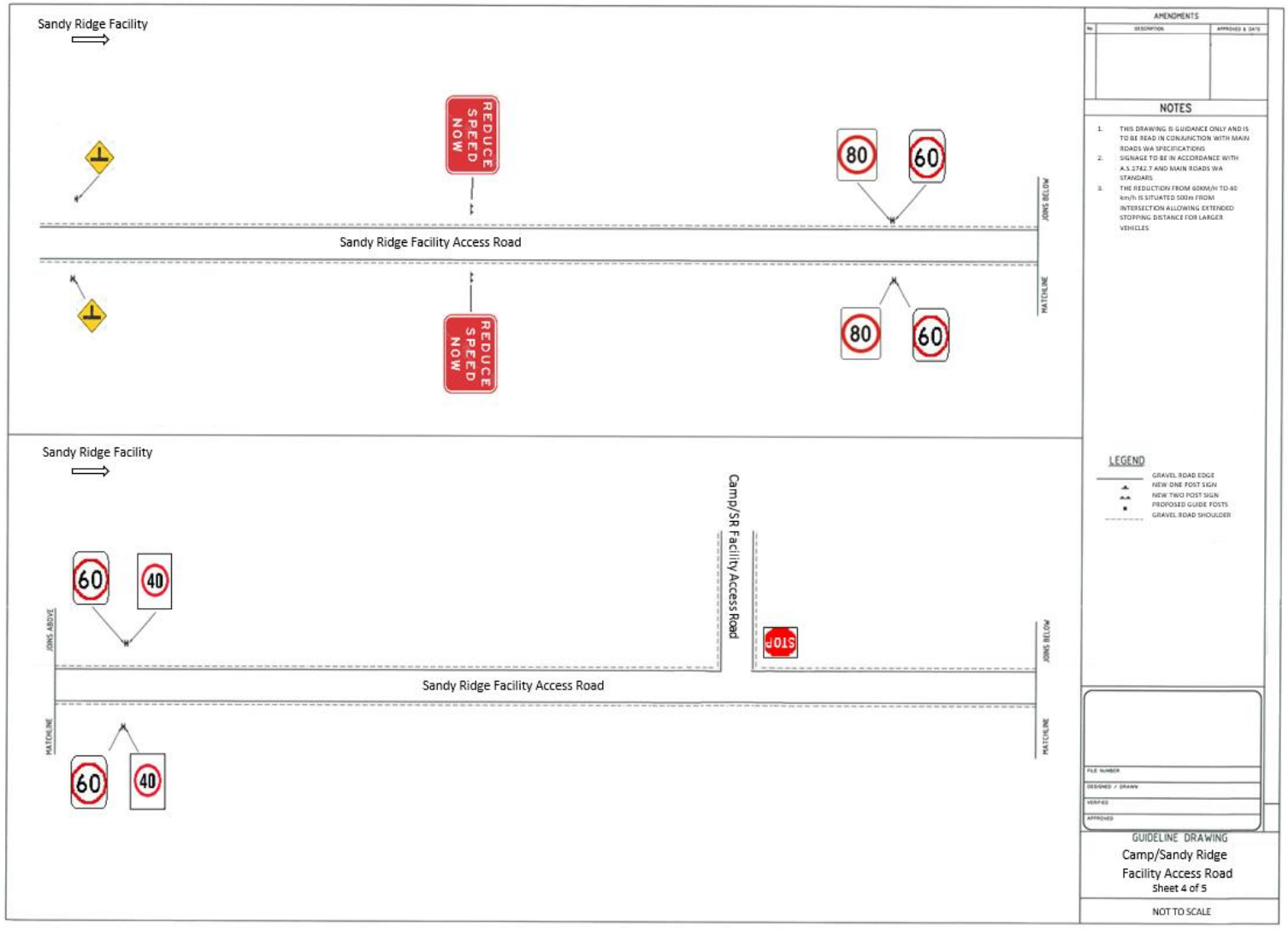
Figure X-X
Pipeline Intersection
SANDY RIDGE FACILITY
TRANSPORT MANAGEMENT PLAN
TELLUS
Version: A
Date: 16/05/2019

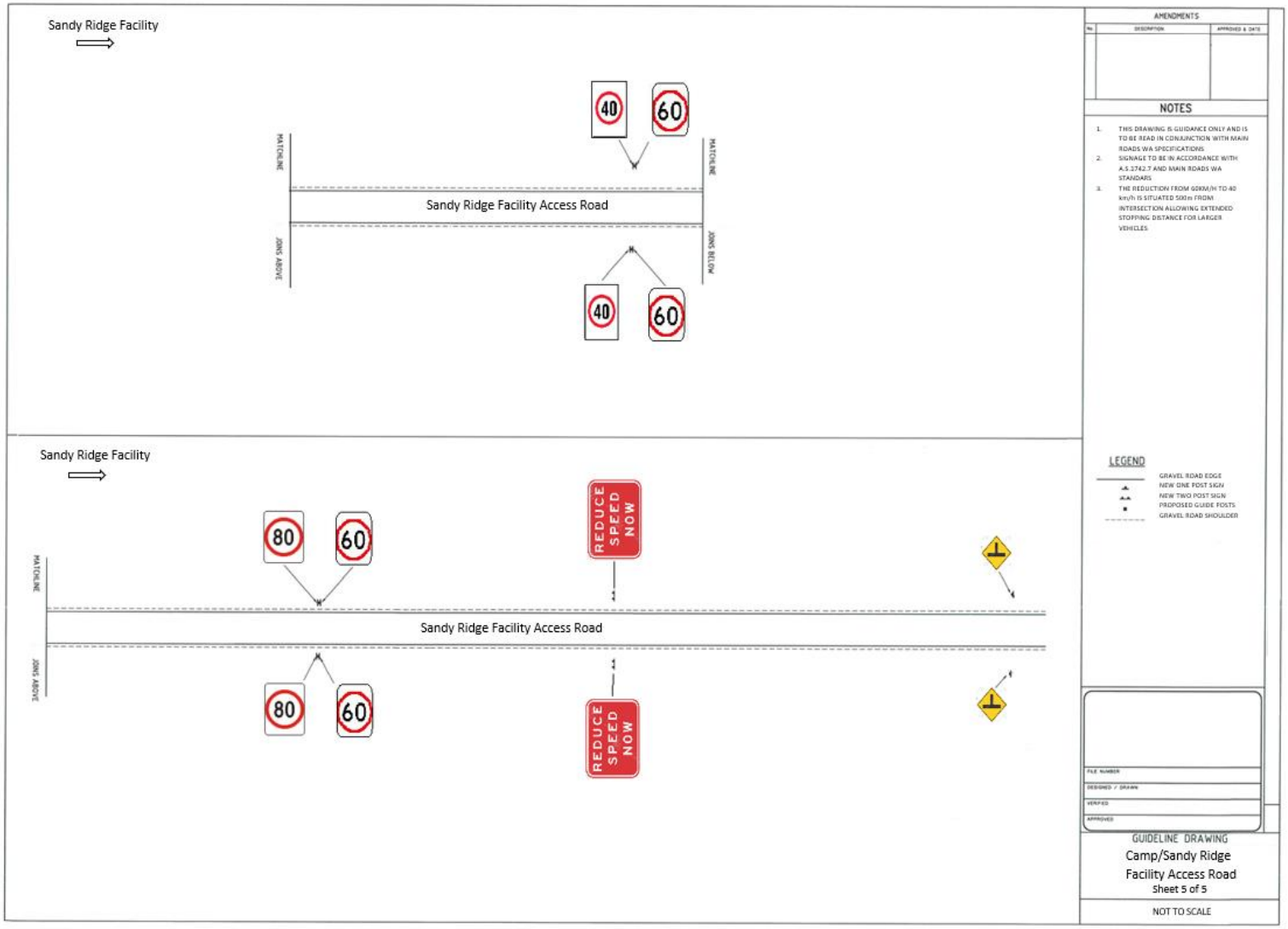
Appendix E - Camp/Sandy Ridge Facility Access Road




Camp
40
60
MATCHLINE
JOINS ABOVE
Camp/Sandy Ridge Facility Access Road
JOINS BELOW
40
60
Camp
REDUCE SPEED NOW
MATCHLINE
JOINS ABOVE
Camp/Sandy Ridge Facility Access Road
MATCHLINE
JOINS BELOW
REDUCE SPEED NOW
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS 1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m FROM INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
FILE NUMBER
DESIGNED / DRAWN
VERIFIED
APPROVED
GUIDELINE DRAWING
Camp/Sandy Ridge
Facility Access Road
Sheet 2 of 5
NOT TO SCALE


Camp
REDUCE SPEED NOW
JOINS ABOVE
JOINS BELOW
Camp/Sandy Ridge Facility Access Road
MATCHLINE
REDUCE SPEED NOW
Camp
REFER TO DRAWING 5 OF 5
60
40
Sandy Ridge Facility Access Road
STOP
JOINS ABOVE
Camp/Sandy Ridge Facility Access Road
MATCHLINE
60
40
REFER TO DRAWING 4 OF 5
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH A.S.1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m FROM INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
FILE NUMBER
DESIGNED / DRAWN
VERIFIED
APPROVED
GUIDELINE DRAWING
Camp/Sandy Ridge
Facility Access Road
Sheet 3 of 5
NOT TO SCALE


Sandy Ridge Facility
REDUCE SPEED NOW
80
60
Sandy Ridge Facility Access Road
JOINS BELOW
MATCHLINE
REDUCE SPEED NOW
80
60
Sandy Ridge Facility
Camp/SR Facility Access Road
60
40
STOP
JOINS ABOVE
Sandy Ridge Facility Access Road
JOINS BELOW
MATCHLINE
60
40
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS 1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m FROM INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
FILE NUMBER
DESIGNED / DRAWN
VERIFIED
APPROVED
GUIDELINE DRAWING
Camp/Sandy Ridge Facility Access Road
Sheet 4 of 5
NOT TO SCALE


Sandy Ridge Facility
40
60
MATCHLINE
Sandy Ridge Facility Access Road
JOINS ABOVE
40
60
Sandy Ridge Facility
80
60
REDUCE SPEED NOW
MATCHLINE
Sandy Ridge Facility Access Road
JOINS ABOVE
80
60
REDUCE SPEED NOW
AMENDMENTS
NOTES
1. THIS DRAWING IS GUIDANCE ONLY AND IS TO BE READ IN CONJUNCTION WITH MAIN ROADS WA SPECIFICATIONS
2. SIGNAGE TO BE IN ACCORDANCE WITH AS 1742.7 AND MAIN ROADS WA STANDARDS
3. THE REDUCTION FROM 60KM/H TO 40 km/h IS SITUATED 500m FROM INTERSECTION ALLOWING EXTENDED STOPPING DISTANCE FOR LARGER VEHICLES
LEGEND
GRAVEL ROAD EDGE
NEW ONE POST SIGN
NEW TWO POST SIGN
PROPOSED GUIDE POSTS
GRAVEL ROAD SHOULDER
FILE NUMBER
DESIGNED / DRAWN
VERIFIED
APPROVED
GUIDELINE DRAWING
Camp/Sandy Ridge
Facility Access Road
Sheet 5 of 5
NOT TO SCALE

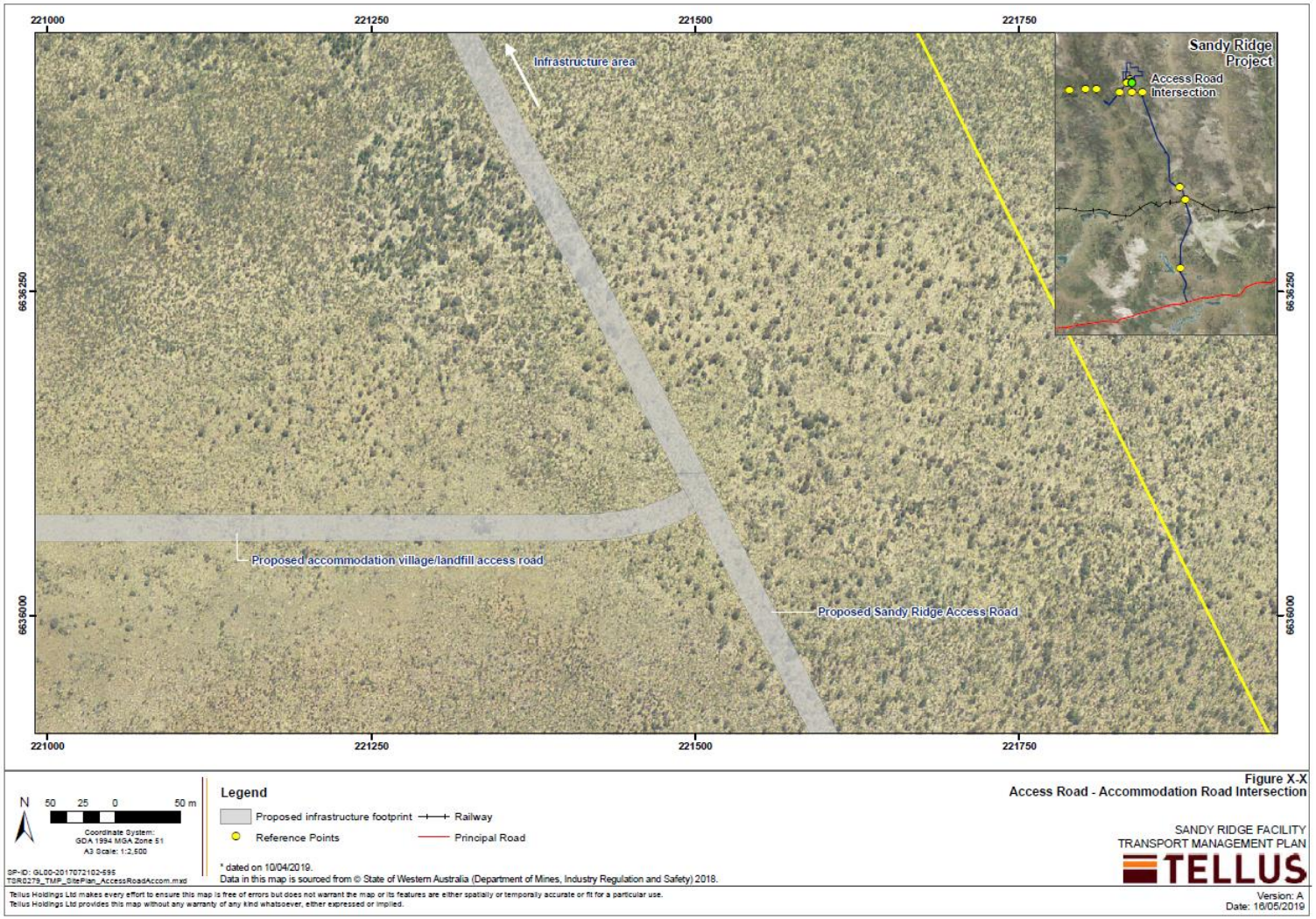

221000
221250
221500
221750
6636250
6636000
Infrastructure area
Proposed accommodation village/landfill access road
Proposed Sandy Ridge Access Road
Sandy Ridge Project
Access Road Intersection
N
50 25 0 50 m
Coordinate System:
GDA 1994 MGA Zone 51
A3 Scale: 1:2,500
Legend
Proposed infrastructure footprint
Railway
Reference Points
Principal Road
* dated on 10/04/2019.
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Figure X-X
Access Road - Accommodation Road Intersection
SANDY RIDGE FACILITY
TRANSPORT MANAGEMENT PLAN
TELLUS
Version: A
Date: 16/05/2019


219250
219500
219750
220000
6636250
6636000
6635750
Class II Landfill
Accommodation Village
Water pipeline
Sandy Ridge Project
Accom/Landfill Intersection
N
50 25 0 50 m
Coordinate System:
GDA 1994 MGA Zone 51
A3 Scale: 1:2,500
Legend
Proposed infrastructure footprint
Railway
Reference Points
Principal Road
* dated on 10/04/2019.
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Figure X-X
Accommodation Road - Landfill Intersection
SANDY RIDGE FACILITY
TRANSPORT MANAGEMENT PLAN
TELLUS
Version: A
Date: 16/05/2019

