

Traffic Management Plan

Muswellbrook Solar Farm

Prepared for ESCO Solar Farm 9 Pty Ltd

March 2026

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ESCO Solar Farm 9 Pty Ltd

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Key terms

Term	Definition
AEMM	Approved Environmental Management Measure
AG DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water
Ancillary infrastructure	All Project infrastructure with the exception of solar panels, including but not limited to collector substations, switching stations, permanent offices, battery storage and site compounds, electricity transmission lines and internal roads
Applicant	See: Proponent
BESS	Battery energy storage system
CoA	Condition of Approval
Commissioning	The testing of the components, equipment and systems of the development following completion of construction, prior to operations commencing
Construction	The construction of the development, including but not limited to, the carrying out of any earthworks on site and the construction of solar panels and any ancillary infrastructure (but excludes road upgrades or maintenance works to the public road network, building/road dilapidation surveys, installation of fencing, artefact survey and/or salvage, overhead line safety marking and geotechnical drilling and/or surveying)
Decommissioning	The removal of battery storage infrastructure and ancillary infrastructure and/or rehabilitation of the site
Development Consent	Approval granted under the <i>Environmental Planning and Assessment Act 1979</i> that authorises the carrying out of the Project, subject to specified conditions for SSD-46543209
DP	deposited plan
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	The Environmental Impact Statement (including its appendices) for Muswellbrook Solar Farm dated July 2023, the Submissions Report dated February 2024 and the additional information provided to the Department by the Applicant dated 12 June 2024, 25 June 2024, 19 July 2024, 22 July 2024, 9 August 2024, 26 August 2024, 10 September 2024, 10 October 2024, 21 October 2024, 13 November 2024, 11 December 2024, 13 December 2024, the 'Additional and Appropriate Measures' letter dated 25 June 2024 and Preliminary Site Investigation, dated 7 May 2025
EMM	EMM Consulting Pty Ltd
EMS	Environmental Management Strategy
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environmental Protection Authority
EPC	Engineering, Procurement and Construction: A contract where one party delivers the Project design, equipment, and construction as a complete package
FERP	Flood Emergency Response Plan
ha	Hectare
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm to the environment, and as a consequence of that environmental harm, may cause harm to the health and safety of human beings, and which may or may not be or cause a non-compliance
IPC	Independent Planning Commission
km	Kilometre

Term	Definition
kV	Kilovolt
LGA	Local Government Area
Material harm	Is harm that: - involves actual harm to the environment that may include (but not be limited to) a leak, spill, emission other escape or deposit of a substance, and as a consequence of that environmental harm (pollution), may cause harm to the health or safety of people, or - results in actual loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
MSC	Muswellbrook Shire Council
MW	Megawatt
MWac	Megawatt alternating current
MWh	Megawatt hours
NSW	New South Wales
Non-compliance	An occurrence, set of circumstances or development that is a breach of the Development Consent and/or EIS but is not an incident
O&M	Operations and Maintenance
Operation	The operation of the development, but does not include commissioning, trials of equipment or the use of temporary facilities
PCU	Power Conversion Unit
Planning Secretary	Secretary of NSW Department of Planning, Housing and Infrastructure
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Project (the Project)	Muswellbrook Solar Farm Project; a large scale solar photovoltaic generation facility along with battery storage and associated infrastructure
Project Footprint	The physical area of ground disturbance required for construction, operation and decommissioning of the Project, including all permanent and temporary disturbance areas located within the Project site.
Project site	The area within the approved development boundary for construction and operation of the Project as defined within Appendix 1 and Appendix 2 of the Development Consent.
Proponent	ESCO SOLAR FARM 9 PTY LTD AS TRUSTEE FOR THE ESCO SOLAR FARM 9 TRUST
PV	Photovoltaic
REZ	Renewable Energy Zone
RFI	Request For Information
SSD	State Significant Development
Temporary facilities	Temporary facilities used for the construction, upgrading and/or decommissioning of the development, including but not limited to temporary site offices and compounds, materials storage compounds, maintenance workshops, material stockpiles, laydown areas and parking spaces
TfNSW	Transport for NSW
TMP	Traffic Management Plan

1 Introduction

1.1 Context

This Traffic Management Plan (TMP or Plan) forms part of the Environmental Management Strategy (EMS) for the Muswellbrook Solar Farm (MSF, or the Project).

The EMS, as required by Condition of Approval (CoA) C1, provides the overarching framework for the environmental management of the Project, establishing environmental management governance arrangements, roles and responsibilities, statutory approval pathways for secondary approvals, communication and incident response procedures, and compliance mechanisms required under the Conditions of Approval.

This TMP has been prepared to address the requirements of the CoA, the measures listed in the MSF Environmental Impact Statement (EIS) and the Submissions Report (known as the Approved Environmental Management Measures (AEMMs)), and all applicable guidelines and legislation. The Plan implements the EMS at an aspect-specific level by translating the overarching requirements of the EMS into detailed, topic-specific management measures, monitoring, and controls applicable to the management of traffic and transport.

1.2 Project background

Muswellbrook Solar Farm is a large-scale solar photovoltaic (PV) generation facility in the Hunter Region of NSW, as shown in Figure 1.1. The Project site is on Wonnarua Country and within the localities of Muswellbrook and Muscle Creek in the Muswellbrook Shire Council (MSC) Local Government Area (LGA). The nearest population centre to the Project is the township of Muswellbrook, approximately 2.5 kilometres (km) west of the Project. The Proponent is ESCO Solar Farm 9 Pty Ltd (ACN 660 380 110) as trustee for the ESCO Solar Farm 9 Trust (ABN 88 366 226 320) (a wholly owned subsidiary of OX2 Holdings Pty Ltd). From here on the proponent is referred to as OX2.

The Project area is located in the Hunter-Central Coast Renewable Energy Zone (REZ) and has been selected to optimise the future land use of the Muswellbrook Coal Mine buffer lands for the generation of renewable energy. The Project is located adjacent to existing transmission infrastructure, as it is traversed by existing 132 kilovolt (kV) and 330 kV transmission lines. It is an ideal site for increasing generation capacity to the NSW electricity grid with minimal requirements for additional transmission infrastructure.

The Project is a State significant development (SSD) pursuant to section 4.36 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and section 2.6(1) of State Environmental Planning Policy (Planning Systems) 2021. The Project was referred to the Independent Planning Commission (IPC) in December 2024, and Development Consent was granted by the IPC on the 27 May 2025 (SSD 46543209).

Muswellbrook Solar Farm was referred to the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) in July 2022 under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (number 2022/09303). Following assessment under the Bilateral Agreement the Project was determined to be a controlled action, with approval granted on the 12 August 2025 by the Minister for the Environment and Water.

1.3 Approved Project

The Muswellbrook Solar Farm consists of the following key components:

- A network of solar PV panels and associated mounting infrastructure with a generating capacity of up to 135 megawatts alternating current (MWac).
- A battery energy storage system (BESS) with a capacity of up to 135 MWac and a storage duration of up to 2 hours.

- Electrical collection systems (BESS collection station and solar farm collection station), transformer substation, and switchyard.
- An operations and maintenance facility, including demountable offices, amenities, equipment sheds, storage and parking areas.
- Internal access roads.
- Site access from approved point off Muscle Creek Road.
- A temporary construction compound/laydowns (during construction and decommissioning only).
- Electricity transmission line infrastructure connecting to the grid and connecting the north and south areas of the solar farm.

The layout of the Project is shown in Figure 1.2.

In accordance with CoA A2, the Project will be carried out in compliance with the conditions of this consent, in accordance with all written directions of the Planning Secretary, generally in accordance with the EIS, and generally in accordance with the Development Layout in Appendix 1 of the Development Consent.

1.4 Project staging

Project activities and associated management plans, reports and other documents will be delivered in stages in accordance with Condition C3, as approved by the Planning Secretary in a letter dated 27 November 2025.

The Project staging is as follows:

- Stage 1A (approximately 18 months): Construction and commissioning of the southern solar farm, including switchyard and substation, excluding high risk vehicle movements requiring escort.
- Stage 1B (approximately 12 months): Construction and commissioning of the southern solar farm, including switchyard and substation, including high risk vehicle movements requiring escort.
- Stage 2 (approximately 20 months): Construction and commissioning of the BESS.
- Stage 3 (approximately 35 years): Operation and maintenance on the southern solar farm and BESS.
- Stage 4A (approximately 1 month): Road upgrades and site access upgrades at the Sandy Creek Road intersection, to enable construction of the northern solar farm.
- Stage 4B (approximately 12 months): Construction and commissioning of the northern solar farm, including high-voltage connection to the south.
- Stage 5 (approximately 35 years): Operation and maintenance of the northern solar farm.
- Stage 6 (approximately 12 months): Decommissioning.

Some stages may occur concurrently.

In alignment with the above staging, the development of this TMP will also occur in the following stages:

- Stage 1A for traffic management of the southern solar farm and BESS excluding high risk vehicle movements requiring escort intersection (this revision).
- Stage 1B for traffic management of the southern solar farm and BESS including high risk vehicle movements requiring escort (future revision).
- Stage 4A for road upgrades, site access upgrades and traffic management associated with the northern Solar farm (future revision).

The details of high-risk heavy vehicles requiring an escort are expected to become available after construction commences. These would be included within an Over Size Over Mass (OSOM) Transport Management Plan, included as an appendix to the Traffic Management Plan in Stage 1B.

Staging of the Project will result in the staging of a number of other obligations per the Development Consent and EIS. Other implications of Project staging include:

- the Independent dilapidation report will initially take into consideration Stage 1A, 1B, 2 and 3. An updated Independent dilapidation report associated with Sandy Creek Road will consider Stages 4A, 4B and 5 prior to the commencement of Stage 4A
- road upgrade works required under Condition B5 and Appendix 4 (i.e. upgrades to the Sandy Creek Road and Northern Site Access intersection) would be undertaken prior to the commencement of works on Stage 4B.

This TMP will cover Stage 1A only. The TMP will be updated and further consultation with Transport for NSW (TfNSW) and MSC will occur, in accordance with Condition B9, prior to subsequent staged updates. As Stages 4A, 4B and 5 are not addressed within this revision of the TMP, any matters related to traffic management on Sandy Creek Road, including the intersection with New England Highway, are excluded from this revision of the TMP. For clarity, the Project would not utilise Sandy Creek Road in any capacity during the construction of Stage 1A (except in an emergency or as directed by an authority).

In reference to future updates of this Plan, particularly Stage 1B OSOM deliveries, we note that TfNSW has stated “the update and consultation of the TMP for any staging that includes high-risk OSOM must occur, preferably 4 to 6 months before commencing high-risk OSOM movements on the network from the Port to the site.” OX2 will accommodate this request to the extent possible.

It is noted that initially, the Voluntary Planning Agreement will be executed as agreed with Muswellbrook Shire Council for Stage 1A, 1B, 2 and 3 of the Project. The VPA will be updated if required and as agreed with Muswellbrook Shire Council for Stages 4 and 5 prior to the commencement of Stage 4A.

1.5 Consultation for this Plan

In accordance with Condition B9, this TMP has been prepared in consultation with the following agencies and councils:

- Transport for NSW
- Muswellbrook Shire Council.

In accordance with CoA A13 "Where conditions of this consent require consultation with an identified party, the Applicant must:

- a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval"
- b) provide details of the consultation undertaken including:
 - (i) the outcome of that consultation, matters resolved and unresolved
 - (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved."

OX2 will comply with CoA A13.

1.5.1 Transport for NSW (TfNSW)

In preparation of this TMP, an online meeting was held with TfNSW on 19 September 2025. TfNSW has stressed that the monitoring and enforcement mechanisms in relation to compliance of the approval conditions need to be clearly stated in the TMP.