Appendix F – Risk register

SANDY RIDGE PROJECT MANAGEMENT PLAN RISK REGISTER

Risk ID	Main Risk	Description	Risk Category	Sub-Risk ID	Sub Risks	Root Cause	Cause occurs in...	Potential Consequence Description	Consequences: People / OHS	Consequences: Environment / Heritage	Consequences: Financial / Legal	Consequences: Productivity / Social ac	Consequences: Reputation	Inherent Risk: Likelihood	Inherent Risk: Consequence	Inherent Risk: Risk Level	Preventive Controls (to reduce likelihood)	Control: Effectiveness	Control: Status	Corrective Controls (to reduce consequence once event has occurred)	Control: Effectiveness	Control: Status	Responsible Person	Due By	Status Open/ Closed	Residual Risk: Likelihood	Residual Risk: Consequence	Residual Risk: Risk Level	Risk Tolerance	Risk Owner	Remarks
OP	Great Eastern Highway Mount Walton Road Intersection	Entering/Exiting Mount Walton Road onto Great Eastern Highway	Hazards/Events	OP.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serioiuse life changing injury and damage	Catastrophic					Likely	Catastrophic	Critical	Intersection upgraded to MRWA specs to incorporate widening to allow for clear line of sight and adequate turning for large vehicles	Strong	Implemented	Emergency contact signage at start of Mt Walton Road with Sandy Ridge and DFES contacts	Satisfactory	Action			open	Rare	Catastrophic	High		Tellus Operations	
OP1			HSE Risks	OP1.1	Hydrocarbon/Hazardous waste spill	Ruptured fuel, oil or hazardouse waste receptical		Environmental impact to surrounding fauna and floora		Minor				Possible	Minor	Medium	Intersection upgraded to MRWA specs to incorporate widening to allow for clear line of sight and adequate turning for large vehicles	Satisfactory	Implemented	Emergency contact signage at start of Mt Walton Road with Sandy Ridge and DFES contacts	Satisfactory	Action			open	Rare	Minor	Low		Tellus Operations	
OP3	Driving along Mount Walton Road	Vehicular traffic traveling to and from Sandy Ridge Facility	Hazards/Events	OP3.2	Dust	Travelling at Speed Lack of dust suppression High winds Road surface breaking up		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or serioiuse injury	Catastrophic					Possible	Catastrophic	High	Speed signs installed along access road drive to conditions regular dust suppression carried out to minimise dust regular road maintenance carried out to maintain hard road surface	Satisfactory	In development	UHF Callup on entering Mt Walton Road to advise of arrival time to Sandy Ridge Facility, not to proceed until possitive communtications are return to advise message received additional UHF channel signs installed along Mt Walton Road with emergency location markers	Satisfactory	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP			HSE Risks	OP.1	Vehicle collision or near miss	Vehicles pulling out of side tracks with out looking for oncoming traffic, Poor vision		Potential for Vehicle verses vehicle impact causing fatality or serioiuse life changing injuryand damage	Catastrophic					Possible	Catastrophic	High	Clearing along verge in road reserve to increase vision for vehicles accessing or crossing road from side access tracks warning signage along access road to advise traffic of side track ahead	Strong	In development	Onsite Medical facility and ESO Road maintenance crew tp provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium			
OP3				OP3.3	Fauna	Local Wildlife accessing across Mount Walton road		Vehicle vs Fauna causing damage and potential injury		Minor				Possible	Minor	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	In development	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP3				OP3.4	Poor vision	Sunglare Dirty windscreen Heavy Rain Dust Poor light		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or serioiuse injury and damage	Catastrophic					Possible	Catastrophic	High	Access road upgrade works carried out with new delineators and signage installed along the length of the road, clearing along edge of road reserve undertaken to increase safe zone Ensure windscreens are clean and clear Drive to conditions Engage 4 wheel drive in wet conditions ensure lights are in working order	Satisfactory	In development	Onsite Medical facility and ESO Road maintenance crew tp provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat,inability to escape threat		Extrem radiant heat, Poor visibility , Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal changeregular monitoring of DFESregional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew tp provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by cometent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP	Access tracks	Access tracks entering from sides of Mount Walton Road	HSE Risks	OP.1	Vehicle collision or near miss	Vehicles pulling out of side tracks with out looking for oncoming traffic, Poor vision		Potential for Vehicle verses vehicle impact causing fatality or serioiuse life changing injuryand damage	Catastrophic					Possible	Catastrophic	High	Clearing along verge in road reserve to increase vision for vehicles accessing or crossing road from side access tracks warning signage along access road to advise traffic of side track ahead	Strong	In development	Onsite Medical facility and ESO Road maintenance crew tp provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium			
OP10	Carina mine Process Plant access			OP10.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serioiuse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approaoche to allow adequate stopping distance or safe passage through	Improvement required	In development	Onsite Medical facility and ESO Road maintenance crew tp provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Catastrophic					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by cometent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP19				OP19.3	Fauna	Local Wildlife accessing across road reserve		Vehicle vs Fauna causing damage and potential injury		Moderate				Possible	Moderate	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP19				OP19.3	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill	Minor					Possible	Minor	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approaoche to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP11	Carina Camp/Airport access			OP11.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serioiuse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approaoche to allow adequate stopping distance or safe passage through	Satisfactory	Action	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP				OP.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill	Minor					Possible	Minor	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approaoche to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low			
OP	Mt Walton Rd/WDF access Rd/Mt Dimer Rd Intersection			OP.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serioiuse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approaoche to allow adequate stopping distance or safe passage through	Satisfactory	Action	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES	Strong	Action			open	Unlikely	Major	Medium			
OP12				OP12.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approaoche to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP13				OP13.1	Fauna	Local Wildlife accessing across road reserve		Vehicle vs Fauna causing damage and potential injury	Minor					Possible	Minor	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low			
OP20				OP20.2	Bushfire threat	Exposure to Heat,inability to escape threat		Extrem radiant heat, Poor visibility , Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal changeregular monitoring of DFESregional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew tp provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by cometent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	

OP15	Mt Dimer Rd/Sandy Ridge Facility Access Rd Intersection			OP15.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP16				OP16.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to atend and notify DFES 'Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat,inability to escape threat		Extrem radiant heat, Poor visibility , Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal changeregular monitoring of DFESregional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP17				OP17.1	Fauna	Local Wildlife accessing across road reserve		Vehicle vs Fauna causing damage and potential injury	Minor					Possible	Minor	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP17	Mt Dimer Rd/Bore Field Access Rd Intersection			OP17.2	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP17				OP17.3	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide forst assistance close road to other users to maintain safety Sandy Ridge ERT to atend and notify DFES 'Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat,inability to escape threat		Extrem radiant heat, Poor visibility , Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal changeregular monitoring of DFESregional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions injury and damage environmental impact	Moderate					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by cometent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP19	Mt Dimer Rd to Mt Dimer Areodrome	Driving from Sandy ridge facility to Mt Dimer Areodrome		OP19.1	Dust	Travelling at Speed Lack of dust suppression High winds Road surface breaking up		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or seriouse injury	Catastrophic					Possible	Catastrophic	High	Speed signs installed along access road drive to conditions regular dust suppression carried out to minimise dust regular road maintenace carried out to maintain hard road surface	Satisfactory	In development	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP19				OP19.2	Fauna	Local Wildlife accessing across Road reserve		Vehicle vs Fauna causing damage and potential injury	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP19				OP19.3	Poor vision	Sunglare Dirty windscreen Heavy Rain Dust Poor light		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or seriouse injury and damage	Catastrophic	Minor				Possible	Catastrophic	High	Access road upgrade works carried out with new delineators and signage installed along the length of the road, Ensure windscreens are clean and clear Drive to conditions Engage 4 wheel drive in wet conditions ensure lights are in working order	Strong	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users DFES access and RFDS accessable Mineral Resources ERT engaged if required for assistance	Strong	Action			open	Unlikely	Moderate	Medium		Tellus Operations	
OP19				OP19.4	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions injury and damage environmental impact	Moderate					Possible	Moderate	Medium	Road inspection to be carried ut by competant person to assess condition of road drive to conditions competent drivers only grade slippery material off as required to allow for a competent surface	Satisfactory	In development	Road inspections carried out by cometent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Unlikely	Moderate	Medium		Tellus Operations	
OP19				OP19.5	Inexperience driving on unsealed roads	Never driven on unsealed roads		Driving to slow causing a hazard to other road users not driving with 4 wheel drive engaged when required	Moderate					Possible	Moderate	Medium	VOC'd drivers to only drive from Sandy Ridge Facility to Aerodrome and return 4x4 trained maintain safe distance between vehicles drive to conditions	Satisfactory	Action	Re-training of personnel	Improvement required	Action			open	Rare	Moderate	Low		Tellus Operations	
OP20				OP20.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Road to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through at intersecting roads	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat,inability to escape threat		Extrem radiant heat, Poor visibility , Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal changeregular monitoring of DFESregional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP15	Camp/Sandy Ridge Facility Access Rd			OP15.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or seriouse life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Signage to be installed to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP16				OP16.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Signage to be installed to advise approaching an intersection, reduce speed indicators on approache to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide first assistance if closest, close road to other users to maintain safety Sandy Ridge ERT to atend	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat,inability to escape threat		Extrem radiant heat, Poor visibility , Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal changeregular monitoring of DFESregional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP17				OP17.1	Fauna	Local Wildlife accessing across road reserve		Vehicle vs Fauna causing damage and potential injury	Minor					Possible	Minor	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	

Sandy Ridge Facility

Transport Impact Assessment

Sandy Ridge PT Pty Ltd

01 July 2021

→ The Power of Commitment

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Contents

Table index

Figure index

Document status

Abbreviation	Description
DG	Dangerous Goods
DMP	Department of Mines and Petroleum
DWER	Department of Water and Environmental Regulation
GEH	Great Eastern Highway
GPs	General purpose containers
km	Kilometres
LoS	Level of Service
m	Metres
NT	Northern Territory
pa	Per Annum
QLD	Queensland
RAV	Restricted Access Vehicle
SA	South Australia
t	Tonnes
Tellus	Tellus Holdings Ltd
The Facility or The Site	Sandy Ridge Intractable Waste Disposal Facility
TIA	Transport Impact Assessment
TIAG	Transport Impact Assessment Guidelines
tpa	Tonnes per annum
vpd	Vehicles per Day
WA	Western Australia
WAC	Waste Acceptance Criteria
WAPC	Western Australian Planning Commission

1. Introduction

1.1 Purpose of this report

The following report provides a transport impact assessment (TIA) to support a referral to the Western Australia (WA) Department of Water and Environmental Regulation (DWER) for the proposal to increase gate acceptance capacity for the Sandy Ridge near surface geological repository for Class IV and Class V waste (the Facility or the Site). The Site is located approximately 90 kilometres (km) north of the intersection of Great Eastern Highway and Mount Walton Access Road in Boorabbin (refer to Figure 1). It is proposed to align the tonnage of waste received at the gate of the Facility (currently up to 100,000 tonnes per annum [tpa) with the actual tonnage of waste (including treated waste) licensed for in cell disposal (up to 280,000 tpa). Waste is currently transported to the Site using 36.5 metre (m) road trains.

1.2 Scope and limitations

This report: has been prepared by GHD for Tellus Holdings Ltd (Tellus) and may only be used and relied on by Tellus for the purpose agreed between GHD and Tellus as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than Tellus arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

1.3 Assumptions

It is assumed that vehicle data provided to GHD by Tellus is adequate for the transport assessment; specifically current truck movement on Mount Walton Road.

1.4 Background and site access

- It is proposed that the Facility will accommodate 280,000 tpa of Class IV and V waste by road to the Facility in containers (e.g. GPs, PacTec bags, half heights).
- A progressive ramp up to 280,000 tpa is envisaged to 2029. It is noted that the ultimate tonnage may be an over-estimate, since for every tonne of liquid waste received at the gate, the remaining mass of solid waste able to be accepted at the gate is reduced by around 6 tonnes, due to a need for onsite immobilisation and solidification of liquid wastes, before placement in the cell.
- Approximately 75% of waste trucks will access the Facility by road from the Kalgoorlie rail inter-modal facility located approximately 240 km east.
- Approximately 15% of waste trucks will access the Facility by road from Perth located approximately 520 km west and other coastal WA areas.
- Approximately 10% of waste trucks will access the Facility by road from Northern Territory (NT)/South Australia (SA)/eastern states (not by rail to Kalgoorlie).
- Only licensed and pre-approved operators can transport waste to site. All deliveries are scheduled.

- The Site can accept waste delivery trucks with waste that meets the Facility's licensed Waste Acceptance Criteria (WAC) and dangerous goods (DG) Licence requirements.
- Use of the Mt Walton Road is during daylight hours only, seven days a week.
- Waste vehicle length is limited to 36.5 m.

1.5 Site location

The site location is shown on Figure 1.

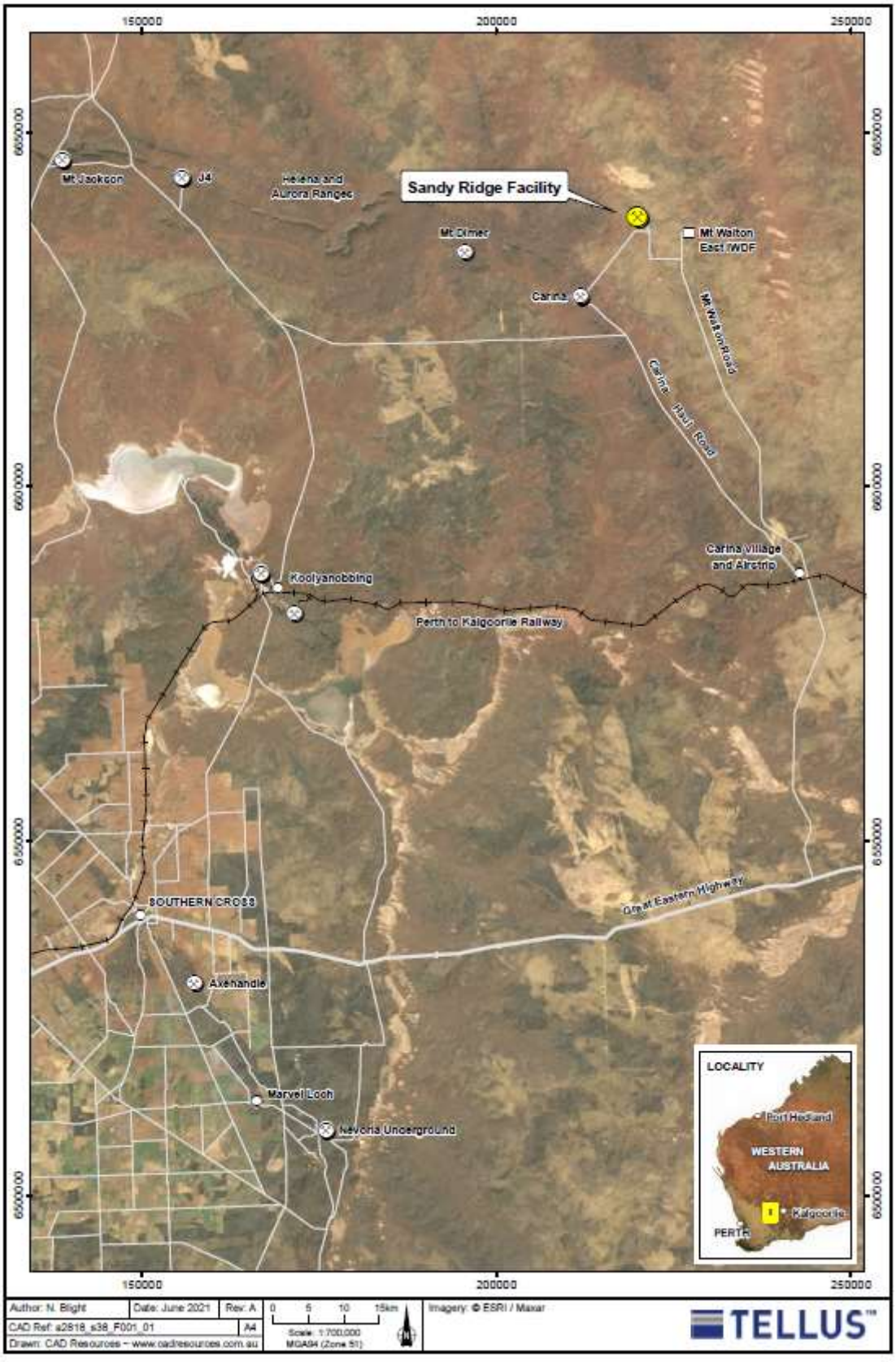

Figure 1 Location plan

1.6 WA Planning Commission Guidelines

The Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines (TIAG) for transport impact assessment volume 4[1] have been used in the preparation of this assessment. The guidelines indicate moderate impact for a development generating an additional 10-100 vehicles per hour in the peak hour. Topics to be covered within the TIAG that are applicable to the revised gate acceptance limit include:

- Proposed development.
- Existing traffic and site generated traffic.
- Vehicle access and parking.
- Provision for service vehicles.
- Hours of operation (if applicable).
- Daily traffic volumes and vehicle types.
- Traffic management on frontage streets.
- Roads and intersections.
- Public transport access.
- Pedestrian access.
- Cycle access and end of trip facilities.
- Site specific issues.
- Safety.

[1] https://www.dplh.wa.gov.au/policy-and-legislation/state-planning-framework/fact-sheets,-manuals-and-guidelines/transport-impact-assessment-guidelines

2. Proposed development

It is proposed that the Site will ultimately accommodate up to 280,000 tpa of Class IV and V waste by road to the Facility in containers (e.g., GPs, PacTec bags, half heights). Based on current projections, the ramp up to 100,000 tpa is expected to be completed by June 2025. Further ramp up to 200,000 tpa is expected by June 2027, finally ramping up to 280,000 tpa, which is expected by June 2029.

It is noted that the ultimate tonnage may be an over-estimate, since for every tonne (t) of liquid waste received at the gate, the remaining mass of solid waste able to be accepted at the gate is reduced by around 6 t due to a need for onsite immobilisation and solidification of liquid wastes before placement in the cell.

2.1 Existing traffic and site generated traffic

Tellus Holdings has advised the following information regarding traffic movement to/from the site:

– Waste trucks (36.5 m road-trains) are currently averaging 10-12 inbound movements per week (returning empty).
– Up to eight other truck (semi-trailer and road-train water truck) movements per week (returning empty).
– Light vehicles typically range between 20-25 movements per week.
– This rate of 10-12 movements per week plus other smaller vehicles as given above is expected to continue to at least February 2022 and then gradually increase during 2022, likely doubling in number by August 2022.
– Assume steady ramp up to 100,000 tpa to June 2025 and then to 200,000 tpa by June 2027 and finally 280,000 tpa by June 2029.

One of the neighbouring mines is in care and maintenance and is running approximately 1-2 inbound road-trains per day and around 6-8 light vehicles trips (in and out) per day with an even split between east and westbound on Great Eastern Highway (GEH) assumed. It is also assumed that these movements remain constant into the future.

The above information is summarised in Table 1.

Table 1 Vehicle movements (one way)

Movement	Weekly (one way) to February 2022	100,000 tpa 2025 (based on 36t per truck) Weekly one way	280,000 tpa 2029 (based on 36t per truck) Weekly one way	100,000 tpa 2025 (based on 36t per truck) Daily one way	280,000 tpa 2029 (based on 36t per truck) Daily one way
Waste trucks	10-12	53	150	8	22
Other trucks	8	38 (53/11x8)	109 (150/11 x8)	6	16
Light vehicles	20-25	108 (53/11x 22.5)	306 (150/11x 22.5)	16	44
Subtotal proposal vehicles	**38-45**	**199**	**565**	**30**	**82**
Neighbouring mine (road trains)	14	14	14	1-2	1-2
Light vehicles	56	56	56	6-8	6-8

Movement	Weekly (one way) to February 2022	100,000 tpa 2025 (based on 36t per truck) Weekly one way	280,000 tpa 2029 (based on 36t per truck) Weekly one way	100,000 tpa 2025 (based on 36t per truck) Daily one way	280,000 tpa 2029 (based on 36t per truck) Daily one way
Subtotal other vehicles	**70**	**70**	**70**	**7-10**	**7-10**
Total	**108-115**	**-**	**-**	**40**	**92**

Note: Other trucks and light vehicles factored up by same ratio as waste trucks to 100,000 tpa and 280,000 tpa.

Based on acceptance of 280,000 tpa, Table 1 indicates the Site will generate around 92 one-way movements per day and 184 two-way movements. This compares to 40 one-way movements and 80 two-way existing movements (100,000 tpa case). This represents a net daily increase of 104 vehicles per day (vpd) (two-way) compared with current movements for 100,000 tpa.

2.2 External road network

A summary of available traffic data using Main Roads WA Traffic Map for key locations on the external road network is shown in Table 2.

Assuming a growth rate of 2% per annum on the road network, future daily volumes to 2029 are also indicated.

Table 2 Existing and predicted future traffic volumes on external road network

Road	Vehicles per day	Percentage of trucks	Year	Indicative vpd 2029 (2% per annum [pa])
Great Eastern Highway (west of Coolgardie)	1,158	43.3%	2020	1,384
Bayley Street (west of Lyon Street) Coolgardie	1,519	40.3%	2020	1,815
Great Eastern Highway (east of Coolgardie Esperance Highway)	1,610	21.7%	2017	2,042
Great Eastern Highway (east of Cairns Road)	1,915	26.6%	2020	2,288
Great Eastern Highway (west of Kundana Road)	1,675	19.5%	2015	2,210
Great Eastern Highway (east of Anzac Drive)	3,187	20.5%	2015	4,205
Anzac Drive, (west of Goldfields Highway) Kalgoorlie	1,656	53.1%	2020	1,979
Goldfield Highway (north of Mt Monger Road)	2,450	38.39%	2020	2,928
Goldfield Highway (north of Hannan Street)	4,754	13.1%	2017	6,029
Goldfields Highway (north of Tourist Mine access road)	1,903	37.3%	2020	2,274
Great Eastern Highway (west of Ryans Find Road)	1,278	34.4%	2018	1,589

2.2.1 Restricted Access Vehicle Network

The restricted access vehicle (RAV) network 7 (trucks to 36.5 m) is shown in Figure 2 and Figure 3. Roads include GEH, Anzac Drive and Goldfields Highway.

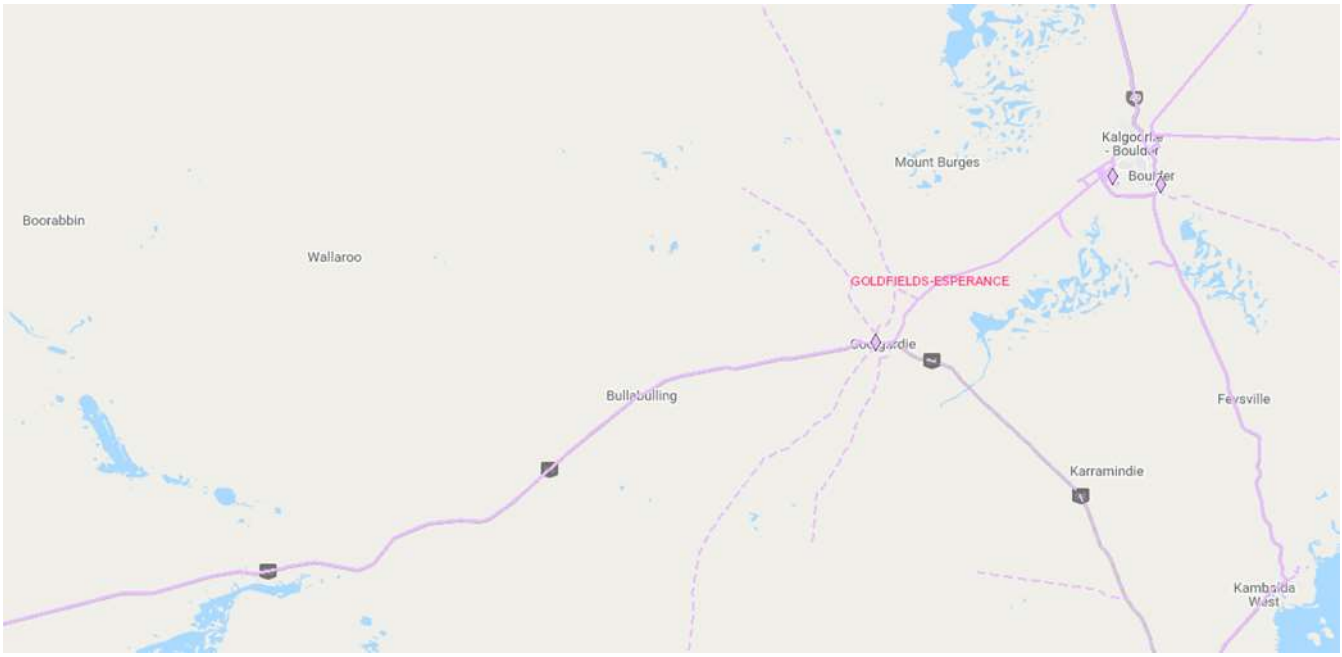

Figure 2 RAV Network 7 (36.5 m trucks)

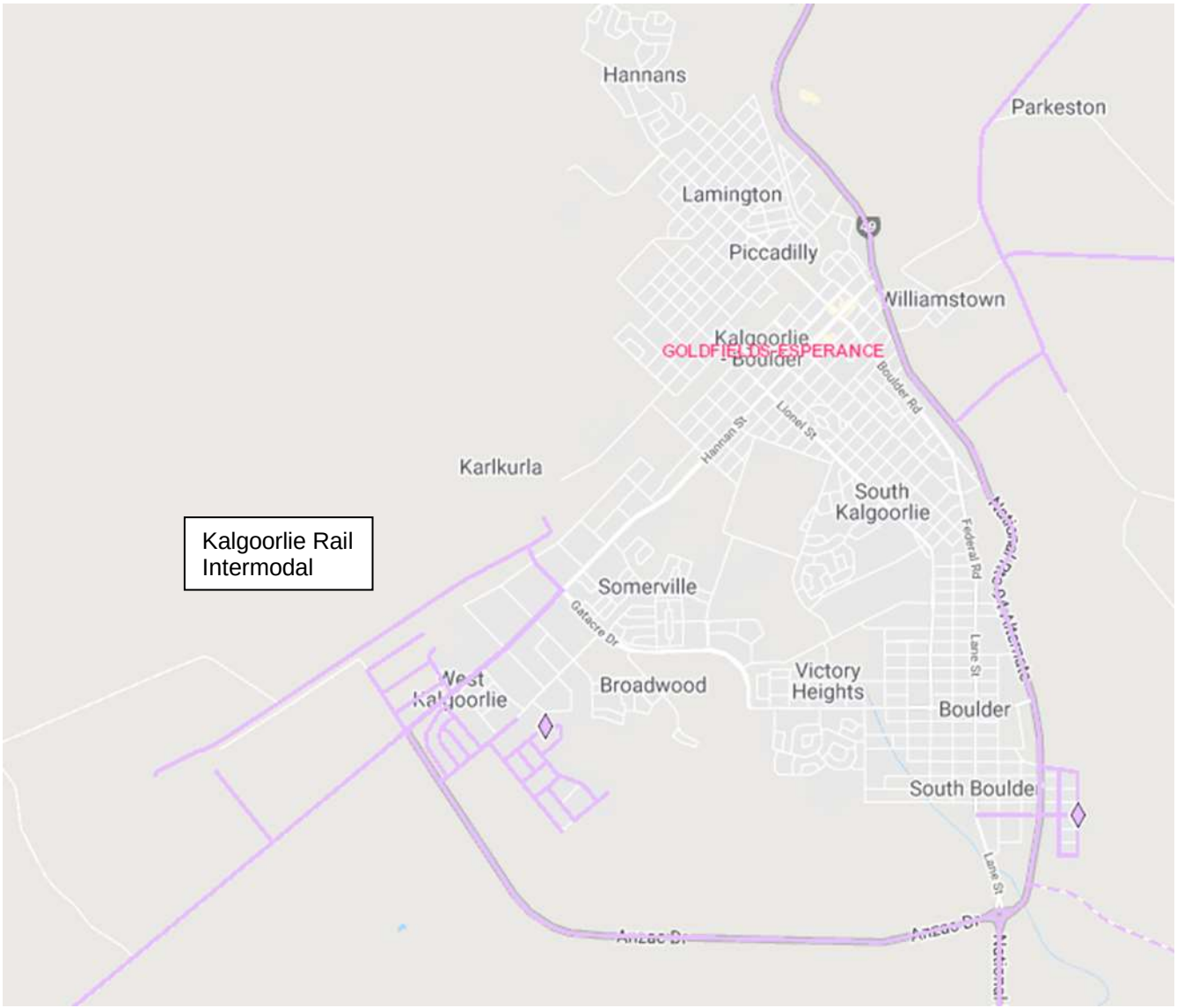

Figure 3 RAV Network 7 Kalgoorlie (36.5 m trucks)

3. Traffic impact

3.1 Traffic generation for 280,000 tpa

3.1.1 Construction

Construction traffic is zero, as there is no additional construction for the revised increase in gate acceptance quantity. Construction traffic during the life of the project (e.g. sustaining capital works, new pits etc.) will not be significant compared to waste truck movements during 280,000 tpa operations and no impacts are anticipated on the adjacent road network.

3.1.2 Operation

Daily

The Site is forecast to generate around 92 one-way movements per day and 184 two-way movements (280,000 tpa). This compares to 40 one-way movements and 80 two-way existing movements (100,000 tpa case). This represents a net daily increase of 104 vpd (two-way) compared with current movements for 100,000 tpa.

Table 3 indicates the forecast waste truck traffic (triple road trains to 36.5 m) on the road network. The daily number of waste trucks (at 280,000 tpa) travelling to/from the site based on the following distribution is forecast to be:

– Approximately 75% by road from the Kalgoorlie rail inter-modal facility (22 trucks per day one-way x 2 x 75%) = 33 trucks per day
– Approximately 15% by road from Perth and other coastal WA areas (22 trucks per day one-way x 2 x 15%) = 7 trucks per day
– Approximately 10% by road from NT/Queensland (QLD)/eastern states (not by rail to Kalgoorlie) (22 trucks per day one-way x 2 x 10%) = 5 trucks per day
– It is anticipated that most light vehicles and other trucks will travel from/to Perth (60 vehicles x 2 x 100%) = 20 vpd
– The daily number of waste trucks (at 100,000 tpa) travelling to/from the site based on the following distribution is forecast to be:
– Approximately 75% by road from the Kalgoorlie rail inter-modal facility (8 trucks per day one-way x 2 x 75%) = 12 trucks per day
– Approximately 15% by road from Perth and other coastal WA areas (8 trucks per day one-way x 2 x 15%) = 3 trucks per day
– Approximately 10% by road from NT/QLD/eastern states (not by rail to Kalgoorlie) (8 trucks per day one- way x 2 x 10%) = 2 trucks per day
– It is anticipated that most light vehicles and other trucks will travel from/to Perth (22 vehicles x 2 x 100%) = 44 vpd

The daily number of waste trucks (existing) travelling to/from the site based on the following distribution is:

– Approximately 75% by road from the Kalgoorlie rail inter-modal facility (11 per week/7 days one-way x 2 x 75%) = 3 trucks per day
– Approximately 15% by road from Perth and other coastal WA areas (11 per week/7 days one-way x 2 x 15%) = 1 truck per day
– Approximately 10% by road from NT/QLD/eastern states (not by rail to Kalgoorlie) (11 per week/7 days one-way x 2 x 10%) = 1 truck per day
– Most light vehicles and other trucks travel from/to Perth (31 per week/7 days x 2 x 100%) = 9 vpd

Austroads Class 10 vehicles and above include road trains and existing numbers at select sites are shown in Table 3. (Note Class 10 and above represents multi combination vehicles, B-Double, Double Road Train, Triple Road Train, RAV 5 to RAV 10).

Figure 4 shows graphically the increased waste truck volumes 280,000 tpa compared with 100,000 tpa.