TfNSW has reviewed the draft TMP and provided comments in a letter dated 2 December 2025. The TMP was updated in response to TfNSW comments. TfNSW provided an additional round of comments on 25 February 2026. The TMP has been updated to address these comments.

1.5.2 Muswellbrook Shire Council

In preparation of this TMP, an online meeting was held with MSC on 22 September 2025. In summary, MSC provided the following feedback for the draft TMP:

- **Road maintenance and dilapidation surveys:** MSC will provide their guidelines and methodology for the dilapidation surveys and its associated road maintenance strategies.
- **Site access on Sandy Creek Road:** A Section 138 application will be lodged along with detailed design of this proposed site access. The site access could be designed to accommodate 19 metre (m) long semi-trailers as this is the longest size of vehicle accessing the northern site access. The proponent stated that during construction of the Stage 1A (construction of the southern solar farm, including switchyard and substation, excluding high risk vehicle movements requiring escort), there will be no construction related vehicles via the Sandy Creek Road site access. Hence, MSC would be willing to consider deferring the construction of this site access with a commitment from the proponent that there would be no construction related vehicular activity (light and heavy) via this site access until Stage 4 (construction of the northern solar farm) of the Project commences.
- **Cumulative traffic impact and crash data analysis in local road:** MSC requested consideration of cumulative traffic impact and crash data analysis along the local roads as part of the TMP. The proponent advised that this has been considered in preparation of the Traffic Impact Assessment (TIA), however, this TMP would provide cross reference in relation to cumulative traffic and crash data analysis undertaken as part of the TIA.
- **Queuing on New England Highway/Sandy Creek Road intersection:** MSC emphasised the need to minimise traffic impacts at this intersection. The proponent advised that a rigorous traffic analysis has been undertaken as part of the TIA and consequently certain conditions are imposed to minimise traffic impact (queuing) at this intersection.

- **OSOM deliveries:** MSC noted the requirement to consult with all related stakeholders as part of the OSOM deliveries, e.g. UGL for the bridge over the railway line on Muscle Creek Road. The proponent stated that all relevant stakeholders, including UGL, will be consulted as part of the OSOM delivery application/s to the National Heavy Vehicle Regulator (NHVR).
- **Consideration of Independent Planning Commission (IPC) documents:** MSC noted consideration should be given to relevant IPC documents in preparation of the TMP. The relevant IPC documents have been reviewed in preparation of this TMP.

MSC reviewed the draft TMP and provided comments in a letter dated 11 December 2025. Additional meetings were held with MSC and OX2 on the 24 November 2025 and 14 January 2026 to discuss matters related to the TMP, including dilapidation survey and the Road Maintenance Plan. This TMP was updated in response to MSC comments. MSC have confirmed that they are satisfied with TMP in a letter dated 6 March 2026.

1.5.3 Consultation with local school bus operators

Osborn's and Howard's Bus & Charter Pty Limited operate school bus services in the area and both operators have been contacted by EMM. Osborn's has confirmed that they do not operate any school bus service via Muscle Creek Road. However, Howard's has advised that they operate school bus in the area, as below:

- S718 – Antiene:
 - 7:50 am – Turns right into Muscle Creek Road from New England Highway.
 - 7:58 am – Turnaround on Muscle Creek Road at Inglewood Road.
 - 8:03 am – Turn left into Woodland Ridge.
 - 8:06 am – Turnaround on Woodland Ridge at Kingfisher Court.
 - 8:11 am – Turn left onto Muscle Creek Road.
 - 8:12 am – Turn left back on to New England Highway from Muscle Creek Road.
- S718 – Antiene:
 - 3:52 pm – Turns right into Muscle Creek Road from New England Highway.
 - 3:59 pm – Turnaround on Muscle Creek Road at Inglewood Road.
 - 4:03 pm – Turn left into Woodland Ridge.
 - 4:06 pm – Turnaround on Woodland Ridge at Kingfisher Court.
 - 4:10 pm – Turn left onto Muscle Creek Road.
 - 4:11 pm – Turn left back on to New England Highway from Muscle Creek Road.
- S719 – Friday only:
 - 1:52 pm – Turns left into Muscle Creek Road from New England Highway.
 - 1:59 pm – Turnaround on Muscle Creek Road at Inglewood Road.

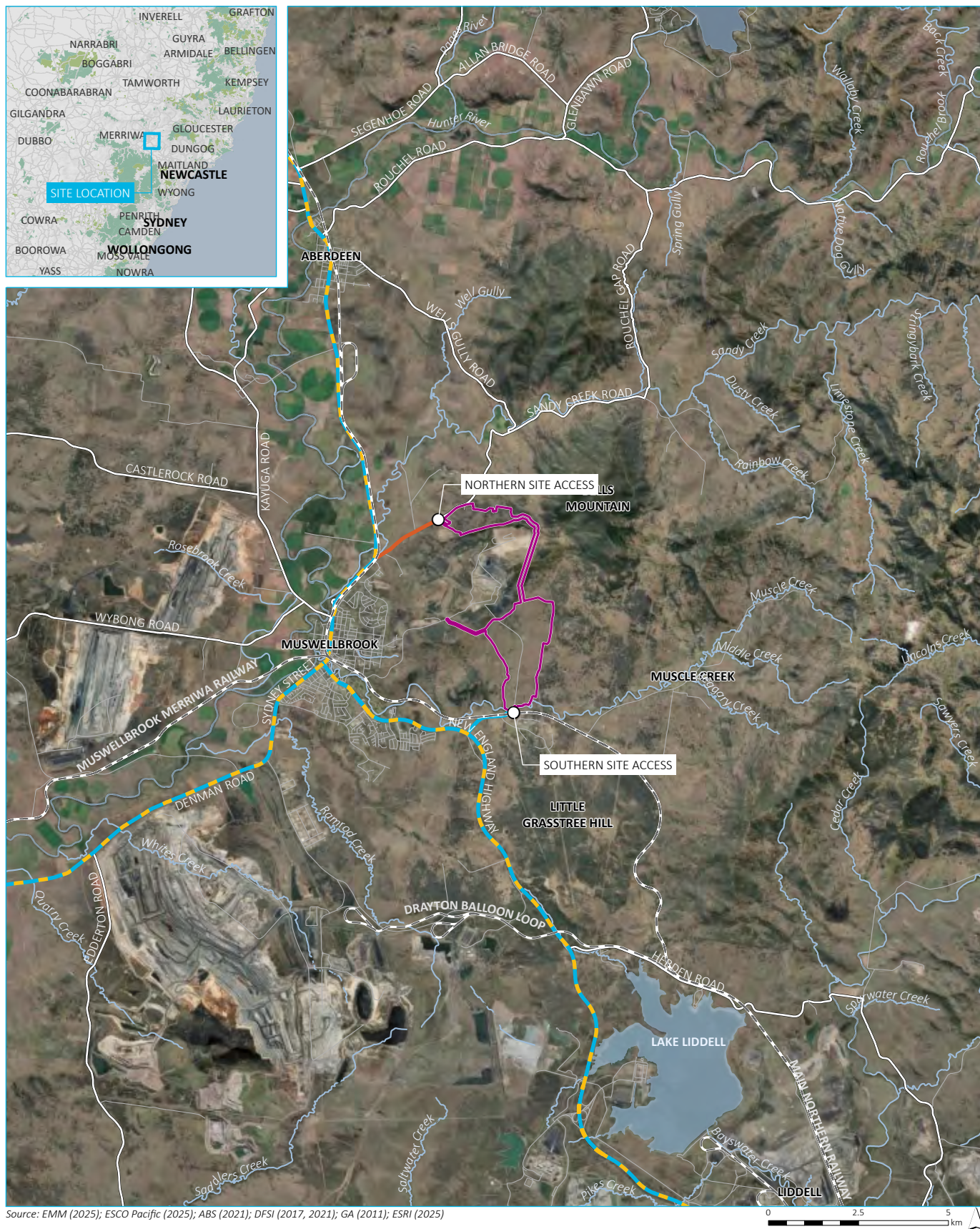
- 2:04 pm – Turn left into Woodland Ridge.
- 2:07 pm – Turnaround on Woodland Ridge at Kingfisher Court.
- 2:10 pm – Turn left onto Muscle Creek Road.
- 2:11 pm – Turn left back on to New England Highway from Muscle Creek Road.

To minimise any interaction with the school bus services and ensure public safety, the Project will restrict the movement of **heavy vehicles** (both inbound and outbound) along Muscle Creek Road during the following hours (NSW school terms only):

- 7:45 am to 8:15 am, Monday to Friday.
- 3:45 pm to 4:15 pm, Monday to Friday.
- 1:45 pm to 2:15 pm, Friday only.

This restriction does not apply to light vehicles. This matter has been discussed and agreed with MSC at the online meeting held on 14 January 2026.

Details on the management of construction traffic and interactions with school buses is included within Section 6.7.



KEY

- Project area
- Site access
- State road
- Approved heavy vehicle routes
- Approved 26 m B-double route
- Limited access 19 m B-double route

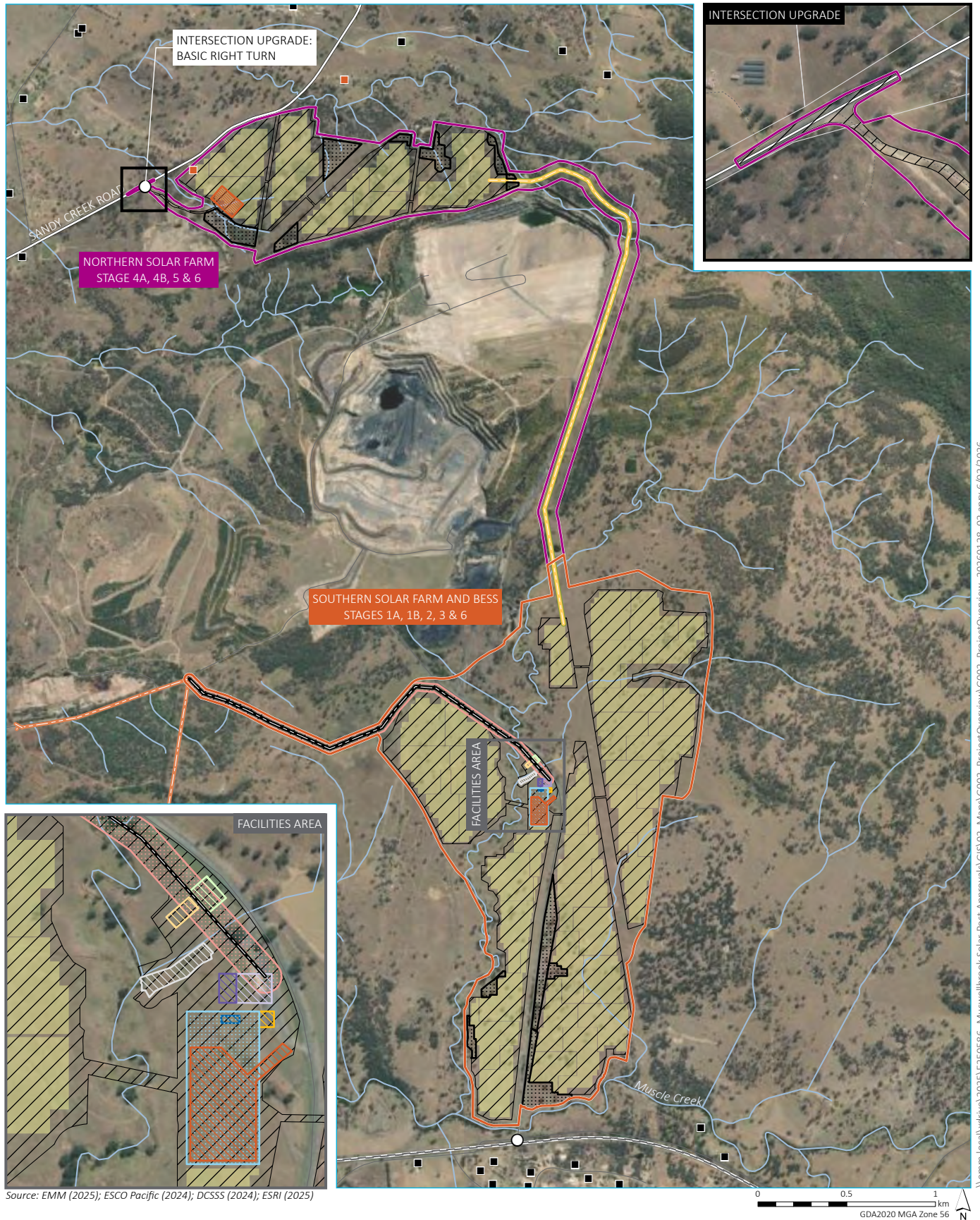
- Existing environment
- Rail line
- Major road
- Minor road
- Named watercourse
- Named waterbody