Table 3 Existing and forecast traffic volumes, Class 10 trucks and above on the road network (vpd)

Road	Existing Vehicles per day	Existing Class 10 trucks and above per day	Vehicles per day (excl additional site traffic) 2029	Class 10 trucks and above per day (excl additional site traffic)2029	Existing class 10 trucks and above from site(a)	Forecast class 10 trucks and above from site(100,000 tpa) (b)	Forecast class 10 trucks and above from site(280,000 tpa) (c)	Forecast additional class 10 trucks and above (100,000 tpa) 2029(b-a)	Forecast additional class 10 trucks and above (280,000 tpa) 2029(c-a)	**Total vpd and % increase over anticipated Class10 trucks and above (280,000 tpa compared to100,000 tpa in 2029 on network) (c-b)**
Great Eastern Highway (west of Coolgardie)	1,158	297	1,384	354	4	14	38	10	34	**24 (7%)**
Bayley Street (west of Lyon Street) Coolgardie	1,519	Not available	1,815	N/A	4	14	38	10	34	**24 (N/A)**
Great Eastern Highway (east of Coolgardie Esperance Highway)	1,610	153	2,042	194	4	14	38	10	34	**24 (12%)**
Great Eastern Highway (east of Anzac Drive) Kalgoorlie	3,187	123	4,205	162	0	0	0	0	0	**0**
Anzac Drive (east of Goldfields Highway) Kalgoorlie	1,656	307	1,979	366	1	2	5	1	4	**3 (<1%)**
Goldfield Highway (north of Mt Monger Road) Kalgoorlie	2,450	Not available	2,928	N/A	1	2	5	1	4	**3 (N/A)**
Goldfield Highway (north	4,754	140	6,029	177	1	2	5	1	4	**3 (2%)**

Road	Existing Vehicles per day	Existing Class 10 trucks and above per day	Vehicles per day (excl additional site traffic) 2029	Class 10 trucks and above per day (excl additional site traffic)2029	Existing class 10 trucks and above from site(a)	Forecast class 10 trucks and above from site(100,000 tpa) (b)	Forecast class 10 trucks and above from site(280,000 tpa) (c)	Forecast additional class 10 trucks and above (100,000 tpa) 2029(b-a)	Forecast additional class 10 trucks and above (280,000 tpa) 2029(c-a)	**Total vpd and % increase over anticipated Class10 trucks and above (280,000 tpa compared to100,000 tpa in 2029 on network) (c-b)**
of Hannan Street) Kalgoorlie										
Goldfields Highway (north of Tourist Mine access road) Kalgoorlie	1,903	Not available	2,274	N/A	1	2	5	1	4	**3 (N/A)**
Great Eastern Highway (west of Ryans Find Road)	1,278	232	1,589	288	1	3	7	2	6	**4 (1%)**

Note: Existing data on the road network obtained from Main Roads WA Traffic Map.

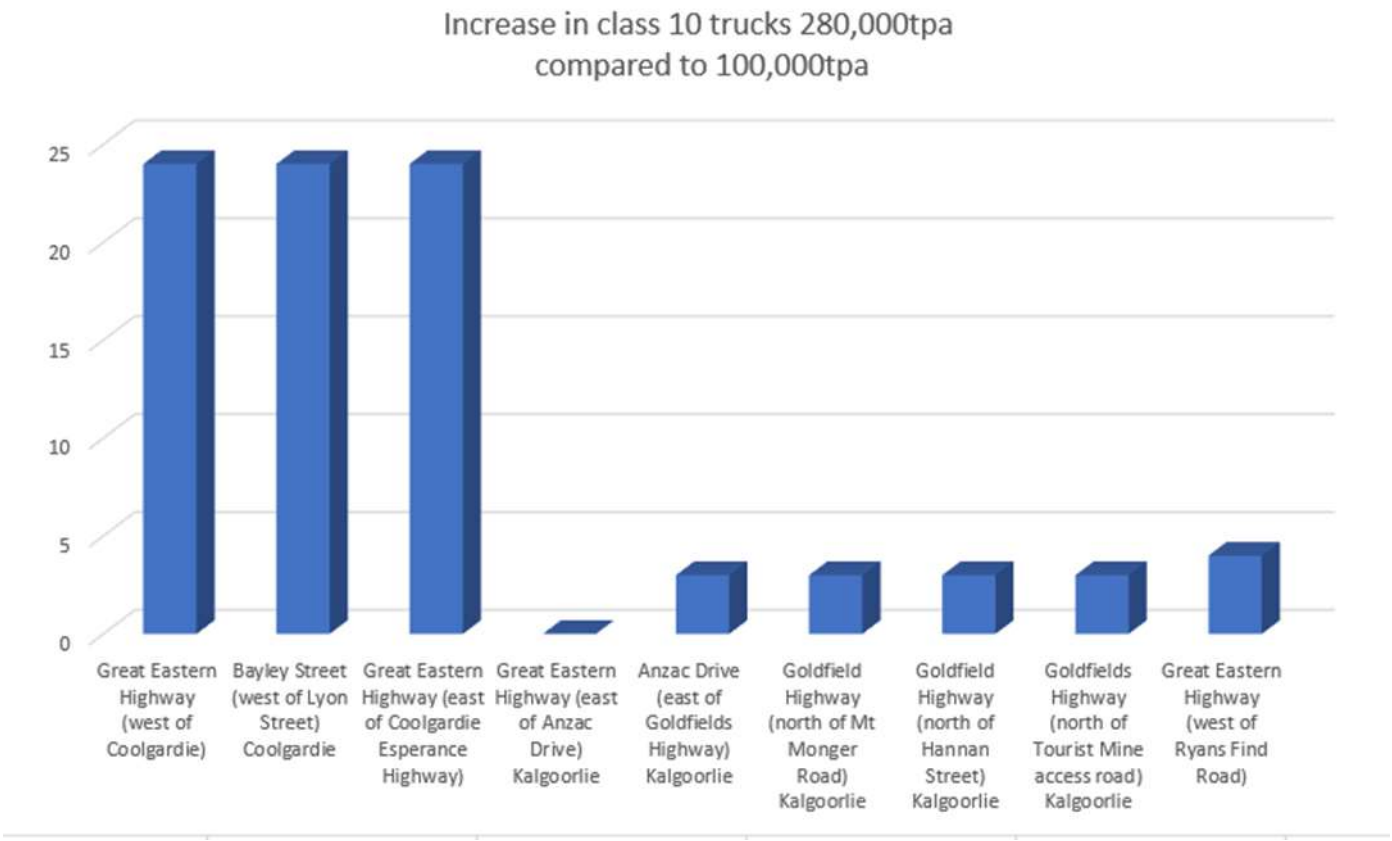

Figure 4 Increase in Class 10 trucks per day, 280,000 tpa compared to 100,000 tpa (vpd)

Peak Hour

Peak hour movement is typically 10% of daily traffic.

The hourly number of waste trucks (at 280,000 tpa) travelling to/from the site based on the following distribution is forecast to be:

– Approximately 75% by road from the Kalgoorlie rail inter-modal facility (2.2 trucks per hour one-way x 2 x 75%) = 3.3 trucks per hour, rounded to 4.
– Approximately 15% by road from Perth and other coastal WA areas (2.2 trucks per hour one-way x 2 x 15%) = 0.77 trucks per hour, rounded to one.
– Approximately 10% by road from NT/QLD/eastern states (not by rail to Kalgoorlie) (2.2 trucks per day one-way x 2 x 10%) = 0.5 trucks per hour, rounded to one.
– It is anticipated that most light vehicles and other trucks will travel from/to Perth (6.0 vehicles x 2 x 100%) = 12.0 vph.

The hourly number of waste trucks (at 100,000 tpa) travelling to/from the site based on the following distribution is forecast to be:

– Approximately 75% by road from the Kalgoorlie rail inter-modal facility (0.8 trucks per hour one-way x 2 x 75%) = 1.2 trucks per hour, rounded to 2.
– Approximately 15% by road from Perth and other coastal WA areas (0.8 trucks per hour one-way x 2 x 15%) = 0.3 trucks per hour, rounded to one.
– Approximately 10% by road from NT/QLD/eastern states (not by rail to Kalgoorlie) (0.8 trucks per hour one-way x 2 x 10%) = 0.2 trucks per hour, rounded to one.
– It is anticipated that most light vehicles and other trucks will travel from/to Perth (2.2 vehicles x 2 x 100%) = 4.4 vph rounded to 5.

The hourly number of waste trucks (existing) travelling to/from the site based on the following distribution is:

– Approximately 75% by road from the Kalgoorlie rail inter-modal facility (11 per week/7 days one-way x 2 x 75% x 10%) = 0.3 trucks per hour therefore less than one truck per hour on average.
– Approximately 15% by road from Perth and other coastal WA areas (11 per week/7 days one-way x 2 x 15% x 10%) = 0.05 trucks per hour therefore less than one truck per hour on average.
– Approximately 10% by road from NT/QLD/eastern states (not by rail to Kalgoorlie) (11 per week/7 days one-way x 2 x 10% x 10%) = 0.031 trucks per hour therefore less than one truck per hour on average.
– Most light vehicles and other trucks travel from/to Perth (31 per week/7 days x 2 x 100% x 10%) = 0.9 vph

The total additional waste trucks (280,000 tpa) travelling through Coolgardie per hour is therefore up to 2 per hour (two way) and 1 per hour through Kalgoorlie.

Weekly

The Site is forecast to generate around 644 one-way movements per week and 1,288 two-way movements per week (280,000 tpa). This compares to 280 one-way movements and 560 two-way existing movements (100,000 tpa case). This represents a net weekly increase of 728 vehicles per week (two-way) compared with current movements for 100,000 tpa.

The Site is forecast to generate 150 waste trucks one-way per week and 300 two way (280,000 tpa). This compares to 53 waste trucks one way and 106 two way (100,000 tpa. This represents a net weekly increase of 194 waste trucks per week (two way).

The total additional waste trucks (280,000 tpa) travelling through Coolgardie per week is therefore 165 (two way) and 19 through Kalgoorlie.

3.1.3 Decommissioning

Traffic associated with decommissioning will be insignificant compared to waste truck movements during 280,000 tpa operations and no impacts are anticipated on the adjacent road network.

3.2 Mt Walton Access Road/Great Eastern Highway intersection

3.2.1 Vehicle access and parking

All vehicular access to the site is via a private road named the Mt Walton Access Road from its intersection with GEH. This includes maintenance and service vehicles. Staff are flown to a local airstrip and then bussed to site and do not use the GEH/Mt Walton Access Road intersection. Parking is located at strictly defined locations on site.

3.2.2 Mt Walton Access Road/Great Eastern Highway intersection analysis

The intersection has recently been upgraded to Main Roads WA standards by Tellus to accommodate 36.5 m road trains. Details are shown in Figure 5.

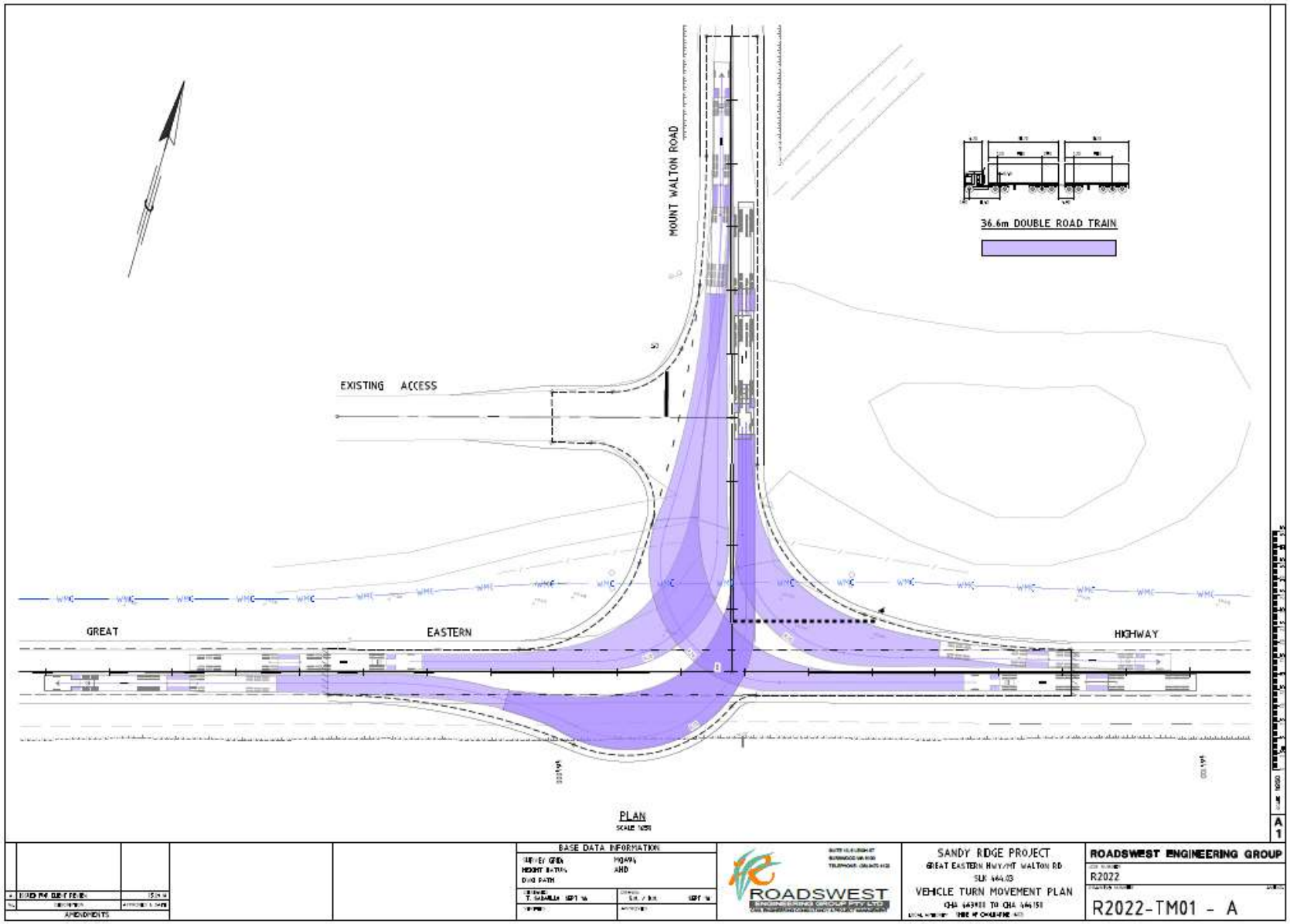

Figure 5 Mount Walton Road/Great Eastern Highway intersection

3.2.3 Level of service assessment

Sidra analysis[2] of this intersection has been undertaken based on current projections for 280,0000 tpa by 2029 (all site movements) and a level of service (LoS) of A is forecast for all movements other than the right turn into Mt Walton Road, which is LoS B, indicating the intersection is likely to operate to a good level of service. Further sensitivity analysis has been undertaken increasing all volumes by 50% and all levels of service remain the same. Table 4 refers.

Table 4 Mt Walton/Great Eastern Highway Sidra Analysis Peak Hour 2029 (280,000 tpa)

Movement	Turn	Veh	Heavy	Heavy %	Deg Sat	Ave delay (secs)	Level of service	95%le back off queue (veh)	95%le back off queue (dist m)	Ave speed km/h
GEH East										
5	T1	31	14	45.2	0.047	6	A	0.1	0.8	69.7
6	R2	6	3	50	0.047	11	B	0.1	0.8	48.9
Approach		37	17	45.9	0.047	6.8	N/A	0.1	0.8	65.2
Mt Walton Rd										
7	L2	6	3	50	0.011	7.4	A	0	0.7	46.4
9	R2	4	1	25	0.011	6.3	A	0	0.7	50.6
Approach		10	4	40	0.011	7	A	0	0.7	48
GEH West										
10	L2	4	1	25	0.073	9.4	A	0	0	63.7
11	T1	68	20	29.4	0.073	5.4	A	0	0	81.5
Approach		72	21	29.2	0.073	5.7	N/A	0	0	80.3

3.3 Crash data 2016-2020 (five years)

A review of the Main Roads Crash Analysis Reporting System (CARS) indicates the following:

– No reported crashes at Mt Walton Road/GEH intersection

– No reported crashes on GEH 500 m either side of Mt Walton Road.

The crash data does not indicate a safety issue on GEH in proximity to the intersection with Mt Walton Road or at the intersection.

3.4 Hours of operation

Traffic use Mt Walton Road (access road) is during daylight hours only, seven days per week and this will continue.

3.5 Traffic management on frontage streets

Analysis indicates no additional treatments on the frontage road are likely to be required to accommodate the proposed increase from 100,000 tpa to 280,000 tpa from a capacity perspective. However, from a safety perspective localised widening on Great Eastern Highway at the intersection with Mt Walton Road to allow westbound traffic to pass right turning traffic would improve safety at this location.

[2] Sidra parameters adjusted in accordance with Main Roads Modelling Guidelines to reflect the use of the intersection by 36.5 m road trains

3.6 Road safety impact

As indicated in Section 3.3, the reported crash data for GEH in the vicinity of the intersection with Mt Walton Road does not indicate a road safety issue. Analysis indicates minimal queuing and delay for turning movements, indicating the need for turning traffic to attempt to access inadequate gaps in the major road traffic stream is unlikely.

In 2018, Shawmac prepared a traffic report for Tellus Holdings in relation to the Mt Walton Road/Great Eastern Highway intersection and this report was used to design the upgrade to Main Roads Western Australia standards. Sight distance is good at this location and suitable for the design speed as identified in the earlier Shawmac report which assessed the geometry at the intersection.

Notwithstanding the analysis, safety at the intersection could be improved by widening of Great Eastern Highway at the intersection to allow westbound traffic to pass traffic turning right into Mt Walton Access Road.

Road Trains Entering (300 m) warning signs are currently in place in GEH on each approach to the intersection, together with advanced intersection warning signs with a road name tag. A Sandy Ridge Facility direction sign is also at the intersection.

A review has been undertaken of Government of Western Australia Department of Mines and Petroleum Resources Safety Overview of Dangerous Goods - Reportable Situations and Incidents 2013-2017 (DMP 2017). There have been two reported incidents in Kalgoorlie involving the transport of dangerous goods:

– 2013 -ammonium nitrate truck rolled over and spilled product.
– 2016 - a rear trailer of a diesel tanker collided with an empty Sulphuric acid trailer. 25 kl of diesel spilled onto the road.
– The DMP 2017 document indicates the data suggests that dangerous goods transport companies need to focus on ensuring road train drivers do not speed and that they negotiate poor roads carefully. Vehicle drivers should be well trained and provided with adequate rest breaks to maintain their alertness.
– Mitigations and operational control measures currently in place by Tellus Holdings include:
– Only experienced and licenced transporters are permitted to deliver waste to Sandy Ridge.
– Dangerous Goods transport regulations obligate transporters to have emergency response plans in place prior to transport.
– Tellus implements robust traffic and supporting management plans and procedures to manage risks associated with transport.
– Thorough audits on potential transporters are conducted by Tellus before authorising transport of waste.
– Strict packaging and containment requirements.
– Tellus has invested over $1 million upgrading the intersection of Great Eastern Highway and Mt Walton Rd to the specifications required by Main Roads WA to ensure safe access for road trains.
– A continued preference for rail transport where feasible.
– Tellus is a member of the Shire of Coolgardie’s Emergency Management Committee, which ensures the company stays up to date with the latest information.

3.7 Public transport access

This section is not applicable as public transport does not serve the site and is not proposed to do so.

3.8 Pedestrian access

There is no pedestrian access from the external road network and none is proposed.

Pedestrian access around the site is via designated routes segregated from traffic routes. The proposal infrastructure is shown in Figure 6.

Figure 6 Proposed infrastructure

3.9 Cycle access and end of trip facilities

There is no existing or proposed cycling access from the external road network, and therefore, no requirement for end of trip facilities.

3.10 Site specific issues

No additional site-specific issues have been raised or noted.

4. Recommended works

Analysis indicates no additional measures are required to the road network from a capacity perspective, however safety at the Great Eastern Highway/Mt Walton Access Road intersection could be improved by widening of Great Eastern Highway at the intersection to allow westbound traffic to pass traffic turning right into Mt Walton Access Road.

5. Summary and conclusions

The net traffic volume increase from 100,000 tpa to 280,000 tpa is forecast to be 52 vpd one-way movements and 104 vpd two-way movements.

The site currently generates around four road trains per day (two-way) associated with the waste transfer and is forecast to generate around 44 road trains per day (two-way) for 280,000 tpa.

Comparing 100,000 tpa with 280,000 tpa, the additional 36.5 m trucks on Great Eastern Highway through Coolgardie is forecast to be 24 per day (two-way) an increase of 7% by 2029.

Comparing 100,000 tpa with 280,000 tpa, the additional 36.5 m trucks on Great Eastern Highway west of Kalgoorlie is forecast to be 24 per day (two-way) an increase of 12% by 2029.

Comparing 100,000 tpa with 280,000 tpa, additional 36.5 m trucks on Anzac Drive in Kalgoorlie is forecast to be three per day (two-way) an increase of <1% by 2029.

Comparing 100,000 tpa with 280,000 tpa, additional 36.5 m trucks on Goldfields Highway (north of Hannan Street) in Kalgoorlie is forecast to be three per day (two-way), an increase of 2% by 2029.

The total additional waste trucks (280,000 tpa) travelling through Coolgardie per hour is up to 2 per hour (two way) and 1 per hour through Kalgoorlie.

Main Roads WA indicates a road capacity of 8,000 vpd for a single carriageway with one lane in each direction. All considered roads within the study area are well within capacity, both now and in 2029, assuming a growth rate of 2% per annum on the road network and including forecast volumes generated by the site.

There have been no reported crashes on Great Eastern Highway in the vicinity of the site or at the intersection of Mt Walton Access Road.

Sidra analysis of the Mt Walton Road/Great Eastern Highway intersection has been undertaken for 2029 based on current projections for 280,000 tpa. The LoS of A is forecast for all movements, other than the right turn into Mt Walton Access Road, which is a LoS B, indicating the intersection is likely to operate to a good level of service. Sensitivity analysis increasing all volumes by 50% indicates no change to the level of service.

It is concluded that the local and regional road network can accommodate the forecast traffic associated with the proposal. No additional road network measures are considered necessary from a capacity perspective however, safety at the Great Eastern Highway/Mt Walton Access Road intersection could be improved by widening of Great Eastern Highway at the intersection to allow westbound traffic to pass traffic turning right into Mt Walton Access Road.

TELLUS

LONG-TERM SAFETY AND SUSTAINABILITY

SANDY RIDGE FACILITY
TRANSPORT MANAGEMENT PLAN

Tellus Holdings Ltd | July 2021

Approval

The signatures below certify that this procedure has been reviewed and accepted and demonstrates that the signatories are aware of all the requirements contained herein and are committed to ensuring their provision.

	Name	Position	Sign-off Status	Effective Date
Document Owner	Shawn Fuerste	Transport Coordinator	Approved	1/07/2021
Document Reviewer	Pascoe Murison	Chemical Waste Manager	Approved	
Document Approver	Michael Ingram	Chief Operating Officer	Approved	

Amendment Record

This procedure is reviewed to ensure its continuing relevance to the systems and process that it describes. A record of contextual additions or omissions is given below:

Page No.	Context	Version	Date
[00]	[Click to add text]	[Click to add version]	[Enter date]
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Table of contents

ABBREVIATIONS AND DEFINED TERMS

Approved Transport Service Provider	A transport operator that has provided relevant information and qualifications to Tellus and been audited to meet the required standards prior to transporting waste to the Facility
Chain of Responsibility (COR)	Chain of Responsibility (CoR) legislation in WA, recognises the responsibilities that others have in the transportation of goods by road, beyond that of just the driver and operator. It means anyone who has control in the transport chain can be held legally accountable if by action, inaction or demand, they cause or contribute to road safety breaches. Similar COR legislation applies in all states of Australia.
ERT	Emergency Response Team
Emergency Response Provider	Emergency response team nominated by the Approved Transport Service Provider in accordance with WA legislative requirements (all transport of controlled waste to have a nominated emergency response provider).
Facility	Sandy Ridge Facility
HAZMAT	Hazardous Material
Hazardous materials	Materials subject to chemical or radioactive regulations
HEAT	HAZMAT Emergency Response Team
Integrated Management System (IMS)	Integration of policies, processes and procedures into one unified management framework.
km	Kilometres
Pre-qualification process	Process undertaken to qualify Transport Service Providers for transporting waste to the Sandy Ridge Facility
Sensitive load	A waste consignment that Tellus deems to be sensitive, taking into consideration the nature of the waste, regulatory requirements and/or relevant agency interest.
Mt Walton Road	The main access road from the Great Eastern Highway to the Sandy Ridge Facility (sometimes referred to as Mt Walton East Intractable Waste Disposal Facility (IWDF) Access Road)
TMP	Transport Management Plan
TSP	Transport Service Provider
WA	Western Australia
WAC	Waste Acceptance Criteria
WAP	Waste Acceptance Procedure
Waste Generator	The generator of a waste proposed to be disposed at Sandy Ridge Facility under a Waste Services Contract.
Waste Services Contract (WSC)	A written agreement between a waste generator and Tellus Holdings Ltd to dispose of a waste at Sandy Ridge Facility.

1 Introduction

1.1 Background

Tellus Holdings Ltd ('Tellus') has Environmental Approval (refer to Ministerial Statement 1078, EPBC 2017/7478 and associated Operating Licence L9240/2020/1) to operate the Sandy Ridge Facility ('Facility'). The Facility involves the ongoing operation of an open-cut kaolin mine and complementary waste storage and disposal facility with supporting above-ground infrastructure.
The Facility is located approximately 75 kilometres (km) northeast of Koolyanobbing, and approximately 240 kilometres (km) northwest of Kalgoorlie, in the Shire of Coolgardie, within the Goldfields Region of Western Australia (WA).
The Facility is accessed from the Great Eastern Highway by the Mt Walton East Intractable Waste Disposal Facility (IWDF) Access Road, which intersects the highway 96 km east of Southern Cross and 90 km west of Coolgardie. After travelling 90 km north on the IWDF Access Road, turn west onto Mt. Dimer Road for 4.5 km, then north along the Sandy Ridge access road for a further 4 km to the Facility.

1.2 Scope and Purpose

The Sandy Ridge Facility Transport Management Plan (TMP) provides a description of the measures which are utilised and implemented by Tellus to manage transport of wastes to the Facility.

1.2.1 SCOPE

This TMP:

1. Is the lead document which supports processes to provide controls and risk mitigations to manage the safe delivery of waste to the Facility.
2. Is supported by three subsidiary plans as follows:
    a. The Radiation Transport Management plan which includes specific needs and details of the management of waste products delivered to the Facility; and
    b. The Traffic Management Plan – Access Roads which details management processes on the Private Access Road situated between the Great Eastern Highway and the Facility and is managed by Tellus.
    c. The Traffic Management Plan, Mount Walton Road Rail Crossing.
3. Includes some references to matters of Emergency Response, however these should be considered in further detail through the Emergency Response Plan.

These relationships are depicted in the Figure 1 below.

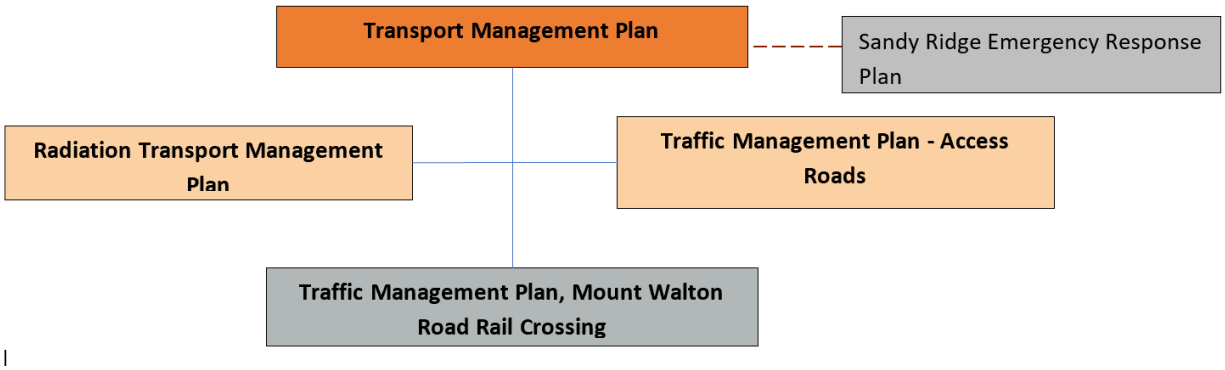

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Figure 1 Relationship of the Transport Management Plan with other plans

As described in Section 1.1, Tellus is an operator of an open-cut kaolin mine and complementary waste storage and disposal facility and does not propose to directly provide transport services to the Facility; it is intended that these services will be provided by others as defined below:

1. In most instances Waste Generators will provide transport to the facility or contract a qualified transport provider to transport to the facility.
2. Where agreed and contracted with Waste Generators, Tellus will contract a relevant Qualified Transport Contractor to transport the waste to the site.

In addition, to relevant transfer of waste materials to the Facility, some hazardous material and/or dangerous goods transport tasks are contracted by Tellus including:

- Contracted Bulk fuel deliveries
- Contracted Waste Oil collections for recycling
- Contracted disposal of wastes not able to be disposed at the Facility (e.g. relocation of wastes which may be consolidated or separated on the site but require disposal elsewhere)
- Contracted transport of rejected waste – for example, additional waste that has not been recorded in the manifest.

1.2.2 PURPOSE

While Tellus holds a responsibility as a receiver of waste in the first instance and as a contracting party in the second, this Transport Management Plan addresses management of the waste product and transport from receiving an order to delivery and on-site management. This TMP has been developed to provide controls over detailed aspects of the packing, loading, handling, storage in transit (and where relevant, transport of radioactive material) from any location in Australia to the Facility. These elements recognise and address key issues within the Chain of Responsibility (COR) legislation which applies in all states of Australia.

The nature of most of the waste to be received at the Facility is defined in the Sandy Ridge Waste Acceptance Criteria documents and as a subset of the wastes laid out in the *Environmental Protection (Controlled Waste) Regulations 2004, Schedule 1 – Controlled Waste*. For the purposes of transport and storage, these wastes may also be regulated as dangerous goods or radioactive materials.

This plan identifies the administrative and operational controls which Tellus implements to minimise the potential impact of transport activities associated with the Facility.

The primary focus of this Plan is on waste materials which will be received at the Facility, but general freight is also subject to those controls which are applicable to the lower risk profile of such freight. This Plan reflects the controls currently implemented by Tellus and is subject to monitoring and improvement over-time.

This TMP briefly outlines transport management of waste products to or from the Facility. Tellus acts as either a receiver of waste (consignee) or a contractor of transport services for the delivery of waste.

In summary, the purpose of this Transport Management Plan (TMP) is to:

- Outline the legislative framework and industry codes applicable to transport of waste, hazardous and dangerous goods in Western Australia.
- Explain Tellus' role in waste transport management.
- Describe the controls that Tellus has implemented to support the transport management regulatory framework and maintains to manage risk and support transportation regulatory compliance.
- Ensure that procedures, roles and responsibilities are defined to support this Plan.

1.3 Objectives

The principal objectives of this TMP are to:

- Support a high quality, reliable and safe transport system to the Facility.
    - Measure: on-time and on-schedule deliveries, number of delayed deliveries, number of minor incidents (for example, mechanical failures) and number of major incidents (for example, incident response requirements).
- Minimise potential impact of waste transport operations on the environment
    - Measure: number of spills or minor incidents which may cause potential contamination (ongoing monitoring) and number of contamination events.
- Minimise potential impacts to the public from waste transport
    - Measure: number of public communications in relation to the transport of waste to the Facility. This includes any positive communications through community groups or feedback received from the surrounding community.

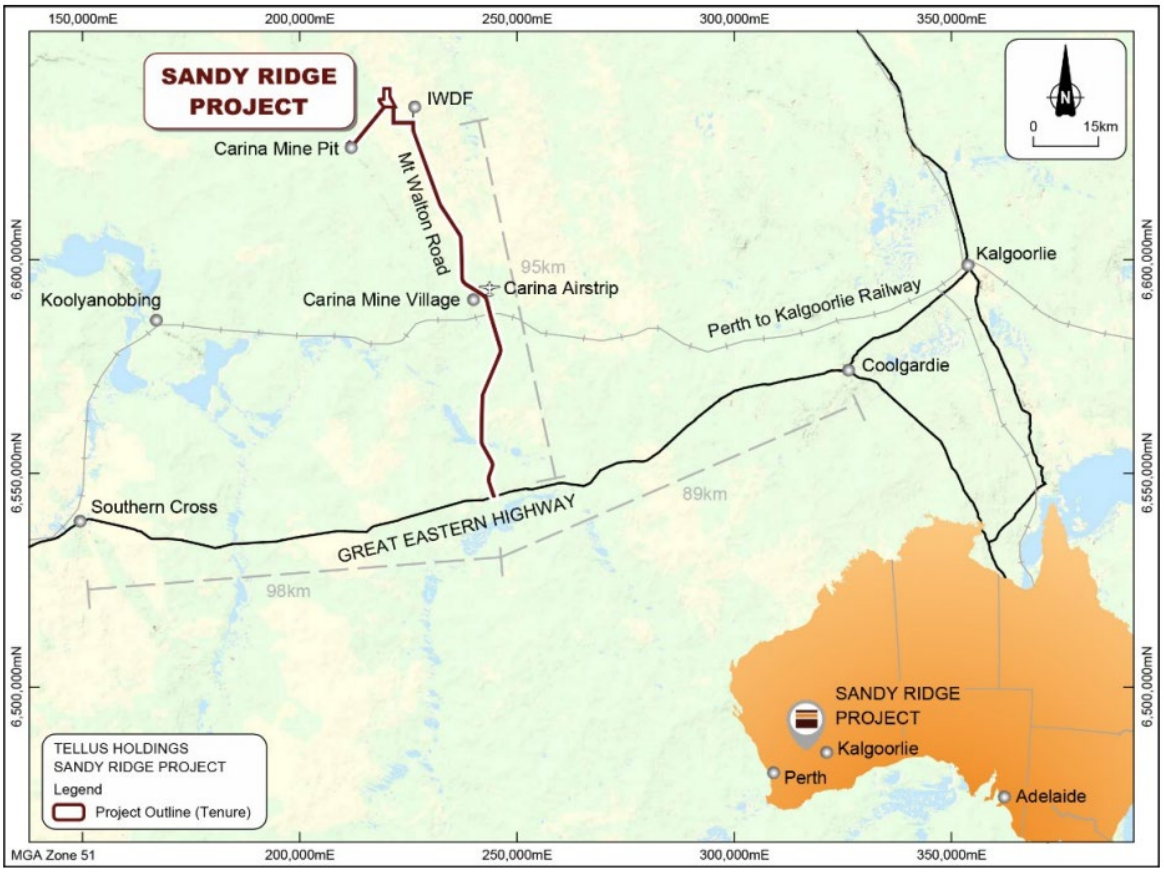

Figure 1-2 Regional Location

2 Regulatory Framework

Road transport of wastes to Sandy Ridge Facility is subject to an extensive suite of legislation administered by multiple agencies. This is summarised in Table 2-1.