INSET KEY

- Major road
- NPWS reserve
- State forest

Project location

Muswellbrook Solar Farm
Traffic Management Plan
Figure 1.1



KEY

- | | | |
|---|---|---------------------------|
| Northern Solar Farm | Internal connection route (33 kV) | SF Collection Station |
| Southern Solar Farm and BESS | Existing transmission line (132 kV) | Switchyard |
| Site access | BESS (Battery Energy Storage System) | Transformer Substation |
| Associated dwellings | BESS Collection Station | Diversion channel |
| Dwellings not associated with the project within 5 km | Car Park | Existing environment |
| Development footprint | Connection internal north to south buffer | Rail line |
| Indicative panel layout | 132 kV connection to 95M buffer | Major road |
| Biodiversity exclusion area | Laydown | Minor road |
| Connection route | O&M | Watercourse/drainage line |
| 132 kV connection to 95M | | |

Project Overview

Muswellbrook Solar Farm
Figure 1.2

2 Purpose and objectives

2.1 Purpose

The purpose of this Plan is to describe how the Project will manage traffic movements within and outside the site to ensure road users and construction workers safety.

2.2 Objectives

The key objective of this TMP is to ensure all approval requirements relevant to traffic management are described, scheduled, and assigned responsibility as outlined in:

- MSF EIS (Chapter 6 and Appendix K)
- Submissions Report (Appendix E)
- Development Consent.

To achieve compliance with the conditions and objectives of the Project documents above, the Project will undertake the following:

- Ensure measures are implemented to address the relevant CoA outlined in Section 3.2 and Section 3.3 of this Plan.
- Ensure measures are implemented to address the relevant Approved Environmental Management Measures (AEMMs) in Section 3.4 of this Plan.
- Ensure best management practice controls and procedures are documented, communicated, and implemented to avoid or minimise traffic management impacts.

The TMP associated with the construction activity aims to ensure the safety of all workers and road users within the vicinity of the construction site and the following are the primary objectives:

- To minimise the impact of the construction vehicle traffic on the overall operation of the road network.
- To ensure continuous, safe and efficient movement of traffic for both general public and construction workers.
- Installation of appropriate advance warning signs to inform users of the changed traffic conditions.
- To provide a description of the construction vehicles and the volume of these construction vehicles accessing the construction site.
- To provide information regarding the changed access arrangement and a description of the proposed external routes for vehicles including the construction vehicles accessing the site.
- Establishment of a safe pedestrian environment in the vicinity of the site.

3 Statutory requirements

3.1 Relevant legislation and guidelines

Table 3.1 details the principal legislation, regulation, guidelines, specifications, and Australian Standards that are relevant to this TMP.

Table 3.1 Legislation and regulatory requirements

Legislation	<i>Environmental Planning and Assessment Act 1979</i> <i>Roads Act 1993</i> <i>Road Transport Act 2013</i> <i>Work Health and Safety Act 2011</i> <i>NSW Road Rules 2014</i>
Guidelines and specifications	Manual of Uniform Traffic Control Devices: AS1742 Austroads Guides to Traffic Management TfNSW Traffic Control at Worksites, Issue 6.1, October 2022

3.2 Relevant TMP conditions

The Development Consent includes several general Conditions that are relevant to the function of all management plans and Conditions that are relevant to just the specific management aspect. This section of the Plan describes where compliance with the Development Consent is addressed in this Plan.

In accordance with CoA A1 “In meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction, operation, commissioning upgrading, rehabilitation or decommissioning of the development.” Chapter 6 of this Plan includes management and mitigation measures, including when they are to be implemented, who will implement them, a reference to the source of the requirement (where relevant) and how the Project will collate evidence to prove compliance.

In accordance with CoA A2:

The development may only be carried out:

- a) in compliance with the conditions of this consent;
- b) in accordance with all written directions of the Planning Secretary;
- c) generally in accordance with the EIS; and
- d) generally in accordance with the Development Layout in Appendix 1.

In accordance with CoA A3:

The Applicant must comply with any requirement/s of the Planning Secretary arising from the Department’s assessment of:

- a) any strategies, plans or correspondence that are submitted in accordance with this consent;
- b) any reports, reviews or audits commissioned by the Department regarding compliance with this consent; and

- c) the implementation of any actions or measures contained in these documents.

In accordance with CoA A4:

The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c) or A2(d). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A2(c) or A2(d), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

This Plan has been prepared to support compliance with the requirements of Condition A2, A3 and A4 and to ensure the development is carried out in accordance with the consent, relevant directions of the Planning Secretary, the EIS, and the approved Development Layout. The Project is committed to complying with CoA A1, A2 and A3, any requirement of the Planning Secretary and acknowledge that the CoA and directions of the Planning Secretary prevail over any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c) or A2(d).

In accordance with CoA A12:

The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

OX2 will comply with CoA A12. Section 7.4 of this Plan describes how the Project will train employees, contractors (and their sub-contractors) in the requirements of the conditions of consent, including those relevant to the implementation of this Plan.

The specific CoA relevant to this Plan are listed in Table 3.2. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 3.2 Conditions of Approval relevant to the TMP

CoA No.	Commitment	Document reference
B9	The Applicant must prepare a Traffic Management Plan for the development in consultation with TfNSW and Muswellbrook Shire Council and to the satisfaction of the Planning Secretary. This plan must include:	Section 1.4
a)	details of the transport route to be used for development-related traffic	Section 6.5
b)	details of the road upgrade works required by condition B5 of this consent, including a schedule for the road upgrades and extent of the proposed work area	Road upgrades related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing
c)	a reconciliation table to demonstrate all traffic-related management measures and recommendations identified in the EIS have been included in the plan	Table 3.2 Table 3.3
d)	details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:	
	i) details of the dilapidation surveys required by condition B7 of this consent	Section 7
	ii) temporary traffic controls, including detours and signage	Sections 5.1, 6.5 and 6.14
	iii) notifying the local community about project-related traffic impacts	Section 6.18

CoA No.	Commitment	Document reference
	iv) procedures for receiving and addressing complaints from the community about development -related traffic	Sections 9.12, 9.13 and 9.14
	v) minimising potential for conflict with school buses and other road users as far as practicable, including preventing queuing on the public road network	Section 6.3 and 6.7
	vi) minimising potential cumulative traffic impacts with other projects in the area during construction, upgrading or decommissioning works	Section 6.19
	vii) minimising dirt tracked onto the public road network from development -related traffic	Section 9.8 and 9.9
	viii) measures for managing light vehicle peak numbers, including employee shuttle bus service, carpooling or ride sharing by employees	Section 6.4
	ix) details and volume of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to ensure employee use of this service	Section 6.15
	x) scheduling of heavy vehicle movements to minimise convoy length or platoons, and to minimise conflict with light vehicles	Section 6.3
	xi) responding to local climate conditions that may affect road safety such as fog, dust, wet weather	Section 6.9
	xii) responding to any emergency repair or maintenance requirements	Section 7.2 and 9.10.
	xiii) a traffic management system for managing heavy vehicles requiring escort	Section 6.14 – to be reviewed prior to Stage 1B
	xiv) a traffic management protocol for heavy vehicle movements turning right in and left out at the New England Highway and Sandy Creek Road intersection.	A traffic management protocol specific for heavy vehicle movements at the Sandy Creek Road intersection will be added to this Plan prior to Stage 4A construction commencing
e)	A driver's code of conduct that addresses:	
	i) driver fatigue	Section 9.6
	ii) procedures to ensure that drivers, including employees, contractors and sub-contractors using private vehicles adhere to the designated transport routes and speed limits	Section 9.2 and 9.3
	iii) procedures to ensure that drivers implement safe driving practices.	Section 9
(f)	A program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan.	Section 7.4
(g)	A flood response plan detailing procedures and options for safe access to and from the site in the event of flooding.	Appendix A
	Following the Planning Secretary's approval, the Applicant must implement the Traffic Management Plan.	This TMP will be implemented following approval from the Planning Secretary

3.3 Other road infrastructure related conditions

There are other traffic management and road infrastructure conditions for the solar farm construction. The relevant conditions and document reference is provided in Table 3.3.

Table 3.3 Other traffic and road infrastructure conditions

CoA No.	Commitment	Document reference
A9	Unless the Applicant and the applicable authority agree otherwise, the Applicant must:	
a)	repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and	Section 7.2.1
b)	relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.	Section 7.2.1
	Note: This condition does not apply to the upgrade and maintenance of the road network, which is expressly provided for in the conditions of this consent.	
B1	The Applicant must ensure that:	
a)	The development does not generate more than: i) 90 heavy vehicle movements a day (a maximum of 13 heavy vehicle movements per hour) during construction, upgrading or decommissioning. ii) 10 light vehicle movements, 2 shuttle bus movements and 2 heavy vehicle movements accessing Sandy Creek Road per hour during construction, upgrading or decommissioning. iii) 4 movements of heavy vehicles requiring escort during construction, upgrading and decommissioning.	Sections 6.3 and 6.14
b)	No construction traffic will access Sandy Creek Road between 7:30 am to 8:30 am and 3:45 pm to 4:45 pm during NSW school terms.	Construction Traffic access periods related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing
c)	Length of any vehicles (excluding heavy vehicles requiring escort) used for the development does not exceed: i) 26 metres for Muscle Creek Road ii) 19 metres for Sandy Creek Road unless the Planning Secretary agrees otherwise.	Section 6.2
B2	The Applicant must keep accurate records of the number of heavy vehicles requiring escort and heavy vehicles entering or leaving the site each day for the duration of the project."	Section 6.4
B3	Access Route Unless otherwise agreed by the Planning Secretary, all heavy vehicles and heavy vehicles requiring escort associated with the development must travel to and from the site via:	
a)	New England Highway and Muscle Creek Road.	Section 6.14

CoA No.	Commitment	Document reference
b)	New England Highway (to and from the south only) and Sandy Creek Road (excluding heavy vehicles requiring escort) as identified in Figure 3 of Appendix 4 for heavy vehicles, and Figure 4 of Appendix 4 for heavy vehicles requiring escort.	Heavy vehicle access requirements related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing
B4	Site Access All vehicles associated with the development must enter and exit the site via:	
a)	the site access point off Muscle Creek Road, or	Section 6.1
b)	the site access point off Sandy Creek Road (excluding heavy vehicles requiring escort) as identified in Figure 2 of Appendix 4. Note: Other site access points may be used for emergency purposes.	Site access restrictions related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing
B5	Road Upgrades Unless the Planning Secretary agrees otherwise, prior to commencing construction, the Applicant must complete the road upgrades as detailed in Table 1 and Figure 1 of Appendix 4 of this consent. Unless the relevant roads authority agrees otherwise, the design of these upgrades must be subject to a road safety audit, comply with the Austroads Guide to Road Design (as amended by TfNSW supplements) and be carried out to the satisfaction of the relevant roads authority.	Section 5.1.1
B6	Road Upgrades: Heavy Vehicles Requiring Escort Prior to the use of heavy vehicles requiring escort on the public road network, all relevant approvals must be obtained and implemented (including for any road upgrades that may be required from point of origin to the site access points off Muscle Creek Road).	Section 6.14
B7	Road Maintenance The Applicant must:	
a)	Undertake an independent dilapidation survey which records the condition of the road pavement, drainage structures and other road related infrastructure, and assesses the: i) Condition of Sandy Creek Road on the access route, following the upgrade undertaken in accordance with condition B5 and prior to construction, upgrading and decommissioning activities. ii) Condition of Muscle Creek Road on the access route, prior to construction, upgrading and decommissioning activities. iii) Condition of Sandy Creek Road and Muscle Creek Road, between the New England Highway and the site access point, following the completion of construction, upgrading and decommissioning activities.	Section 7 Noting details on dilapidation surveys relating to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing
b)	Repair and/or make good any development-related damage to Sandy Creek Road and/or Muscle Creek Road (including road drainage infrastructure) identified in dilapidation surveys during construction, upgrading or decommissioning works in consultation with the relevant road authority. If there is a dispute about road repair between the Applicant and the relevant roads authority, then either party may refer the matter to the Planning Secretary for resolution.	Section 7 Noting details on repairs to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing

CoA No.	Commitment	Document reference
B8	Operating Conditions The Applicant must ensure:	
a)	The internal roads are constructed as all-weather roads.	Section 6.16
b)	There is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site.	Section 6.16
c)	The capacity of the existing roadside drainage network is not reduced.	Section 6.16
d)	All vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction.	Section 6.12
e)	Development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the public road network.	Section 6.9

3.4 Approved environmental management measures

Relevant AEMMs are listed in Table 3.4. This includes reference to required outcomes, the timing of when the commitment applies and cross reference to indicate where the requirement is addressed in this Plan or other Project management documents.

Table 3.4 Approved Environmental Management Measures relevant to this TMP

AEMM No.	Commitment	Timing	Document Reference
TT1	A detailed construction traffic management plan (CTMP) will be developed by the construction contractor in consultation with Muswellbrook Shire Council prior to the commencement of works. The CTMP will include a Driver Code of Conduct which informs drivers about the school bus routes along Muscle Creek Road and Sandy Creek Road. During construction, traffic management may be necessary to minimise any traffic impact on Muscle Creek Road and Sandy Creek Road.	Construction	This TMP Section 9 Section 9.5 Noting details on school bus routes as they relate to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing
TT2	Obtain a permit from NHVR to allow OSOM vehicles to use the road network as part of construction.	Construction	Section 6.14
TT3	Weekly inspections of Muscle Creek Road and Sandy Creek Road will occur during the construction period.	Construction	Section 7.5 Noting details on weekly inspections of Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing

3.5 DPHI request for information

During the development of the EIS, DPHI provided a number of requests for information (RFI). An RFI relating to traffic management was issued on 26/03/2024 requesting further SIDRA modelling at a number of locations and a summary of proposed traffic management and mitigation measures. A response was issued by OX2 on 19/07/2024, including details of SIDRA modelling and a summary of the proposed traffic management and mitigation measures.

The proposed traffic management and mitigation measures are listed in Table 3.4. This includes reference to required outcomes, the timing of when the commitment applies and cross reference to indicate where the requirement is addressed in this Plan or other Project management documents.

Table 3.5 Proposed traffic management and mitigation measures from RFI

RFI reference No.	Commitment	Timing	Document Reference																		
1	No construction traffic (light or heavy) will access to the northern site access on Sandy Creek Road during the 7:30 am to 8:30 am and 3:45 am to 4:45 pm peak hours during NSW school terms. This is aligned with the existing heavy vehicle restrictions in Sandy Creek Road. During school holiday periods, this restriction is not required.	Construction	Matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing																		
2	The enforcement of the above proposed travel restriction at the northern site can be verified by tube counts (maximum two months) at the site access on Sandy Creek Road.	Construction	Section 4.2																		
3	19 m long B-double truck will be the longest vehicle accessing the northern site access on Sandy Creek Road. The maximum size of truck using the southern site access is 26 m B-double trucks.	Construction	Matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing																		
4	Construction traffic movements to the northern site access on Sandy Creek Road will include the use of 12-seater minibuses to transport workers to the northern project area. The peak hourly construction traffic movements for Sandy Creek Road are summarised below: <table> <tr> <th>Description</th><th>Direction</th><th>Light Vehicles</th><th>Heavy Vehicles</th></tr> <tr> <td rowspan="2">AM Peak Movements</td><td>Eastbound</td><td>10</td><td>4</td></tr> <tr> <td>Northbound</td><td>0</td><td>4</td></tr> <tr> <td rowspan="2">PM Peak Movements</td><td>Eastbound</td><td>0</td><td>4</td></tr> <tr> <td>Northbound</td><td>10</td><td>4</td></tr> </table>	Description	Direction	Light Vehicles	Heavy Vehicles	AM Peak Movements	Eastbound	10	4	Northbound	0	4	PM Peak Movements	Eastbound	0	4	Northbound	10	4	Construction	Matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing
Description	Direction	Light Vehicles	Heavy Vehicles																		
AM Peak Movements	Eastbound	10	4																		
	Northbound	0	4																		
PM Peak Movements	Eastbound	0	4																		
	Northbound	10	4																		
5	A detailed construction traffic management plan (CTMP) will be developed by the construction contractor in consultation with TfNSW and Muswellbrook Shire Council prior to the commencement of works. The CTMP will include a Driver Code of Conduct which informs drivers about the school bus routes along Muscle Creek Road and Sandy Creek Road.	Construction	This Plan. Consultation – Section 1.5 Drivers Code of Conduct – Chapter 9 Noting that matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing																		

RFI reference No.	Commitment	Timing	Document Reference
6	Obtain a permit from NHVR (https://www.nhvr.gov.au/) to allow OSOM vehicles to the southern site access from the port of origin.	Construction	Section 6.14 Noting matters relating to OSOM deliveries would be addressed in a future revision for this Plan prior to Stage 1B

4 Existing environment

4.1 Site location and access

The site encompasses approximately 482 hectares (ha) and is located at Muscle Creek Road, Muswellbrook, NSW. The majority of the land is owned by Muswellbrook Coal Company (MCC). The Project area is split into two main areas of solar arrays to the north and south of the existing mine pit. These areas are connected by a linear corridor required for electricity transmission infrastructure. The southern area includes land owned by a private landowner.

An overview of the Project area and indicative site layout is provided in Figure 1.2 showing the Project area boundaries, surrounding road network and access points.

The Project area is bounded by Muscle Creek to the south and Sandy Creek Road to the north. The primary access point for Stage 1A will be via Muscle Creek Road. The Project area contains 330 kV and 132 kV transmission lines which cross both the north and south portions of the Project area. There is existing road access internally within the Project area as part of the MCC operations via Muscle Creek Road.

The transformer switchyard, substation and operation and maintenance facilities will be located in the south. Up to four 'high-risk' OSOM vehicles requiring escort will travel via New England Highway and Muscle Creek Road and enter the site via the southern access road. The access and internal road sizing will be sufficient to allow for the turning of vehicles into and out of the site.

4.2 Road network

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- State roads – freeways and primary arterials (TfNSW managed).
- Regional roads – secondary or sub arterials (council managed and part funded by the State).
- Local roads – collector and local access roads (council managed).

An overview of the surrounding road network and traffic characteristics is presented in Figure 1.1. Approved 26 m B-double routes are shown in blue in Figure 1-1, while approved 19 m B-double routes with time restrictions are shown in orange, noting these relate to Stage 4A works. New England Highway and Muscle Creek Road up to the southern site access road is an approved 26 m long B-double route.

The primary roads to be used by the Project are described in Table 4.1 and Table 4.2 and shown in Photograph 4.1 to Photograph 4.2.

Table 4.1 **New England Highway**

Aspect	Description
Road classification and connectivity	State Road which crosses the NSW border north of Tenterfield and forms a junction with the Pacific Highway at Hexham, Newcastle at the southern end
Alignment	North–south
Number of lanes	One lane each way, excluding near the intersections
Carriageway type	Sealed road
Carriageway width	Approximately 12.1 m with 3.4 m travel lane each way and 2.1 m shoulders (measured from MetroMap)
Posted speed limit	60 kilometres per hour (km/h) in Muswellbrook 100 km/h in rural sections of the highway
Heavy vehicle access	Approved B-double route
Traffic function	Carries regional traffic
Additional comments	N/A



Source: Google Maps

Photograph 4.1 **New England Highway (looking east towards New England Highway/Muscle Creek Road intersection)**

Table 4.2 **Muscle Creek Road**

Aspect	Description
Road classification and connectivity	Local road that starts at New England Highway at the south-west and roughly follows Muscle Creek until the road terminates approximately 10 km away at the north-east
Alignment	North-east–south-west
Number of lanes	One lane each way, excluding near the intersections
Carriageway type	Sealed road
Carriageway width	Approximately 8.4 m with 3.6 m travel lane each way and 0.6 m shoulders (measured from MetroMap)
Posted speed limit	100 km/h
Heavy vehicle access	Approved 26 m long B-double route up to Muscle Creek Road/Access Road (south) intersection, and local traffic only to the east of the intersection
Traffic function	Carries local traffic
Additional comments	N/A



Photograph 4.2 **Muscle Creek Road (looking west away from Muscle Creek Road/Access Road (south) intersection)**

5 Construction program and staging

5.1 Construction activities

Construction of the southern section of the solar farm and BESS is anticipated to commence in Q1 2026 and be fully commissioned by Q2 2028.

Temporary infrastructure required during the construction phase of the Project will include construction compounds and internal access tracks. Minor earthworks would be required for the preparation of the site, including minimal site levelling, laying of access tracks and drainage works. Most of the infrastructure would be prefabricated off-site, delivered and then assembled on-site.

Where required, additional or improved drainage channels, sediment control ponds and dust control measures will be implemented. Further, laydown areas and waste handling, fuel and chemical storage areas will be strategically placed to minimise potential environmental impacts during the construction phase of the Project.

5.1.1 Road upgrade works

During Stages 1A to 3 (as described in Section 1.4) of the development, there will be no vehicular activity via the northern site access (Sandy Creek Road). Hence, the proposed site access on Sandy Creek Road will be constructed as part of Stage 4A (northern solar farm construction). No road upgrade works on Muscle Creek Road are required to facilitate construction. Details on upgrade works to Sandy Creek Road and any related management measures will be addressed in a subsequent revision of this TMP.

5.2 Construction hours

In accordance with Condition B15, the construction hours will be limited to:

- Monday to Friday: 7:00 am to 6:00 pm
- Saturdays: 8:00 am to 1:00 pm
- no work on Sunday and NSW public holidays.

In accordance with Condition B16, it is noted that the following activities may be carried out outside the hours specified in Condition B15:

- a) commissioning activities that are inaudible at non-associated receivers;
- b) the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; or
- c) emergency work to avoid the loss of life, property or prevent material harm to the environment.

OX2 would not undertake works, including deliveries, outside of the approved construction hours unless the requirements of B16.