Legislation	Agency	Relevance to Transport to Sandy Ridge Facility
National		
Heavy Vehicle National Law 2012 (Enacted in all Australian states except WA and NT)	National Heavy Vehicle Regulator	Imposes Chain of Responsibility requirements on all facets of road transport management for heavy vehicles (over 4.5 tonnes). Applicable to Sandy Ridge Facility as consignee of wastes are accepted from throughout Australia.
Western Australia		
Dangerous Goods Safety Act 2004		
Dangerous Goods Safety (Road and Rail Transport of Non-explosives) Regulations 2007	Department of Mines Industry Regulation and Safety – Resources Safety Division	Requires a transporter to have a Transport Emergency Plan and to be or to have engaged an approved (by DMIRS' Chief Dangerous Goods Officer) emergency responder to attend in the event of an incident during transport. Tellus require via waste service contract conditions, that waste generators use a suitably qualified transporter, **and an approved emergency responder in accordance with the Act.**
Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007	Department of Mines Industry Regulation and Safety – Resources Safety Division	Specifies the requirements for storage, use, carrying (e.g. transporting) and disposal of dangerous goods. Requirements vary depending on the quantity and safety risk of the materials. Tellus will accept some dangerous goods for disposal at Sandy Ridge Facility and holds a Dangerous Goods Site Licence (DGS022452) allowing above-ground storage of diesel fuel and a range of dangerous goods classes.

Legislation	Agency	Relevance to Transport to Sandy Ridge Facility
Environmental Protection Act 1986		
Environmental Protection (Controlled Waste) Regulations 2004	Department of Water and Environmental Regulation	Regulates road transport of specified wastes (controlled wastes), including carrier licensing, waste transport vehicle licensing, approved disposal facilities, waste tracking records to be kept and reported. Sandy Ridge is an approved controlled waste disposal site. Waste tracking records are kept and reported to DWER. Transporter breaches will be recorded and communicated to DWER where required.
National Environment Protection Council Act 1994	Australian Government	The overall act outlines the measures for several environmental factors including the movement of waste.
National Environment Protection (Movement of Controlled Waste between States and Territories) Measure 1998	Australian Government	Specifies the requirements and information to be provided by waste generators, transporters and facility operator
Occupational Safety and Health Act 1984	WorkSafe – Department of Commerce	Regulates hazardous substances at non-mining workplaces. Workplaces includes transport activities and infrastructure. Transport companies must comply with the requirements of this Act.
Radiation Safety Act 1975	Radiological Council (with Radiation Health Unit - Department of Health).	Specifies safe use, handling, storage and transport of radioactive materials, including radioactive waste. Transporters will be licensed under the Act. Sandy Ridge Facility is authorised to accept radioactive wastes for surface storage, via a site registration under this Act.
Radiation Safety (Transport of Radioactive Substances) Regulations 2002.		Specifies the requirements for transporting radioactive wastes. Radioactive waste disposal records will be kept and reported to Radiation Health Unit. Tellus has prepared a specific Radiation

Legislation	Agency	Relevance to Transport to Sandy Ridge Facility
		Transport Management Plan which has been submitted to the WA Radiation Health Unit for information.
Road Traffic (Vehicles) Act 2012	Main Roads WA	Imposes Chain of Responsibility requirements on all facets of road transport management regardless of vehicle size.
Codes Of Practice		
Radiation Protection Series C-2 (2019)	Australian Government	**Commonly referred to as the Transport Code**, the objective of the code is to establish uniform requirements for the transport of radioactive material in Australia by road, rail and those waterways not covered by Maritime legislation This edition of the Code for the Safe Transport of Radioactive Material, RPS C-2 (Rev. 1) (commonly referred to as the Transport Code) adopts the International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material 2018 Edition (SSR-6, Rev. 1); it replaces the 2014 edition (RPS C-2).
Australian Dangerous Goods Code	National Transport Commission	**Code of practice for the movement of dangerous goods on road and rail across Australia.**

2.1 Development of the TMP

The requirement for this TMP originally arose as part of the development application requirements for the facility and the original version accompanied the Tellus Development Application submitted to the Shire of Coolgardie in 2018.

Development consent for the Facility was assessed under the Western Australia (WA) *Environmental Protection Act 1986* and the Commonwealth *Environmental Protection Biodiversity Conservation Act 1999*. Approval for the project was granted by the Minister for Environment on 27 June 2018.

This version of the Plan updates current information, processes and development of the site. The transport of waste to and from the Sandy Ridge Facility will be undertaken in accordance with relevant legislation, regulations and guidelines applicable at a State, Territory and Commonwealth level.

3 Transport Controls

3.1 Transport Controls

3.1.1 WASTE TRANSPORT SERVICE PROVIDER APPROVAL

To fulfill regulator imposed and Tellus requirements, Tellus has established and implemented, within its' IMS procurement process, specific procedures to determine the acceptability of Waste TSPs that is targeted for transportation safety. The requirements include a 2-stage methodology, with Stage 1 being a self-assessment questionnaire targeting specific capability, skills and experience in transporting controlled or radioactive waste. All Waste TSPs delivering waste to the Facility must pass Stage 1 pre-qualification. Pre-Qualification Stage 2 is an audit of the TSP and is required where Tellus engages the TSP directly. The audit criterion includes:

- Capability and experience in heavy vehicle operations for elevated risk freight types
- Accreditation(s) of the TSPs' management systems for:
    - Quality (ISO 9001), Safety (ISO 45001, AS/NZS 4801) and Environmental (ISO 14001)
- Accreditation(s) of the TSPs' heavy vehicle 'operations' for the management of:
    - Vehicle Standards, Maintenance, Mass, Dimension and Loading, and Fatigue, respectively, under the National Heavy Vehicle Accreditation Scheme (NHVAS) and West Australia Heavy Vehicle Accreditation (WAHVA)
- Licensing or licensee arrangements held by the Waste TSP, including controlled waste and radioactive materials transportation, dangerous goods
- Line management and employee competence (e.g. licensing, permits, training)
- Risk management and operations planning scoped for the risks of heavy vehicle operation and dangerous goods and waste load types

Additional to the above, within the Tellus' IMS procurement process, procedural controls to identify requirements for the approval of a Waste TSP that includes:

- Evaluation of the TSPs types and levels of insurance, including:
    - Public and products liability, workers compensation, professional indemnity; and
    - Specialist type coverage e.g. pollution liability, dangerous goods carriage
- Evaluation of the TSPs organisational / financial bona fides +
- Evaluation of the proposed commercial contractual arrangements with TSPs' or other parties
- Assessment of the TSPs workplace health and safety performance

3.1.1.1 Mt Walton Rd Usage Requirements

Tellus has entered into a Road Use Agreement with the owner of the Mt Walton Rd, which obligates Tellus and any Waste TSP to meet obligations in order to use the road. Accordingly, Waste TSPs are required to enter into contract with Tellus for access to the Sandy Ridge Access Road. This contact sets out the terms and conditions for use of this and obligates the TSP to comply with all applicable regulatory requirements and Tellus requirements, for example, speed limits, daylight use only, length and mass limits.

Implementation - Scenario example.

Heavy vehicle operations, the movement of wastes and transport of dangerous goods are comprehensively regulated (see Section 2). The use of Waste TSPs accepted by Tellus is a condition of contract, for Waste Service Contracts, executed by Waste Clients,

3.1.2 WASTE CHARACTERISATION

Tellus uses requires detailed characterisation to ensure wastes meet the Facility's WAC prior to agreeing to accept wastes at the Facility. Characterisation is conducted in accordance with the Western Australian *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)* and in a manner which satisfies the Tellus Waste Acceptance Procedure. By requiring such detailed characterisation prior to contracting to receive wastes at the Facility, Tellus has taken due care to ensure that the composition and characteristics of the wastes are well understood.

In the context of this Plan, waste characterisation also facilitates:

- Identification (classification) of the waste by group or type, which, in turn, allows for application of the respective regulatory requirements for the intrastate or interstate movement of wastes, including:
    - Authorisations to move, waste tracking and other movement/transporter obligations.
- Identification (classification) of the waste as either dangerous goods (or non-dangerous goods) which, in turn allows for application of regulatory requirements for the transport of dangerous goods including:
    - Packaging, labelling, loading, transport and unloading and other transporter obligations.

This process also supports also supports the respective regulatory requirements for approval, tracking and reporting.

Implementation - Scenario example.

Waste characterisation will provide a comprehensive understanding of the chemical composition and characteristics (e.g. flammability, self-heating potential and pH) of wastes. The analysis results will assist with ensuring that the waste is packaged appropriately for transport and is segregated from incompatible materials. For example, wastes with low pH (acidic) would not be transported with wastes with high pH (basic).

3.1.3 WASTE PACKAGING

As a part of the contracting process, Tellus requires the waste generator to agree the packaging type and format which will be used for a waste. Tellus uses the characterisation process to assess and define the requirements for the packaging to be used for the wastes. For dangerous goods, the ADG Code and the RPS-C2 provide technical requirements and specifications for compliant packaging and other containers. For wastes that are non-dangerous goods, Tellus requires that packaging and containers used, are to the standards mandated for dangerous goods, to ensure appropriate quality standards and specification, as a beyond compliance risk approach.

Implementation - Scenario example.

Waste packaging will be tailored to the chemical composition and characteristics of wastes to be transported. Packaging will be selected to minimise the likelihood of spills in the event of an incident en-route to the Facility.

3.1.4 DELIVERY PLAN

The Delivery Plan is a Waste Services Contract (WSC) requirement for the supply of waste consignments to the Facility for each calendar quarter. It consists of the waste generator's schedule (forecast) of planned waste deliveries and relevant waste consignment documentation. The waste generator's Delivery Plan will be reviewed by Tellus prior to any transport activities and if approved, an Authorisation to Ship Waste Notice will be issued. The Authorisation to Ship Waste Notice is a notification issued by Tellus to the waste generator permitting commencement of transport activities.

Implementation - Scenario example.

Tellus will not authorise a waste to be dispatched to the Facility unless the transporter has met the applicable requirements of the staged pre-qualification process.

3.1.5 SCHEDULE

The Schedule is the waste generator's forecast of weekly waste consignment deliveries to the Facility, including expected tonnages or volumes. The information in the schedule, such as waste type and quantity, informs the planning of the Facility's operational activities such as waste treatment and onsite waste storage capacity requirements, based on expected waste consignment arrivals.

Implementation - Scenario example.

Tellus will have weekly schedules of wastes to be transported to the Facility. Information will include the type of waste, where it is coming from and who the transporter is.

3.1.6 TRANSPORT RISK ASSESSMENT AND JOURNEY MANAGEMENT PLANS

Tellus requires that a transport contractor (engaged by Tellus or a Waste Generator) prepare and submit for Tellus' approval a Transport Risk Assessment and/or a Journey Management Plan (Appendix 2) for any loads being delivered to the Facility, prior to the issuing of an Authorisation to Ship Waste Notice.

For waste material deliveries, the need for Tellus' review and acceptance of a Transport Risk Assessment and/or a Journey Management Plan is defined during Tellus' Waste Acceptance Procedure, prior to issue of an Authorisation to Ship Waste Notice. The decision as to whether a Transport Risk Assessment and/or a Journey Management Plan is required will be determined by an internal (Tellus) risk assessment which will consider;

- the type of waste and any environmental and/or safety hazards associated with that material
- the transport route
- the mode of transport (road, rail, sea)
- the quantity and frequency of deliveries, and
- Existing Legislative controls.

Transport contractors may use their own format and systems of Transport Risk Assessment and/or Journey Management Plans, and these will be audited upon submission to Tellus to ensure that they address at minimum:

- Chain of Responsibility Legislation
- Dangerous Goods and Radioactive Materials Transport Legislation
- Vehicle and road ratings (eg, RAV system in Western Australia)
- Route assessment (including alternate routes and hold-points if required).

Implementation - Scenario example.

The inclusion of a risk assessment and Journey Management Plan allows Tellus to understand additional detail of the transport route and timing for relevant wastes and dangerous goods providing the ability for additional planning at the site and communications with the Waste Generator/Transporter where delays or incidents may occur. It improves the ability to service the task or respond appropriately should a need occur.

3.1.1 WASTE CONSIGNMENT TRANSPORT ASSOCIATED DOCUMENTATION

The following documentation will be applicable to waste consignment deliveries to the Facility. These plans, permits or forms are either required prior to dispatch or upon arrival at the Facility. The principle documents include the following:

- Delivery Plan, specifying the exact route details from the waste generator location to the Facility, considering the waste's Dangerous Goods characteristics, modes of transport, vehicle combinations, rest stop locations, refuelling locations, local jurisdiction authority notifications and Tellus notifications (for sensitive loads only), emergency response services providers, contingency systems and procedures applicable to deviations to the route plan, use of the Mt Walton Road, etc.
- Consignment Authorisation or other approval, issued by the regulator in the jurisdiction of destination (e.g. DWER), authorising the movement of the waste into Western Australia
- Waste Transport Certificates or other approval issued by the regulator in jurisdiction of origin (e.g. NSW EPA) authorising the movement of waste out of that jurisdiction ,and track through jurisdictions of transit, and into WA as the jurisdiction of destination
- Controlled Waste Tracking Forms, issued by the regulator, in Western Australia (DWER), initiating and tracking the movement of the waste, within WA, to the waste facility (Sandy Ridge)
- Shippers' Declarations for dangerous goods, where the wastes are dangerous goods. These identify consignor/consignee information, as well as type, quantity and packaging of the consignment
- Consignment notes and other transport/transporter commercial documentation
- Container weight declarations, required under heavy vehicle mass regulations in all jurisdictions
- Biosecurity Permits, issued by the WA regulator (DPIR) for 'importation' of wastes in WA

Implementation - Scenario example.

Transporters must submit a Delivery Plan to Tellus to be granted an Authorisation to Ship Waste Notice. For sensitive loads, Tellus will request that relevant agencies are notified in advance of the planned transport date(s).

The Delivery Plan must include contingency procedures if the consignment is unable to be delivered according to the Schedule. For example:

- Which agencies must be consulted/notified of a consignment's change of delivery route
- Where the transporter will divert to if the planned route is blocked
- Whom the emergency response service provider is (for dangerous goods).

Refer to the Sandy Ridge Emergency Response Plan for information on managing an incident involving a waste consignment destined for the Facility.

3.1.2 WASTE RECEIPT

Upon arrival at Facility gate, the waste consignment's transport documentation will be reviewed by the Sandy Ridge Facility gatehouse attendant. The exterior of the truck, shipping containers and non-containerised bulk wastes will also be inspected.

If the documentation meets packaging and transport standards as per the WSC and Tellus' Waste Acceptance Criteria (see section 3.1.1), the consignment will be permitted to enter site and be subjected to the Sandy Ridge Waste Acceptance Procedures. These include internal inspection of containers containing packaged goods to confirm that the stowage and restraint is appropriate. Poor packaging and restraints may trigger actions relating to Chain of Responsibility and transporter non-compliances. A waste receipt notice will be issued for conforming consignments and the waste will be placed in the waste storage area prior to treatment and disposal.

If a consignment is found to be non-conforming, it is initially quarantined and an attempt is made to resolve the non-conformance with the waste generator and relevant regulatory authority, if required. A non-conforming consignment could arise for several reasons such as:

- incomplete documentation
- packaging or transport standards, or
- composition and identity.