Condition B17 states:

The hours of construction activities specified in Condition B15 of this approval may be varied with the prior written approval of the Planning Secretary. Any request to alter the hours of construction must be:

- a) considered on a case-by-case or activity-specific basis;

- b) accompanied by details of the nature and justification for activities to be conducted during the varied construction hours;
- c) accompanied by written evidence that appropriate consultation with potentially affected sensitive receivers and notification of Councils (and other relevant agencies) has been and will be undertaken;
- d) accompanied by evidence that all feasible and reasonable noise mitigation and traffic management measures have been put in place; and
- e) accompanied by a noise impact assessment consistent with the requirements of the *Interim Construction Noise Guideline* (DECC, 2009), or latest version.

Any work required outside of the approved construction hours will comply with Conditions B16 and B17.

5.3 Construction workforce

During the peak construction period, a workforce of approximately 200 personnel will be required on site.

The construction workforce would predominately be accommodated within the Muswellbrook township and the construction workforce will be sourced from the local area as far as practicable.

5.4 Accommodation

An accommodation solution is proposed within Muswellbrook to support the construction workforce. This will be utilised during the peak construction of the Project. Details on the Project's approach to accommodation are included within the Accommodation and Employment Strategy (as required by Condition B36).

5.5 Plant and equipment

The typical plant and equipment required for construction will include items listed in Table 5.1.

The majority of the plant and equipment will be delivered to site on rigid and semi-trailer low-loaders. Construction materials will be delivered on rigid concrete agitators, truck and dog, and semi-trailer dump trucks.

Table 5.1 Typical construction plant and equipment

Construction phase	Plant type
Enabling works	• Front end loaders • Dump trucks • Road trucks • Water trucks • Excavators • Graders • Compactors and rollers • Light vehicles • Scissor lifts • Franna cranes
Construction and commissioning works	• Front end loaders • Dump trucks • Road trucks • Water trucks • Concrete trucks and pumps • Excavators • Graders • Compactors and rollers • Scrapers • Backhoe • Concrete saws and grinders • Light vehicles • Scissor lifts • Franna cranes • Mobile cranes • Generators • Welding equipment • Compressors

6 Traffic management

This section describes traffic management measures to be implemented during construction of Stage 1A.

6.1 Site access

Condition B4 states:

All vehicles associated with the development must enter and exit the site via:

- a) the site access point off Muscle Creek Road; or
- b) the site access point off Sandy Creek Road (excluding heavy vehicles requiring escort); as identified in Figure 2 of Appendix 4.

Note: Other site access points may be used for emergency purposes.

It is noted that the Sandy Creek Road access would not be used as part of Stage 1A and is not approved for use under the current revision of this TMP.

The existing southern site access is located on [Muscle Creek Road, Muscle Creek](#) (Photograph 6.1).



Photograph 6.1 Southern site access

6.2 Vehicle types and time

In accordance with Condition B1 (c), the maximum size of vehicle that will be used:

- Muscle Creek Road: 26-m long B-double trucks.

The maximum vehicle size will be specified in the Project information pack and any relevant commercial documentation. The gate keeper would record whether any vehicle entering site exceeds the 26-m long criteria. Where exceedances to permitted vehicle length are recorded these will be investigated. Any non-compliance would be reported in accordance with Section 7.8.1 and corrective and/or preventive measures put in place.

6.3 Traffic generation

In accordance with approval Condition B1(a), the maximum threshold of construction related vehicle will be:

- 90 heavy vehicle two-way movements per day (a maximum of 13 two-way heavy vehicle movements per hour)
- 10 light vehicle movements, two shuttle bus movements and two heavy vehicle movements accessing Sandy Creek Road per hour during construction, upgrading or decommissioning (not relevant to Stage 1A – to be addressed as part of Stage 4A TMP update)
- four movements of heavy vehicles requiring escort during construction, upgrading and decommissioning (not relevant to Stage 1A – to be addressed as part of Stage 1B TMP update).

The heavy vehicle arrival and departure will be scheduled in such a way that the daily and peak hourly threshold never exceeds the maximum limit. Deliveries will be spread throughout the day to minimise traffic impacts to the external road networks and to ensure safety within the site.

The Construction Manager (or delegate) would be responsible for the scheduling of vehicles based on upcoming delivery notifications for any delivery partner. The Construction Manager would ensure deliveries adhere to daily limits specified in Condition B1(a). The schedule would be communicated to any of the EPC Contractor's delivery partners.

6.4 Vehicle record keeping

In accordance with Condition B2 and TfNSW's request, the gate keeper will record heavy vehicles on daily basis. All heavy vehicles must be recorded and accurate records kept. The gatekeeper will record vehicle entry and exit times, vehicle class (recorded as heavy vehicle (HV) or light vehicle (LV)), whether carpooling is occurring (i.e. at least one passenger), whether any HV entering Muscle Creek Road exceeds 26 m, are spoil loads covered and vehicle registration number. The gatekeeper would alert the Construction Manager once the 80 vehicle per day threshold has been met as a warning that the limit is approaching. Similarly, the gatekeeper would alert the Construction Manager once 10 heavy vehicles have entered the site in an hour to alert the Construction Manager to the limit being approached (interpreted as per hour block resetting on the hour, rather than a rolling hour for ease of monitoring).

The Construction Manager (or delegate) would review data on an ongoing basis to ensure delivery numbers and other Project requirements are being met, practices such as delivery scheduling and training and communication are effective. Where the data indicates that criteria are not being met an investigation would occur. Any non-compliance would be reported in accordance with Section 7.8.1 and corrective and/or preventive measures put in place.

In summary, the maximum number of daily and peak hourly light, heavy vehicles, carpool, ride sharing and shuttle bus movements and heavy vehicle haulage route will be regularly enforced and monitored to ensure there is no breach of the approval conditions.

Any data or reporting can be provided to a road authority upon request.

To encourage carpooling or ride sharing, a digital carpool register will be created (e.g. Excel), to record daily departure and return times as well as pick-up points such as the MSF parking area and accommodation. The register will be updated weekly by the Construction Manager (or delegate) and stored in the securely within the EPCs information management system. Two or three carpool meeting points will be designated near accommodation areas with safe off-road parking and appropriate signage, and these locations will be marked on the Site Access Map by the EPC. Carpooling vehicles must carry all passengers with seatbelts and PPE available, display a "Site Vehicle" identification sign or sticker, and comply with the same induction, fatigue, and speed requirements as other vehicles. The Construction Manager will conduct random audits to ensure compliance.

Any data collated may be submitted to the road authorities, upon request.

6.5 Traffic distribution and control

In accordance with Condition B3, the heavy vehicles will comply with the following routes:

- New England Highway/Muscle Creek Road intersection: vehicles will arrive and depart in any direction of New England Highway as shown by haulage routes included in Figure 1.1.

The above prescribed route will be covered in Drivers Code of Conduct.

No access to the site via Sandy Creek Road would occur during Stage 1A. This TMP would be updated prior to Stage 4A and would include haulage routes for the Northern Solar Farm and any upgrades required on Sandy Creek Road.

Specific traffic control measures would be developed as part of ongoing construction planning and would be refined as construction activities progress. These measures would be designed and implemented to suit the specific work activities, traffic conditions and safety requirements at the time.

In general, traffic control measures will include a combination of one or more of the following:

- Traffic Guidance Schemes (TGSs) prepared in accordance with the relevant standards, identifying the required traffic control layouts, advance warning signage, delineation devices and work zone arrangements.
- Traffic controllers where required to manage vehicle movements, particularly during activities such as construction vehicle entry and exit, delivery movements, temporary lane closures or where plant interacts with public traffic.
- Temporary signage, including advance warning signs, speed restriction signage, road work signage and directional signage to inform road users of changed traffic conditions.
- Delineation devices, such as cones, bollards, barriers and temporary fencing to separate construction activities from traffic and pedestrians where required.
- Temporary speed management measures within work areas where required to improve safety for workers and road users.
- Managed construction vehicle access points, including clearly defined entry and exit locations, sight distance controls and traffic controller assistance where required.

- Internal site traffic controls, including designated haul routes, one-way vehicle movements where practicable, and signage to manage interactions between construction vehicles, plant and pedestrians.
- Scheduling of deliveries and heavy vehicle movements, where practicable, to avoid peak traffic periods and minimise impacts on the surrounding road network.

All traffic control measures would comply with the relevant standards and guidelines. Where required, the appropriate approvals and permits would be obtained from the relevant road authority prior to implementation.

6.6 Public transport usage

Access to the Project site by public transport is not available. Hence, public transport will not be used to commute to the site.

6.7 School bus services

School buses operate on Sandy Creek Road and Muscle Creek Road during the NSW school terms.

Condition B1 (b) which states “no construction traffic will access Sandy Creek Road between 7:30 am to 8:30 am and 3:45 pm to 4:45 pm during NSW school terms;”. These requirements, measures to mitigate impacts and the monitoring approach to construction vehicle restrictions on Sandy Creek Road would be included in a revised version of this TMP prior to Stage 4A works commencing.

School bus times for Muscle Creek Road during school terms have been confirmed as:

- 7:45 am to 8:15 am Monday to Friday
- 3:45 pm to 4:15 pm Monday to Friday
- 1.45pm to 2.15pm Friday only.

School bus times will be reconfirmed at the start of each school term to ensure any changes to schedules are reflected in the scheduling of heavy vehicles movements.

Compliance with this restriction will be enforced through site induction requirements, contractual obligations for haulage contractors, and delivery scheduling procedures.

OX2 would avoid the use of heavy vehicles during these times, or at any time period agreed with MSC where school bus operations change. In terms of monitoring, the gatekeeper would record the arrival and departure of any heavy vehicle to site. Records would be reviewed by the Construction Manager (or delegate) on a weekly basis and any instances of heavy vehicles utilising Muscle Creek Road during the period of school bus use would be investigated. Where an investigation has indicated that a non-compliance has occurred, the Project would undertake a non-compliance notification in accordance with Section 7.8.1 and corrective actions implemented as required. The Driver’s Code of Conduct requires all personnel to be aware of school bus operations within the area. Drivers would be made aware of these restrictions through inductions, tool-boxes and signage. The EPC Contractor would make its delivery partners, including any haulage companies, aware of these restrictions within Project briefing material, contracts or other communications.

The Project has liaised with school bus service providers as part of the development of this Plan. Further consultation would occur:

- where changes in construction traffic conditions occur
- prior to Stage 1B and Stage 4A of the Project

- where incidents, near-misses, non-compliance or complaints occur in regard to any school bus and construction traffic interface.

6.8 Pedestrian and cyclist safety

Temporary fencing will be established to define the extent of the work site to provide segregation and protection for pedestrians.

Due to the rural nature of the site, cyclist activities along Muscle Creek Road are minimal. However, any presence of cyclist activities and safety measures will be outlined in the site induction and Driver's Code of Conduct.

6.9 Climatic control and prevention of mud tracking

Drivers will be trained to respond to local climatic condition, e.g. fog, dust, localised flooding. All vehicles are to be inspected prior to leaving the site for cleanliness by the driver. Loaded vehicles are checked before leaving the point of origin so that no loose material may fall on the road surface. Methods to control material drag-out (e.g. cattle grid or wheel wash) will be included within the Erosion and Sediment Control Plan (ESCP). The ESCP would be implemented for the duration of construction. In accordance with the Soil and Water Management Plan, roadways would be inspected during periods of wet weather to monitor for mud tracking. Where mud tracking was observed on public roads it would be cleaned up immediately (where safe to do so) and site controls would be reviewed.

6.10 State road management

Heavy vehicles, requiring escort and without escort, will follow the State Roads in accordance with Condition B3.