If the non-conformance cannot be resolved, the WSC enables Tellus to issue a Waste Rejection Notice to the waste generator and the consignment remains quarantined pending resolution by the waste generator.

In the event of inaction by the waste generator, the WSC allows Tellus to treat, dispose or remove the consignment at the waste generator's cost. In which case external transport will be in conformance with the relevant disciplines of this plan.

3.2 Transport Directly Contracted by Tellus

As stated earlier, the majority of the management of transport of wastes to the Facility is undertaken by Waste Generators, however Tellus also provides contracted transport where this forms part of the customer agreement.

Only contractors passing a Stage 2 pre-qualification audit (Section 3.1.1 – Transporter pre-qualification) will be used by Tellus.

3.3 Communications

Transport communication may include mobile telephone, UHF radio, satellite telephone or any combination of the above. It is recommended that at least two separate means of communication are available.

If the transport route is likely to go outside mobile network communication range for extended periods, a portable satellite telephone should be carried in the vehicle.

Waste deliveries are scheduled to arrive at the facility on a predetermined day which is scheduled in conjunction with the Waste Generator. Major intersections on the Mt Walton Road are clearly signposted with speed information on the journey to the facility.

Transport operators are required to call the Tellus site from the following locations:

- Incoming to Site:
    - Departing Kalgoorlie or Southern Cross
    - Corner of Great Eastern Highway / Mount Walton Road
    - Arriving at the Sandy Ridge administration office
- Outgoing from Site:
    - Departing the Sandy Ridge administration office
    - Corner of Great Eastern Highway / Mount Walton Road
    - Arriving at Kalgoorlie or Southern Cross
- Call up bay – all waste trucks must stop and call for train movements at the rail crossing shown in Figure 3.

This provides early advice of estimated arrival times at the facility and information on vehicles in the vicinity should there be a need for emergency response.

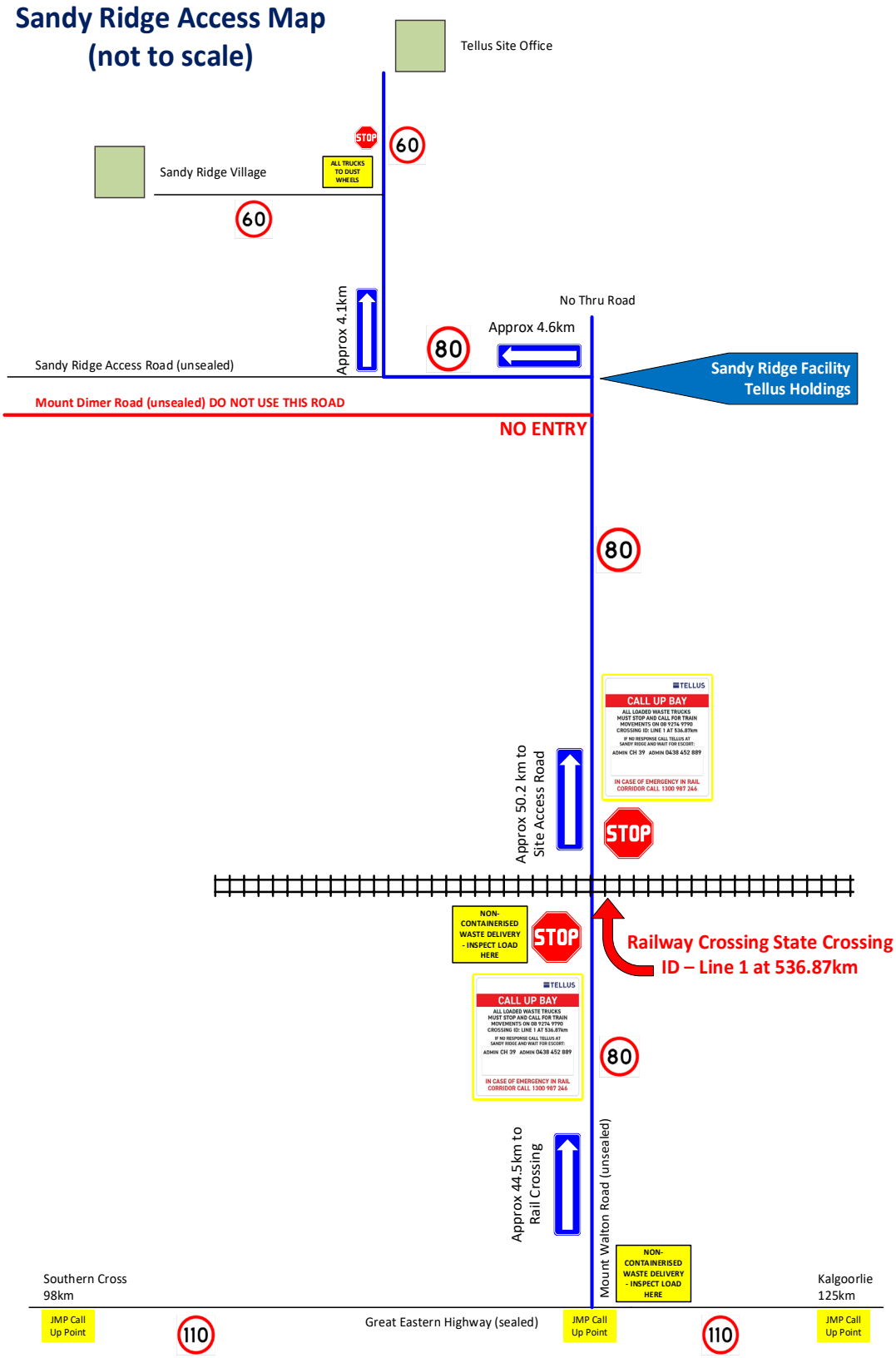

Figure 1 Sandy Ridge Access Map

4 Roles and Responsibilities

Responsibilities for transport management are summarised in Table 4-1. Tellus' responsibilities centre around setting strict criteria on the nature of wastes acceptable for disposal at the Facility. Tellus liaises with the waste generator to schedule the dispatch of the waste to the Facility. Once the waste arrives at the Facility, Tellus is responsible for verifying that the waste meets the agreed consignment specifications and the Waste Acceptance Criteria for the Facility

Table 4-1. Transport management responsibilities.

	Transport contracted by Waste Generator				Transport contracted by Tellus			
	Waste generator	Transporter (client	Tellus	Government based Emergency Response	Waste generator	Transporter	Tellus	Government based Emergency Response
Detailed waste characterisation	*				*			
Waste packaging	*				*			
Waste acceptance			*				*	
Delivery plan	*				*			
Delivery plan acceptance			*				*	
Transporter pre-qualification	*				*			
Transporter pre-qualification acceptance			*				*	
Transport schedule	*		*		*		*	
Transport contingency	*	*			*	*	*	

	Transport contracted by Waste Generator				Transport contracted by Tellus			
	Waste generator	Transporter (client	Tellus	Government based Emergency Response	Waste generator	Transporter	Tellus	Government based Emergency Response
Transport activities		*				*		
Waste consignment documentation	*	*			*	*		
Waste receipt (including documentation)			*				*	
Waste conformance (onsite verification testing)			*				*	
Attending road accident involving transporting hazardous material			#	*			#	*

 # Tellus' onsite Emergency Response Team will assist based on the proximity of the accident to the Facility and the Local Emergency Services response time

4.1 Responsibilities of the Waste Generator

It is the waste generator's responsibility to ensure that, for all transport of packages containing waste material:

- Packaging meets regulatory requirements for the classification of the package
- Packages are correctly classified, marked, labelled, placarded and/or certified as required under regulations
- All required paperwork has been correctly completed, dated and signed
- The consignment is in a condition for transport as described by regulations
- The carrier is informed of the package classification.

For transport and related activities being conducted under this TMP, Tellus (or a representative) authorise the consignment and will receive the waste.

4.2 Responsibilities of the Transporter

It is the transporter's responsibility to ensure that:

- All drivers involved in the transportation are appropriately licensed (or supervised by someone licensed) in accordance with the relevant regulatory requirements
- All drivers are provided with training in the health & safety and environmental awareness issues related to the transport of hazardous material including issues related to the properties of the material especially when there are other contaminants present in the load
- All drivers are familiar with the use and significance of the transport documentation
- The integrity of packages has not been compromised prior to loading and that they are loaded correctly for transportation
- Exterior surfaces of the packages are demonstrated to be free of contamination, and
- Wheels, tray, other parts of the transport vehicle are demonstrated to be free of contamination.

If a TSP is engaged directly by Tellus they will have been assessed under pre-qualification conditions, and Tellus will engage with them, ensuring that they are aware of these responsibilities. This is also completed (self-assessment questionnaire) for client-engaged TSPs.

4.3 Tellus Responsibilities

Tellus will be accountable for all aspects pertaining to the operations, traffic management and safety at the Facility and on the Mt Walton Road.

Tellus are responsible for:

- Implementation of this Plan
- Day-to-day Facility management
- Ensuring compliance with relevant legislation and company policy by establishing and maintaining appropriate management and monitoring systems
- Monitoring the performance of the TMP- refer to in Section 8
- Liaising with the government, community and other key stakeholders identified by Tellus
- Implementing environmental induction procedures and appropriate training for Tellus staff and contractors, and
- Supporting waste characterisation and waste inventory management functions
- Ensuring proposed packaging type and format is fit for purpose
- Ensuring waste generator implementation of the Delivery Plan.
- Supporting waste inventory management functions
- Ensuring the waste transport schedule is implemented as part of the Delivery Plan.

- Ensuring safe traffic management functions of all inbound and outbound vehicles
- Assessing the waste consignment documentation upon arrival at the facility gate
- Assessing all inbound vehicles and loads upon arrival at the facility gate
- Assessing all outbound vehicles and loads prior to departure from facility
- Undertaking waste receipt tasks in accordance with the Transport Schedule.
- Supporting waste characterisation and waste treatment functions
- Undertaking onsite verification testing in accordance with the Waste Acceptance Criteria.

It is the responsibility of all Facility staff and contractors to comply with the regulations, requirements and procedures defined in the TMP, and to carry out their work in a way that minimises potential adverse social and environmental impacts.

5 General Transport Incident Response Measures

Tellus will support the Government Emergency Response Team and may act as first responders in waste transport situations that occur near the Facility.

As with any incident or accident, first responders should:

- Ensure that they do not place themselves in danger
- Take any necessary steps to preserve life, unless doing so would place themselves or others in danger
- Take any necessary steps to control immediate hazards including fire, using available response equipment if it is safe to do so
- Restrict access to the immediate vicinity to minimise the potential for escalation
- Call for appropriate assistance (including emergency services)
- Render care to any person injured or otherwise affected by the incident/accident, unless doing so would place themselves or others in danger
- Where possible, protect property unless doing so would place themselves or others in danger
- Where possible, protect the environment unless doing so would place themselves or others in danger.

5.1 Incident and Accident Scenarios

For incidents and accident scenarios, please refer to the Emergency Response Plan.

Included below are measures that are specific to incidents or accidents involving hazardous material. These measures may be incorporated into first response advice to accompany conveyances.

5.1.1 UNDELIVERABLE CONSIGNMENT

Retain custody of the package - Package must not be delivered or left unattended if the consignee (or a representative) is not present to take delivery of it.

If a consignment is undeliverable (after making reasonable efforts to contact the consignee), it must be kept in a safe location and the competent authority must be contacted to request further instructions.

5.1.2 DAMAGE TO A PACKAGE CONTAINING HAZARDOUS MATERIAL (NO OTHER EMERGENCY ASPECTS)

- Restrict access to the area to prevent spread of any contamination
- Consult transport documentation to determine nature of package contents
- Inform the consignee emergency contact, who will:
    - Seek specialist advice as appropriate (e.g. Emergency Services Officer (ESO) and/or Radiation Safety Officer (RSO))

- Inform the competent authority if and as required under legislation
- Arrange for monitoring of the package, vehicle and surrounding area
- Arrange for decontamination of the package, vehicle and surrounding area if necessary
- Arrange for repair to packaging or repackaging, so that transport may be completed
- Ensure that the incident is investigated, identifying cause, remedial actions and preventative measures to prevent recurrence

- Do not handle the damaged package, unless directly instructed to do so by a competent authority
- If there is visible loss of containment, and if possible, minimise the spread of any spillage by using spill control equipment taking care not to contact the material or spread contamination further
- Inform transport services provider, so that they can accommodate the delay
- If any person has touched the damaged package, they should not eat, drink, smoke, or touch their face until they have been decontaminated and/or checked for possible contamination.

5.2 General Traffic Scenarios

Other traffic scenarios include:

- If there are delayed deliveries or revised schedules with potential staging of waste materials to the Facility:
  - Tellus will communicate with the Waste Generator to confirm revised arrangements and delivery schedules.
- If there are adverse weather conditions which lead to closure of the Access Road:
  - Tellus will communicate with the Waste Generator and Approved Transport Service Provided to confirm revised arrangements, indicate likely recovery periods and delivery schedules.
- If a road incident occurs restricting access to Mt Walton Road:
  - Tellus will communicate with the Waste Generator and Approved Transport Service Provided to confirm revised arrangements, indicate likely recovery periods and delivery schedules.

5.3 HAZMAT

The designated Hazard Management Agency for any incident involving a spill of material on public roads/rail is the relevant department responsible for emergency assistance in the state or territory, such as the Department of Fire and Emergency Services (DFES) in WA.

At a state level, the HAZMAT Emergency Advisory Team (HEAT) coordinates government and private stakeholder agencies to ensure participatory development of procedures and uniform response to HAZMAT incidents. HEAT provides operational support to DFES throughout the initial response until the site is

declared safe and responsibility is returned to DFES and relevant government agencies to ensure complete restoration of the site and removal of any hazardous materials for safe disposal.

Table 5-1: Incident response organisations by location of incident

Location of incident	First Responder to an incident	Responsibility for oversight of emergency response	Management of the emergency
Sandy Ridge Facility	Tellus ERT	Tellus ERT	Tellus Sandy Ridge Incident or Emergency Management personnel
Road from intersection at Great Eastern Highway to front gate of Sandy Ridge Facility	Tellus ERT	Tellus ERT until DFES on arrival	Tellus Sandy Ridge Incident or Emergency Management personnel,
Other parts of Western Australia where incident involves transport of waste materials to Sandy Ridge Facility	Local Emergency Services	DFES	Emergency Response Provider or WA State Government Regulator - Radiation Health (for radioactive waste)
Other States where incident involves transport of waste materials to Sandy Ridge Facility	Local Emergency Services	Local Emergency Services	Emergency Response Provider or Relevant State Government Regulator (for radioactive waste)

5.4 Emergency Contacts

In the case of an emergency or incident involving waste material during transport, the primary contact person should be notified immediately. Further details are provided in the Emergency Response Plan.

Depending on the nature of the incident or accident, notification to or engagement of other personnel or agencies may be required. These may include emergency services, regulatory bodies or HAZMAT.

Contact details for competent authorities in all states and territories of Australia are appended to RPS C-2. (Schedule B Table 1 & Table 2) and is also summarised in the Emergency Contacts register.

If an emergency is life threatening, call 000

5.4.1 SANDY RIDGE EMERGENCY RESPONSE TEAM

The Sandy Ridge emergency response team are well equipped with a fire truck and ambulance; access to the local airport, and will act as first responders to any incidents within close proximity to the facility e.g. On the Mt Walton Access Road. The team will isolate, contain, and neutralise the incident. Once contained, and if required, they will contact HAZMAT team to attend the spill site.

6 Training

Tellus provides the necessary tools and training for its employees and contractors to enable the effective implementation of Tellus' management systems and, to assist with the risk management process for the Facility. Training for TSPs is an important component of the pre-qualification process conducted by Tellus. Tellus will implement appropriate training outlining the requirements of the TMP as part of the general induction process. Specifically, for transport-related incident management, the following qualifications are held by Facility Emergency Services Officers:

- PUAFIR320 Render hazardous materials incidents safe
- PUAFIR308B Employ personal protection at a hazardous materials incident
- PUAFIR316 Identify, detect and monitor hazardous materials at an incident
- Confined Space Rescue suite of training modules
- Road Crash Rescue suite of training modules
- Render Hazardous Materials Incident Safe.

Facility operators undergo internal training related to loading and unloading cargo, machinery use, and safe management of hazardous materials during inductions and regular site training. Records are kept of all personnel undertaking the site induction and training, including the contents of the training, date and name of the trainer(s).

7 Risk Management

7.1 Risk Assessment and Register

Tellus has assessed relevant risks associated with the Transport Management Plan and subsidiary plans including specific mitigation actions to address key risks. A register of key risks and mitigations is included at Appendix 1.