Condition B3 states:

Unless otherwise agreed by the Planning Secretary, all heavy vehicles and heavy vehicles requiring escort associated with the development must travel to and from the site via:

- (a) New England Highway and Muscle Creek Road; and
- (b) New England Highway (to and from the south only) and Sandy Creek Road (excluding heavy vehicles requiring escort),

as identified in Figure 3 of Appendix 4 for heavy vehicles, and Figure 4 of Appendix 4 for heavy vehicles requiring escort.

It is noted that reference to Condition B3(b) is included here for completeness. The New England Highway to/from Sandy Creek haulage route would not be utilised as part of Stage 1A and would be subject to subsequent updates to this TMP. The prescribed haulage route and timing for the deliveries is included in the Driver's Code of Conduct as per Figure 1.1.

6.11 Construction workers parking

During construction, all worker vehicles must park within designated onsite areas, unless directed by the Construction Manager (i.e. it is foreseeable that some vehicles would park at the work fronts to support construction activities). Parking will be provided at the temporary laydown area (construction compound). Parking on Sandy Creek Road, Muscle Creek Road, or any other adjoining public road is strictly prohibited. The approved parking locations are shown in Figure 1.2 as laydown.

6.12 Heavy vehicle turns

All heavy vehicles and light vehicles are to enter and leave the site in a forward direction. Swept path assessments have been performed at key strategic locations in preparation of the TIA which demonstrates that the intersections connecting public roads have sufficient turn geometry. All loading and unloading activities will be undertaken wholly within the site.

6.13 Traffic management protocol for heavy vehicles at New England Highway/Sandy Creek Road intersection

Details of traffic management for heavy vehicles at the New England Sandy Creek Road intersection will be addressed in a subsequent revision of this Plan prior to Stage 4A works commencing.

6.14 Traffic management for the vehicles requiring escort

An OSOM¹ assessment has been undertaken as part of the EIS. As per the approval Conditions B1(a)(iii) and B3 (Figure 4 in Appendix 4), there will be maximum 4 'high-risk' OSOM vehicle movements. All OSOM movements will occur via the southern site access, Muscle Creek Road. Prior to Stage 1B, the TMP would be updated to include deliveries by high-risk heavy vehicles requiring an escort. The update to the TMP would be included within an OSOM Transport Management Plan, included as an appendix to the TMP.

In accordance with Condition B6, prior to the use of heavy vehicles requiring escort on the public road network, all relevant approvals will be obtained and implemented, including any approvals required for any road upgrades that may be required from point of origin to the site access points off Muscle Creek Road.

In accordance with approval Condition B6, relevant applications will be lodged to National Heavy Vehicle Regular (NHVR) for the OSOM transport. Necessary application ²form will be lodged to NHVR for approval. As part of the approval, NHVR will consult with the major stakeholders, e.g. TfNSW and affected councils that the OSOM vehicle will travers through. The applicant and the OSOM transport contractor will ensure that:

- onsite activities and movement to general trucks are minimised during the OSOM deliveries to ensure safety
- the OSOM vehicle size does not exceed the size outlined in the OSOM assessment included in the EIS
- a live test to be undertaken prior to the first OSOM delivery, in accordance with NHVR's requirements
- front and back escort are provided in accordance with NHVR's approval
- ensure constant communication between the OSOM vehicle and the pilot vehicles
- any bridge assessment is subject to NHVR's approval condition
- the OSOM haulage route follows the NHVR's approved routes and delivery occurs in certain times to minimise traffic disruptions in public roads. NHVR generally approves deliveries to occur during the nighttime where the traffic volumes are the lowest in the road network

¹ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-46543209%2120230717T062626.184%20GMT> (Refer to Appendix E) and <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=EXH-61280456%2120240219T053456.322%20GMT> (Refer to Section 4.9)

² <https://www.nhvr.gov.au/media/26/download>

- pullover bays and rest areas are used in accordance with NHVR's approval conditions
- in case of any emergency situation, OSOM driver follows NHVR's emergency protocol
- all temporary traffic controls, e.g. signal plan, Traffic Guidance System (TGS) are prepared, approved by the relevant road authorities and implemented during the OSOM deliveries
- all traffic controllers used are TfNSW accredited
- the number of OSOM vehicles accessing the site are recorded and does not exceed four deliveries.

If the above procedures are followed, the OSOM deliveries will occur with minimal impact to the external road users.

6.15 Shuttle bus operations

Shuttle bus operations may be implemented for Stage 1A; however, at the time of writing, sufficient details are not available to confirm their use. This TMP would be updated in consultation with MSC and TfNSW, and to the satisfaction of the Planning Secretary, prior to the implementation of shuttle bus operations on Muscle Creek Road.

During early construction phases, only a small portion of the peak workforce is expected to be present on site, and the available on-site parking is anticipated to be sufficient. Carpooling would also be encouraged during this period.

The Construction Manager (or delegate) would monitor the availability of on-site parking and assess the need for a shuttle bus service where construction program and forecast workforce numbers indicate that it may be required.

Where a shuttle bus service is required, this Plan would be updated to include sufficient detail to support its operation for Stage 1A, noting that adequate time would be provided for review by MSC, TfNSW and DPHI. Details would include shuttle pick-up and drop-off locations, scheduling, worker parking locations at or near the pick-up point, and any additional mitigation measures required to minimise impacts to the surrounding community.

6.16 Internal roads within the site and existing drainage

In accordance with Condition B8, all internal roads will be all weather roads, e.g. gravel roads with adequate drainage infrastructure. Road design will be addressed as part of the Project's detailed design.

The capacity of existing roadside drainage would be maintained and this would be addressed through detailed design.

There will be sufficient parking within the site, hence there will be no parking impact to the adjoining public roads. Signage would be installed to alert drivers to parking locations on site.

6.17 Crash data analysis

Crash data analysis is undertaken as part of the traffic impact ³assessment. To ensure road user safety, a driver's code of conduct will be prepared which all construction related vehicle must adhere to (Section 9).

³ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-46543209%2120230717T062626.184%20GMT> (see Section 2.6)

6.18 Community notification protocol and complaints management

The Project will notify local residents, businesses, councils, and emergency services of any traffic impacts, including road closures, detours, oversized deliveries, or changes in heavy vehicle movements. These would be provided on an ad-hoc basis as relevant matters are identified within the planning process. Notifications will be provided in advance in line with the process set out in the Project Community and Stakeholder Engagement Strategy. The distribution of the notification will be on a case-by-case basis depending on who may be impacted. All notifications will include the nature, timing, and duration of any impacts, along with contact details for enquiries or complaints.

In addition to ad-hoc communications, quarterly newsletters (electronic and hard-copy) would be issued to the local community and relevant stakeholders and would include any relevant traffic and transport matters as necessary.

OX2 is committed to managing complaints respectfully, objectively, and efficiently. Anyone has the right to lodge a complaint regarding Project development, construction, operation, or staff conduct, including matters related to traffic and transport, and OX2 aims to acknowledge and resolve issues promptly.

A Complaints Investigation and Response Plan has been developed for the Project. The plan will:

- enable lodgement of enquiries and complaints via online form, phone, or email
- ensure all complaints are logged in a Complaints Register, including details of the complaint, actions taken, and response times
- require acknowledgment within 24 hours (next business day on weekends/holidays) for in person complaints, within 48 hours (next business day on weekends/holidays) for telephone or email complaints and within five business days for complaints received via mail
- outline investigation and resolution processes, including mediation if required
- ensure corrective or mitigative actions are implemented and monitored to prevent recurrence
- provide regular review of complaints data to identify trends and improve management practices.

Complaints will be managed by the Construction or Operation Manager and Community Manager (or delegate), with records retained in compliance reports and made available to regulators on request.

6.19 Cumulative Impacts and adaptive management

OX2 will regularly communicate with the proponent with other projects in the area and if feasible, amend the construction scheduling to minimise cumulative traffic impact in the area. It should be noted that the EIS traffic⁴ report considered the cumulative traffic impacts associated with concurrent projects (worst-case scenario) as part of the approved Project.

OX2 will continue to engage with road authorities and relevant nearby projects, such as the Muswellbrook Bypass Project to understand potential cumulative impacts and mitigate them to the extent possible. OX2 have offered regular progress meetings to TfNSW and MSC. Where accepted, a monthly coordination meeting would be held with these parties (or at a frequency agreed with the parties) with traffic being a key agenda item. The meeting would be utilised to coordinate sharing of delivery schedules, traffic monitoring data, OSOM movements, reviewing any traffic related complaints and to understand potential constraints or risks.

⁴ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=EXH-61280456%2120240219T053456.322%20GMT>

As the Project evolves and interactions with other projects such as the Muswellbrook Bypass, Muscle Creek Road upgrades begin, changes to existing or additional mitigation measures may be required. To enable appropriate mitigation to be applied in an efficient and timely manner OX2 would implement an adaptive management approach. Where operational adjustments are identified as necessary, or where mitigation measures or monitoring outcomes indicate that refinements may be beneficial, OX2 will consult with the relevant road authority to agree an appropriate response. Any agreed refinements would be documented in writing with the relevant road authority and noted with DPHI, which may occur through correspondence or meeting minutes to facilitate timely implementation.

This adaptive management approach allows for practical and proportionate refinements to be implemented efficiently, without necessitating immediate formal revision of the overarching management documentation, unless otherwise required.

The TMP would be updated in accordance with the requirements of Condition C2 and where otherwise required. Consultation with the relevant road authority and/or DPHI will be undertaken where a formal revision to the TMP is considered necessary due to more significant changes to mitigation measures, beyond what could be considered reasonable under the adaptive management approach. The decision on whether a change to mitigation measure is considered significant could be made by OX2 or as directed by TfNSW, MSC or DPHI. Otherwise, routine operational refinements agreed with the relevant road authority may be implemented in accordance with the Project's adaptive management approach. OX2 would provide sufficient time for stakeholder review where any TMP update is required and would provide notice to the relevant stakeholders that an update is to occur as soon as known.

It is also understood that some nearby projects may place further constraints on the Project, such as height restrictions associated with Muswellbrook Bypass infrastructure on Sandy Creek Road. OX2 will continue to engage with surrounding projects to understand any potential impacts.

6.20 Mitigating dust impacts

Traffic and vehicle movements have the potential to generate dust through disturbance of loose material on road and ground surfaces.

The following measures would be implemented to mitigate dust impacts arising from vehicle movements associated with the Project:

- Water truck(s) will be used during construction for dust suppression along internal, unsealed access roads and disturbed areas.
- Vehicle movements will be minimised, where possible.
- All vehicles, plant and equipment will be cleaned and washed regularly.
- All vehicles, plant and equipment will be regularly inspected and maintained to ensure that they are operating efficiently.
- Regular maintenance of unsealed access roads will be undertaken to minimise wheel-generated dust.
- Dust suppression requirements during construction will take into consideration weather and the likelihood of extended dry periods which could exacerbate impacts.

6.21 Consolidated management measures

Table 6.1 includes a consolidated list of management measures.

Table 6.1 Consolidated management measures

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
CoA No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
B1	The Applicant must ensure that:			
a)	The development does not generate more than:	Sections 6.3, 6.14, 7.5 and 7.6	Gate keeper records and data review	Construction Manger
	iv) 90 heavy vehicle movements a day (a maximum of 13 heavy vehicle movements per hour) during construction, upgrading or decommissioning.			
	v) 10 light vehicle movements, 2 shuttle bus movements and 2 heavy vehicle movements accessing Sandy Creek Road per hour during construction, upgrading or decommissioning.			
	vi) 4 movements of heavy vehicles requiring escort during construction, upgrading and decommissioning.			
b)	No construction traffic will access Sandy Creek Road between 7:30 am to 8:30 am and 3:45 pm to 4:45 pm during NSW school terms.	Construction Traffic access periods related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	N/A	N/A
c)	Length of any vehicles (excluding heavy vehicles requiring escort) used for the development does not exceed:	Sections 6.2, 7.5 and 7.6	Gate keeper records and data review Compliance spot checks	Construction Manger
	iii) 26 metres for Muscle Creek Road unless the Planning Secretary agrees otherwise.			
B2	The Applicant must keep accurate records of the number of heavy vehicles requiring escort and heavy vehicles entering or leaving the site each day for the duration of the project.”	Sections 6.4, 7.5 and 7.6	Gate keeper records and data review	Construction Manger
B3	Access Route Unless otherwise agreed by the Planning Secretary, all heavy vehicles and heavy vehicles requiring escort associated with the development must travel to and from the site via:			

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
a)	New England Highway and Muscle Creek Road.	Sections 6.14, 7.5	Compliance spot checks	Construction Manger
b)	New England Highway (to and from the south only) and Sandy Creek Road (excluding heavy vehicles requiring escort) as identified in Figure 3 of Appendix 4 for heavy vehicles, and Figure 4 of Appendix 4 for heavy vehicles requiring escort.	Heavy vehicle access requirements related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	N/A	N/A
B4	Site Access All vehicles associated with the development must enter and exit the site via:			
a)	the site access point off Muscle Creek Road, or	Section 6.1		
b)	the site access point off Sandy Creek Road (excluding heavy vehicles requiring escort) as identified in Figure 2 of Appendix 4. Note: Other site access points may be used for emergency purposes.	Site access restrictions related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	N/A	N/A
B5	Road Upgrades Unless the Planning Secretary agrees otherwise, prior to commencing construction, the Applicant must complete the road upgrades as detailed in Table 1 and Figure 1 of Appendix 4 of this consent. Unless the relevant roads authority agrees otherwise, the design of these upgrades must be subject to a road safety audit, comply with the Austroads Guide to Road Design (as amended by TfNSW supplements) and be carried out to the satisfaction of the relevant road's authority.	Site access restrictions related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	N/A	N/A
B6	Road Upgrades: Heavy Vehicles Requiring Escort Prior to the use of heavy vehicles requiring escort on the public road network, all relevant approvals must be obtained and implemented (including for any road upgrades that may be required from point of origin to the site access points off Muscle Creek Road).	Matters relating to OSOM deliveries would be addressed in a future revision for this Plan prior to Stage 1B	N/A	N/A
B7	Road Maintenance The Applicant must:			

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
a)	Undertake an independent dilapidation survey which records the condition of the road pavement, drainage structures and other road related infrastructure, and assesses the:	Section 7	Dilapidation records	Construction Manager
iv)	Condition of Sandy Creek Road on the access route, following the upgrade undertaken in accordance with condition B5 and prior to construction, upgrading and decommissioning activities.	Noting details on dilapidation surveys relating to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing		
v)	Condition of Muscle Creek Road on the access route, prior to construction, upgrading and decommissioning activities.			
vi)	Condition of Sandy Creek Road and Muscle Creek Road, between the New England Highway and the site access point, following the completion of construction, upgrading and decommissioning activities.			
b)	Repair and/or make good any development-related damage to Sandy Creek Road and/or Muscle Creek Road (including road drainage infrastructure) identified in dilapidation surveys during construction, upgrading or decommissioning works in consultation with the relevant road authority. If there is a dispute about road repair between the Applicant and the relevant roads authority, then either party may refer the matter to the Planning Secretary for resolution.	Section 7 Noting details on repairs to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	Dilapidation records Consultation records Work as Executed drawings	Construction Manager
B8	Operating conditions The Applicant must ensure:			
a)	The internal roads are constructed as all-weather roads.	Section 6.16	Detailed design	Construction Manager
b)	There is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site.	Section 6.16	Compliance checks	Construction Manager
c)	The capacity of the existing roadside drainage network is not reduced.	Section 6.16	Detailed design	Construction Manager
d)	All vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction.	Section 6.12	Compliance checks	Construction Manager
e)	Development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the public road network.	Section 6.9	Compliance checks	Construction Manager
B9	The Applicant must prepare a Traffic Management Plan for the development in consultation with TfNSW and Muswellbrook Shire Council and to the satisfaction of the Planning Secretary. This plan must include:	Section 1.4	Consultation records Endorsement Letter Independent Environmental Audit	Site Manager

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
a)	details of the transport route to be used for development-related traffic	Section 6.5	Compliance checks	Construction Manager
b)	details of the road upgrade works required by condition B5 of this consent, including a schedule for the road upgrades and extent of the proposed work area	Road upgrades related to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	N/A	N/A
c)	a reconciliation table to demonstrate all traffic-related management measures and recommendations identified in the EIS have been included in the plan	Table 3.2 Table 3.3	Document reviews	Site Manager
d)	details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:			
xv)	details of the dilapidation surveys required by condition B7 of this consent	Section 7	Dilapidation records Consultation records Work as Executed drawings	Construction Manager
xvi)	temporary traffic controls, including detours and signage	Sections 5.1, 6.5 and 6.14	Traffic Guidance Schemes Signage Plans Construction planning figures	Construction Manager
xvii)	notifying the local community about project-related traffic impacts	Section 6.18	Quarterly and ad-hoc newsletters Web-site	Site Manager
xviii)	procedures for receiving and addressing complaints from the community about development -related traffic	Sections 9.12, 9.13 and 9.14	Quarterly and ad-hoc newsletters Web-site	Site Manager
xix)	minimising potential for conflict with school buses and other road users as far as practicable, including preventing queuing on the public road network	Section 6.3 and 6.7	Delivery schedule Compliance checks Gatekeeper records and data review	Construction Manager
xx)	minimising potential cumulative traffic impacts with other projects in the area during construction, upgrading or decommissioning works	Section 6.19	Consultation records	Construction Manager

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
	xxi) minimising dirt tracked onto the public road network from development -related traffic	Section 9.8 and 9.9	Compliance checks	Construction Manager
	xxii) measures for managing light vehicle peak numbers, including employee shuttle bus service, carpooling or ride sharing by employees	Section 6.4	Gatekeeper records and data review	Construction Manager
	xxiii) details and volume of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to ensure employee use of this service	Currently not approved under this TMP. To be included in a future revision of this TMP	N/A	N/A
	xxiv) scheduling of heavy vehicle movements to minimise convoy length or platoons, and to minimise conflict with light vehicles	Section 6.3	Delivery schedule Compliance checks Gatekeeper records and data review	Construction Manager
	xxv) responding to local climate conditions that may affect road safety such as fog, dust, wet weather	Section 6.9	Compliance checks	Construction Manager
	xxvi) responding to any emergency repair or maintenance requirements	Sections 7.2 and 9.10.	Consultation records Compliance checks	Construction Manager
	xxvii) a traffic management system for managing heavy vehicles requiring escort	Matters relating to OSOM deliveries would be addressed in a future revision for this Plan prior to Stage 1B	N/A	N/A
	xxviii) a traffic management protocol for heavy vehicle movements turning right in and left out at the New England Highway and Sandy Creek Road intersection.	A traffic management protocol specific for heavy vehicle movements at the Sandy Creek Road intersection will be added to this Plan prior to Stage 4A construction commencing	N/A	N/A
e)	A driver's code of conduct that addresses:			
	iv) driver fatigue	Section 9.6	Induction contents, training and records Compliance checks	Construction Manager

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
	v) procedures to ensure that drivers, including employees, contractors and sub-contractors using private vehicles adhere to the designated transport routes and speed limits	Sections 9.2 and 9.3	Induction contents, training and records Compliance checks	Construction Manager
	vi) procedures to ensure that drivers implement safe driving practices.	Section 9	Induction contents, training and records Compliance checks	Construction Manager
(f)	A program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan.	Section 7.4	Induction contents, training and records Compliance checks	Construction Manager
(g)	A flood response plan detailing procedures and options for safe access to and from the site in the event of flooding.	Appendix A	Compliance checks Emergency drills (as required by the Emergency Plan)	Construction Manager
	Following the Planning Secretary's approval, the Applicant must implement the Traffic Management Plan.	This TMP will be implemented following approval from the Planning Secretary		
AEMM	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
TT1	A detailed construction traffic management plan (CTMP) will be developed by the construction contractor in consultation with Muswellbrook Shire Council prior to the commencement of works. The CTMP will include a Driver Code of Conduct which informs drivers about the school bus routes along Muscle Creek Road and Sandy Creek Road. During construction, traffic management may be necessary to minimise any traffic impact on Muscle Creek Road and Sandy Creek Road.	This TMP Section 9 Section 9.5 Noting details on school bus routes as they relate to Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	Independent Environmental Audits per Section 7.9	Site Manager
TT2	Obtain a permit from NHVR to allow OSOM vehicles to use the road network as part of construction.	Section 6.14 Noting matters relating to OSOM deliveries would be addressed in a future revision for this Plan prior to Stage 1B	N/A	N/A

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
TT3	Weekly inspections of Muscle Creek Road and Sandy Creek Road will occur during the construction period.	Section 7.5 Noting details on weekly inspections of Sandy Creek Road will be added to this Plan prior to Stage 4A construction commencing	Compliance checks	Construction Manager
RFI	Management measure or requirement	Document reference	Adherence or monitoring	Responsible
RFI-1	No construction traffic (light or heavy) will access to the northern site access on Sandy Creek Road during the 7:30 am to 8:30 am and 3:45 am to 4:45 pm peak hours during NSW school terms. This is aligned with the existing heavy vehicle restrictions in Sandy Creek Road. During school holiday periods, this restriction is not required.	Matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing	N/A	N/A
RFI-2	The enforcement of the above proposed travel restriction at the northern site can be verified by tube counts (maximum two months) at the site access on Sandy Creek Road.	Matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing	N/A	N/A
RFI-3	19 m long B-double truck will be the longest vehicle accessing the northern site access on Sandy Creek Road. The maximum size of truck using the southern site access is 26 m B-double trucks.	Matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing	N/A	N/A

No.	Management measure or requirement	Document reference	Adherence or monitoring	Responsible																		
RFI-4	Construction traffic movements to the northern site access on Sandy Creek Road will include the use of 12-seater minibuses to transport workers to the northern project area. The peak hourly construction traffic movements for Sandy Creek Road are summarised below: <table><tr><th>Description</th><th>Direction</th><th>Light vehicles</th><th>Heavy vehicles</th></tr><tr><td rowspan="2">AM Peak Movements</td><td>Eastbound</td><td>10</td><td>4</td></tr><tr><td>Northbound</td><td>0</td><td>4</td></tr><tr><td rowspan="2">PM Peak Movements</td><td>Eastbound</td><td>0</td><td>4</td></tr><tr><td>Northbound</td><td>10</td><td>4</td></tr></table>	Description	Direction	Light vehicles	Heavy vehicles	AM Peak Movements	Eastbound	10	4	Northbound	0	4	PM Peak Movements	Eastbound	0	4	Northbound	10	4	Matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing	N/A	N/A
Description	Direction	Light vehicles	Heavy vehicles																			
AM Peak Movements	Eastbound	10	4																			
	Northbound	0	4																			
PM Peak Movements	Eastbound	0	4																			
	Northbound	10	4																			
RFI-5	A detailed construction traffic management plan (CTMP) will be developed by the construction contractor in consultation with TfNSW and Muswellbrook Shire Council prior to the commencement of works. The CTMP will include a Driver Code of Conduct which informs drivers about the school bus routes along Muscle Creek Road and Sandy Creek Road.	This TMP Consultation – Section 1.5 Drivers Code of Conduct – Chapter 9 Noting that matters relating to access via Sandy Creek Road will be addressed in an update to this TMP prior to Stage 4A works commencing	Independent Environmental Audits per Section 7.9	Site Manager																		
RFI-6	Obtain a permit from NHVR (https://www.nhvr.gov.au/) to allow OSOM vehicles to the southern site access from the port of origin.	Matters relating to OSOM deliveries would be addressed in a future revision for this Plan prior to Stage 1B	N/A	N/A																		

7 Dilapidation surveys and road maintenance in local roads

7.1 Dilapidation survey in Muscle Creek Road

In accordance with Condition B7 (a) OX will:

undertake an independent dilapidation survey which records the condition of the road pavement, drainage structures and other road related infrastructure, and assesses the:

(i) condition of Sandy Creek Road on the access route, following the upgrade undertaken in accordance with condition B5 and prior to construction, upgrading and decommissioning activities

(ii) condition of Muscle Creek Road on the access route, prior to construction, upgrading and decommissioning activities; and

(iii) condition of Sandy Creek Road and Muscle Creek Road, between the New England Highway and the site access point, following the completion of construction, upgrading and decommissioning activities;

The dilapidation approach for Muscle Creek Road is subject to ongoing discussions with MSC. A dilapidation survey of Muscle Creek Road will be undertaken in accordance with a timing and methodology agreed with MSC.