7.2 Emergency Response

As part of the transporter pre-qualification process (Section 3.1.5), Tellus will require transporters to identify their Emergency Responders whose identity and scope can be verified from the DMIRS list of Approved Emergency Responders[1]. This ensures consistency with Western Australia's *Dangerous Goods Safety (Road and Rail Transport of Non-explosives) Regulations 2007* and Chain of Responsibility obligations.

Tellus' capacity to respond to external emergency response incidents is detailed in Tellus' Sandy Ridge Emergency Response Plan and this document.

7.3 Verification and Auditing

In addition to the transporter checks conducted at the Facility gate (see Section 3.1.7 and Section 3.1.8), Tellus reserves the right to conduct compliance and audit checks of pre-qualified transport contractors at regular intervals (or at random or as required).

These audits are intended to ensure compliance with transport legislation, Chain of Responsibility and safety and quality performance standards is maintained.

All risk assessments, transporter provided data, audit records, vehicle inspections, vehicle arrival and departure times will be recorded by Tellus.

Breaches of Chain of Responsibility laws and other transport or waste Legislation will be reported to the relevant Regulatory Authority, as well as triggering an internal Non-Conformance Report.

Tellus will keep records of any complaints and any disciplinary action that may be taken. This information will be maintained for internal use.

[1] Available at: Approved Emergency Responders List PUBLIC (dmp.wa.gov.au)

8 Document review

The TMP will be reviewed and monitored on a regular basis to test the effectiveness of the outcomes. The TMP should be reviewed at a minimum of every 12 months and provide improvements where possible. The measures indicated in the objectives above (section 1.3) will be utilised regularly to monitor compliance of issues within the plan. Audits of progress and outcomes of the plan and will be used as a basis review and improvements on the plan.

If monitoring or audits for these measures highlights more immediate actions to ensure conformance with the plan, or immediate change these will be addressed without delay.

9 Appendices

Appendix 1 - Risk Assessment

SANDY RIDGE PROJECT MANAGEMENT PLAN RISK REGISTER

Risk ID	Main Risk	Description		Risk Category	Sub-Risk ID	Sub Risks		Root Cause	Cause occurs in...	Potential Consequence Description				Consequences			Inherent Risk	Preventive Controls (to reduce likelihood)		Control	Corrective Controls (to reduce consequence once event has occurred)	Control		Responsible Person	Due By	Residual Risk				Risk Tolerance	Risk Owner	
									People / OH&	Environment / Regulatory		Production / Schedule		Likelihood	Consequence	Risk Level		Effectiveness	Status		Effectiveness	Status			Status Open/ Closed	Likelihood	Consequence	Predicted Risk Level			
OP	Great Eastern Highway Mount Walton Road Intersection	Entering/ Exiting Mount Walton Road onto Great Eastern Highway	Hazards/Events	OP.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic					Likely	Catastrophic	Critical	Intersection upgraded to MRWA specs to incorporate widening to allow for clear line of sight and adequate turning for large vehicles	Strong	Implemented	Emergency contact signage at start of Mt Walton Road with Sandy Ridge and DFES contacts	Satisfactory	Action			open	Rare	Catastrophic	High		Tellus Operations	
OP1			HSE Risks	OP1.1	Hydrocarbon/Hazardous waste spill	Ruptured fuel, oil or hazardous waste receptacle		Environmental impact to surrounding fauna and flora		Minor				Possible	Minor	Medium	Intersection upgraded to MRWA specs to incorporate widening to allow for clear line of sight and adequate turning for large vehicles	Satisfactory	Implemented	Emergency contact signage at start of Mt Walton Road with Sandy Ridge and DFES contacts	Satisfactory	Action			open	Rare	Minor	Low		Tellus Operations	
OP3	Driving along Mount Walton Road	Vehicular traffic traveling to and from Sandy Ridge Facility	Hazards/Events	OP3.2	Dust	Travelling at Speed Lack of dust suppression High winds Road surface breaking up		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or serious injury	Catastrophic					Possible	Catastrophic	High	Speed signs installed along access road drive to conditions regular dust suppression carried out to minimise dust regular road maintenance carried out to maintain hard road surface	Satisfactory	In development	UHF Callup on entering Mt Walton Road to advise of arrival time to Sandy Ridge Facility, not to proceed until positive communications are return to advise message received additional UHF channel signs installed along Mt Walton Road with emergency location markers	Satisfactory	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP			HSE Risks	OP.1	Vehicle collision or near miss	Vehicles pulling out of side tracks with out looking for oncoming traffic, Poor vision		Potential for Vehicle verses vehicle impact causing fatality or serious life changing Injury and	Catastrophic					Possible	Catastrophic	High	Clearing along verge in road reserve to increase vision for vehicles accessing or crossing road from side access tracks warning signage along access road to advise traffic of side track ahead	Strong	In development	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium			

								damage																							
OP3				OP3.3	Fauna	Local Wildlife accessing across Mount Walton road		Vehicle vs Fauna causing damage and potential injury		Minor			Possible	Minor	Medium	Speed signage installed along access roads. Clearing of verge along road reserve to increase vision	Satisfactory	In development	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP3				OP3.4	Poor vision	Sun glare Dirty windscreen Heavy Rain Dust Poor light		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or serious injury and damage	Catastrophic				Possible	Catastrophic	High	Access road upgrade works carried out with new delineators and signage installed along the length of the road, clearing along edge of road reserve undertaken to increase safe zone Ensure windscreens are clean and clear Drive to conditions Engage 4 wheel drive in wet conditions ensure lights are in working order	Satisfactory	In development	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat, inability to escape threat		Extreme radiant heat, Poor visibility, Smoke, injury or death	Catastrophic				Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal change regular monitoring of DFES regional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate				Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by competent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP	Access tracks	Access tracks entering from sides of Mount Walton Road	HSE Risks	OP.1	Vehicle collision or near miss	Vehicles pulling out of side tracks with out looking for oncoming traffic, Poor vision		Potential for Vehicle verses vehicle impact causing fatality or serious life changing injuryand damage	Catastrophic				Possible	Catastrophic	High	Clearing along verge in road reserve to increase vision for vehicles accessing or crossing road from side access tracks warning signage along access road to advise traffic of side track ahead	Strong	In development	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium			
OP10	Carina mine Process Plant access			OP10.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic				Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Improvement required	In development	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Catastrophic				Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by competent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP19				OP19.3	Fauna	Local Wildlife accessing across road reserve		Vehicle vs Fauna causing damage and potential injury		Moderate			Possible	Moderate	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	

OP19				OP19.3	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill	Minor					Possible	Minor	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES 'Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP11	Carina Camp/Airport access			OP11.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	Action	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP				OP.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill	Minor					Possible	Minor	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES 'Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low			
OP	Mt Walton Rd/IWDF access Rd/Mt Dimer Rd Intersection			OP.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	Action	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES	Strong	Action			open	Unlikely	Major	Medium			
OP12				OP12.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES 'Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP13				OP13.1	Fauna	Local Wildlife accessing across road reserve		Vehicle vs Fauna causing damage and potential injury	Minor					Possible	Minor	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low			
OP20				OP20.2	Bushfire threat	Exposure to Heat, inability to escape threat		Extreme radiant heat, Poor visibility , Smoke, injury or	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal change regular monitoring of DFES regional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	

								death																								
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by competent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP15	Mt Dimer Rd/Sandy Ridge Facility Access Rd Intersection			OP15.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP16				OP16.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES 'Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat, inability to escape threat		Extreme radiant heat, Poor visibility , Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal change regular monitoring of DFES regional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP17				OP17.1	Fauna	Local Wildlife accessing across road reserve		Vehicle vs Fauna causing damage and potential injury	Minor					Possible	Minor	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP17	Mt Dimer Rd/Bore Field Access Rd Intersection			OP17.2	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions		Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP17				OP17.3	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare		Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide first assistance close road to other users to maintain safety Sandy Ridge ERT to attend and notify DFES 'Spill kits located along Mt Walton Road to allow quick response	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP20				OP20.2	Bushfire threat			Extreme radiant heat,	Catastrophic						Catastrophic	High	Road Closure , Fire threat warning Signs	Satisfactory	Action	Onsite Medical facility and ESO	Strong				open					Tellus Operations	

						Exposure to Heat, inability to escape threat		Poor visibility , Smoke, injury or death						Possible			updated with seasonal change regular monitoring of DFES regional warning site			Road maintenance crew to provide first assistance to isolate area and make safe from other road users		Action				Possible	Moderate	Medium			
OP3				OP3.5	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible		#N/A	Access road upgrade works carried out with new delineators and signage installed along the length of the road,	Satisfactory	In development	Road inspections carried out by competent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Rare	Major	Medium		Tellus Operations	
OP19	Mt Dimer Rd to Mt Dimer Aerodrome	Driving from Sandy ridge facility to Mt Dimer Aerodrome		OP19.1	Dust	Travelling at Speed Lack of dust suppression High winds Road surface breaking up		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or serious injury	Catastrophic					Possible	Catastrophic	High	Speed signs installed along access road drive to conditions regular dust suppression carried out to minimise dust regular road maintenance carried out to maintain hard road surface	Satisfactory	In development	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP19				OP19.2	Fauna	Local Wildlife accessing across Road reserve		Vehicle vs Fauna causing damage and potential injury	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Mt Walton Rd to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	
OP19				OP19.3	Poor vision	Sunglare Dirty windscreen Heavy Rain Dust Poor light		Potential for vehicle vs vehicle/tree or single vehicle incident causing fatality or serious injury and damage	Catastrophic	Minor				Possible	Catastrophic	High	Access road upgrade works carried out with new delineators and signage installed along the length of the road, Ensure windscreens are clean and clear Drive to conditions Engage 4 wheel drive in wet conditions ensure lights are in working order	Strong	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users DFES access and RFDS accessible Mineral Resources ERT engaged if required for assistance	Strong	Action			open	Unlikely	Moderate	Medium		Tellus Operations	
OP19				OP19.4	Wet conditions	Rain event causing road to become slippery		Vehicles leaving road way due to slippery conditions Injury and damage environmental impact	Moderate					Possible	Moderate	Medium	Road inspection to be carried out by competent person to assess condition of road drive to conditions competent drivers only grade slippery material off as required to allow for a competent surface	Satisfactory	In development	Road inspections carried out by competent person to assess the condition of road grade off slippery area as required back to competent surface to allow safe access	Satisfactory	Action			open	Unlikely	Moderate	Medium		Tellus Operations	
OP19				OP19.5	Inexperience driving on unsealed roads	Never driven on unsealed roads		Driving to slow causing a hazard to other road users not driving	Moderate					Possible	Moderate	Medium	VOC'd drivers to only drive from Sandy Ridge Facility to Aerodrome and return 4x4 trained maintain safe distance between	Satisfactory	Action	Re-training of personnel	Improvement required	Action			open	Rare	Moderate	Low		Tellus Operations	

							with 4 wheel drive engaged when required									vehicles drive to conditions															
OP20				OP20.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions	Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Upgrade signage to new, pre warning signs along Road to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through at intersecting roads	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat, inability to escape threat	Extreme radiant heat, Poor visibility, Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal change regular monitoring of DFES regional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP15	Camp/Sandy Ridge Facility Access Rd			OP15.1	Vehicle collision or near miss	Poor signage Poor vision to assess oncoming traffic Poor road conditions	Potential for Vehicle verses vehicle impact causing fatality or serious life changing injury and damage	Catastrophic					Possible	Catastrophic	High	Signage to be installed to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Unlikely	Major	Medium		Tellus Operations	
OP16				OP16.1	environmental impacts	dangerous goods vehicle not stopping due to poor vision unable to cross rail crossing prior to train due to poor line of sight and sun glare	Dangerous goods vehicle vs vehicle causing hydrocarbon and hazardous waste spill		Moderate				Possible	Moderate	Medium	Signage to be installed to advise approaching an intersection, reduce speed indicators on approach to allow adequate stopping distance or safe passage through	Satisfactory	In development	Road Maintenance crew to provide first assistance if closest, close road to other users to maintain safety Sandy Ridge ERT to attend	Strong	Action			open	Unlikely	Minor	Low		Tellus Operations	
OP20				OP20.2	Bushfire threat	Exposure to Heat, inability to escape threat	Extreme radiant heat, Poor visibility, Smoke, injury or death	Catastrophic					Possible	Catastrophic	High	Road Closure , Fire threat warning Signs updated with seasonal change regular monitoring of DFES regional warning site	Satisfactory	Action	Onsite Medical facility and ESO Road maintenance crew to provide first assistance to isolate area and make safe from other road users	Strong	Action			open	Possible	Moderate	Medium		Tellus Operations	
OP17				OP17.1	Fauna	Local Wildlife accessing across road reserve	Vehicle vs Fauna causing damage and potential injury	Minor					Possible	Minor	Medium	Speed signage installed along access roads Clearing of verge along road reserve to increase vision	Satisfactory	Action	Remove Fauna from road way to remove hazard from other road users Report to Sandy Ridge ESO	Strong	Action			open	Unlikely	Insignificant	Low		Tellus Operations	

Appendix 2 - Journey Management Plan Example

Day / Date of Journey:		**Company:**	
Reason for Journey:		**Vehicle Type / Rego:**	
Driver's Name:		**Driver's Mobile:**	
1 Passenger Name:		**1 Passenger Mobile:**	
2 Passenger Name:		**2 Passenger Mobile:**	
3 Passenger Name:		**3 Passenger Mobile:**	
Supervisor Name:		**Supervisor Mobile:**	
You MUST check in with the Tellus Site Mobile on xxx at the check-in points listed below			

Check-in Points / Register			
Incoming to Site – call the Tellus Site mobile at these 3 locations in red below		**Estimated Time**	**Actual Time**
1. Departure Location:	☐ Kalgoorlie OR ☐ Southern Cross		
2. Corner Great Eastern Hwy / Mount Walton Road			
3. Arrival Location:	Sandy Ridge Admin Office		
Outgoing from Site – call the Tellus Site mobile at these 3 locations in red below		**Estimated Time**	**Actual Time**
1. Departure Location:	Sandy Ridge Admin Office		
2. Corner Great Eastern Hwy / Mount Walton Road			
3. Destination Location:	☐ Kalgoorlie OR ☐ Southern Cross		

Declaration of Driver

- **I agree to check in with the Site Contact nominated below at the designated points and times as per the check in register below**
- **I will amend the UHF radio according to signage along Mount Walton Road**
- I understand that as the driver of the listed vehicle, I am responsible for the safety of the vehicle and the passengers 'whilst on the road'
- I declare I hold a current Driver's Licence for the class of vehicle undertaking the journey and agree to abide by all state road traffic laws, including driving within the designated speed limits (or to conditions) and all vehicle occupants wearing of seatbelts
- I agree as the driver not to drive under the influence of any alcohol and/or illegal drugs
- I understand that the arrival time approximates the intended arrival. I understand that if I do not arrive by that time or I have not called to inform of a later anticipated arrival time, then emergency procedures may be actioned
- I declare I have enough drinking water in the vehicle for the number of passengers
- **I agree to report incidents/near-misses immediately to my supervisor and the Tellus site contact nominated below. Examples include personnel injury, vehicle collision, spills/leaks, impact to flora or fauna. Note, delivery drivers only need to report to Tellus between Mt Walton Road/Great Eastern Highway intersection and Sandy Ridge**.

Declaration of ALL LOADED Waste Delivery Drivers

1 **For waste deliveries not in sea containers, I agree to inspect the load at the Mt Walton Rd intersection AND at the railway crossing**

2 **I agree to stop at the CALL UP BAY SIGNPOSTED BEFORE the Rail Crossing on Mount Walton Road and follow the Road Rail Crossing Call Up Bay Procedure below**

*****ALL LOADED WASTE TRUCKS MUST ABIDE BY THE BELOW - DO NOT CROSS RAIL WITHOUT AUTHORISATION*****

Prior to crossing the Mount Walton Road Rail Crossing ALL loaded waste trucks MUST;

- **STOP at the signposted call up bay before the Crossing**
- Call up Network Control on **08 9274 9790** to confirm Train movements
- State crossing ID - **LINE 1 at 536.87km**
- **Wait for Authorisation** to cross the rail

If no response from Network Control, notify Tellus at the Sandy Ridge Facility by either the mobile or UHF channel below and wait for a Tellus representative to arrive to be escorted across the railway crossing

- ADMIN UHF **CH 41**
- ADMIN **xxx**

IN CASE OF EMERGENCY IN RAIL CORRIDOR CALL 1300 987 246