OX2 participated in an online meeting with MSC on 14 January 2026. It was agreed that the scope and methodology of dilapidation survey will be agreed with MSC independently of this TMP. This includes any permit to undertake dilapidation survey activities within the road reserve.

7.2 Road maintenance and emergency repair

In accordance with Condition B7 (b) OX will:

repair and/or make good any development-related damage to Sandy Creek Road and/or Muscle Creek Road (including road drainage infrastructure) identified in dilapidation surveys during construction, upgrading or decommissioning works in consultation with the relevant road authority.

If there is a dispute about road repair between the Applicant and the relevant roads authority, then either party may refer the matter to the Planning Secretary for resolution.

As discussed at the online meeting held with MSC on 14 January 2026, an agreement will be reached between OX2 and MSC in relation to maintenance and emergency repair of Muscle Creek Road and Sandy Creek Road independently of this TMP.

OX2 understands that MSC is developing a Road Maintenance Contributions Plan which will identify any payment required by development projects utilising certain council roads, including Muscle Creek Road and Sandy Creek Road. Noting that the Road Maintenance Contributions Plan is yet to be finalised, OX2 is committed to working with MSC in a collaborative manner to reach agreement on the details of any contributions that may be required for Project related roads, with other projects utilising the same roads expected to do the same.

Where emergency repair of any road is required due to damage attributable to the Project, OX2 would undertake repair works in consultation with the appropriate road authority.

7.2.1 Damage to public infrastructure

Condition A9 states:

Unless the Applicant and the applicable authority agree otherwise, the Applicant must:

- (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
- (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

Note: This condition does not apply to the upgrade and maintenance of the road network, which is expressly provided for in the conditions of this consent.

OX2 would comply with Condition A9 and would consult with the asset owner regarding any repair to damage caused by the Project, any replacement of items damaged by the Project that cannot be repaired or relocation of public infrastructure that must occur to accommodate Project requirements. It is noted that Condition A9 does not apply to the upgrade and maintenance of the road network, which is addressed within Condition B7.

7.3 Roles and responsibilities

The Project team’s organisational structure and overall roles and responsibilities are outlined in Section 7.1 of the EMS. Specific roles not mentioned in the EMS but are required for the implementation of traffic management controls are detailed in Table 7.1.

Table 7.1 Roles and responsibilities specific to this Plan

Role	Responsibilities
Construction manager (or delegate)	• Logistics management/delivery schedule • Traffic control • Dilapidation surveys • Light and heavy vehicle record keeping • Road maintenance • Heavy vehicle requiring escort • Inductions for all drivers • Compliance monitoring

7.4 Training

All Project personnel working on-site, including employees, contractors (and their sub-contractors), will undergo site induction training relating to traffic management issues. The induction training will address elements related to traffic management, including:

- existence and requirements of this Plan
- applicable and relevant legislative requirements
- roles and responsibilities for traffic management
- typical activities that may impact traffic and associated environmental impacts
- approved haulage routes, vehicle size limits, speed limits, fatigue management
- no access to the Northern Solar Farm or Sandy Creek Road would occur as part of Stage 1A
- car-pooling and shuttle bus use (where approved)
- procedure to be implemented in the event of an incident or non-compliance (e.g. use of unapproved haulage route)
- traffic mitigation and management measures
- Driver's Code of Conduct.

The contents of the site induction would be reviewed for future updates of this TMP.

The site induction will ensure that all employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

Targeted training in the form of toolbox talks or specific training will be provided to personnel with a key role in site or traffic management. See Table 7.2 for details specific to this Plan.

Table 7.2 Training responsibilities relevant to this Plan

Training	Delivery
Driver's Code of Conduct	General Induction, Delivery Driver Induction, toolbox talks
Benefits of ride sharing and car-pooling	Toolbox talks
Duties of the gate keeper and tools to be used	Specialised training for any individual tasked with the role of gate keeper

Further details regarding training are outlined in Section 7.2 of the EMS.

7.5 Inspections

Traffic and road specific inspection requirements are outlined in Table 7.3. Additional requirements and responsibilities relating more broadly to inspections are documented in the EMS Section 7.3.

Table 7.3 Inspection requirements

Type	Frequency	Standard	Location	Reporting	Responsibility
Muscle Creek Road Condition and Hazard Inspection	Weekly when in use during construction	Visual inspection for any issues that may disrupt traffic or cause a safety hazard	Muscle Creek Road Inspection	Site diary, including photos of any hazards or damage	Construction Manager (or delegate)
General compliance spot checks: • speed • haulage route use • parking on site and on Muscle Creek Road and Sandy Creek Road • covering of loads, • dust mitigation being implemented • cleanliness of roads and vehicles leaving site	Daily during routine site inspections	Visual inspections GPS data ¹	Southern Solar Farm and access	Site diary	Construction Manager (or delegate)

Note:

1. It is noted that not all vehicles will have GPS tracking, nor are they required to. The Construction Manager (or delegate) may request any data be provided for review purposes.

These records will be maintained internally. Where hazards or damage is observed, it will be reported to MSC as soon as practicable. Hazards or damage created by the Project will be rectified in accordance with the agreed Road Maintenance Plan per Section 7.2.

7.6 Monitoring

Traffic specific monitoring requirements are outlined in Table 7.4. Additional requirements and responsibilities relating more broadly to monitoring are documented in the EMS Section 7.4.

Table 7.4 Monitoring requirements

Type	Frequency	Standard	Location	Reporting	Responsibility
Heavy vehicle access monitoring	Per heavy vehicle	Visual inspection and recording of day, time in, time out, vehicle type, licence plate	Access points	Maintain register or run sheets	Construction manager (or delegate)

Type	Frequency	Standard	Location	Reporting	Responsibility
Heavy vehicle travel on Muscle Creek Road during School bus travel periods	Gate keeper records reviewed weekly	The gatekeeper will record vehicle entry and exit times, vehicle class (recorded as heavy vehicle (HV) or light vehicle (LV)), and vehicle registration number	Access points	Site entry register	Construction manager (or delegate)
Vehicle movement details	Gate keeper records reviewed weekly	The gatekeeper will record vehicle entry and exit times, vehicle class (recorded as HV or LV), whether carpooling is occurring (i.e. at least one passenger), whether any HV entering Muscle Creek Road exceeds 26 m, are spoil loads covered and vehicle registration number	Access points	Site entry register	Construction manager (or delegate)

Records of this monitoring will be maintained internally and can be provided to road authorities or DPHI upon request. External reporting will occur where a non-conformance occurs. Non-conformance reporting protocols are outlined in Section 7.7 of this Plan and Section 7.5 of the EMS.

7.7 Incident management

The Development Consent defines an incident as “an occurrence or set of circumstances that causes or threatens to cause material harm to the environment, and as a consequence of that environmental harm, may cause harm to the health and safety of human beings, and which may or may not be or cause a non-compliance.”

Material harm is defined by the Development Consent as “harm that:

- involves actual harm to the environment that may include (but not be limited to) a leak, spill, emission other escape or deposit of a substance, and as a consequence of that environmental harm (pollution), may cause harm to the health or safety of people, or
- results in actual loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).”

The immediate response to an incident will include:

- Stop work in the area and ensure personnel safety.
- Notify relevant personnel (Construction Manager/Operations Manager and Site Manager, Environmental Manager).

- Notify emergency services if required (to be undertaken by Site Manager/Operations Manager or delegate).
- Isolate the hazard where safe to do so (e.g. shut down plant, apply site controls to mitigate the risk of potential pollutants spreading).
- Site Manager/Operations Manager or delegate to report the incident to any regulatory authorities or asset owners as required (NSW EPA, council).
- Initiate any clean up to mitigate the risk of further impact to the environment.

The incident will be recorded in the Project incident register (or equivalent). The Site Manager/Operations Manager or delegate will investigate the incident, including the root cause, and corrective actions will be identified.

The investigation process would typically include:

- an analysis of the incident by the Site Manager/Operation Manager or delegate in more detail, with the aim of determining possible causes
- a site inspection by the Site Manager/Operation Manager or delegate
- advising relevant personnel of the problem
- identifying and agreeing on actions to resolve or mitigate the risk
- implementing actions to rectify or mitigate the risk
- processes to monitor and review effectiveness of actions and/or additional measures.

Any corrective actions will be added to the environmental corrective action register and will be assigned to the relevant Project team personnel for implementation and closeout. Actions will be assigned and implementation prioritised in a collaborative way by the Site Manager (or Operation Manager during operation) based on the environmental risk. Timeframes will be set to ensure any damage incurred is rectified and any chance of recurrence is eliminated as soon as practicable.

Following corrective action, the Site Manager (or Operation Manager during operation) or delegate will close out the incident, noting that additional obligations may be required following notification to the Planning Secretary (see Section 7.7.1). It should be noted that any incident investigation should assess the risk of future events and whether current controls are effective.

This section of the Plan aligns with Section 8 of the EMS.

7.7.1 Incident notification to the Planning Secretary

In accordance with CoA C10 of the Development Consent, OX2 will:

Notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including:

- a) Date, time and location.
- b) A brief description of what occurred and why it has been classified as an incident.
- c) A description of what immediate steps were taken in relation to the incident

- d) Identifying a contact person for further communication regarding the incident.

In accordance with CoA C11 OX2 will “provide the Department with a subsequent incident report in accordance with Appendix 6 (Incident Notification and Reporting Requirements).

Incident notification and reporting requirements are included in Appendix 6 of the Development Consent. Appendix 6 states:

Incident and Notification Requirements:

1. All incident notifications and reports must be submitted via the NSW planning portal (Major Projects).
2. The Applicant must provide notification as required under these requirements, even if the Applicant fails to give the notification required under condition C10 or, having given such notification, subsequently forms the view that an incident has not occurred.
3. Within 7 days (or as otherwise agreed by the Planning Secretary) of the Applicant making the immediate incident notification (in accordance with condition C10), the Applicant is required to submit a subsequent incident report that:
 - i. identifies how the incident was detected
 - ii. identifies when the Applicant became aware of the incident
 - iii. identifies any actual or potential non-compliance with conditions of consent
 - iv. identifies further action(s) that will be taken in relation to the incident
 - v. a summary of the incident
 - vi. outcomes of an incident investigation, including identification of the cause of the incident
 - vii. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence, including the period for implementing any corrective and/or preventative actions
 - viii. details of any communication with other stakeholders regarding the incident.
4. The Applicant must submit any further reports as directed by the Planning Secretary.”

OX2 will comply with CoA C10, CoA C11 and the requirements of Appendix 6 of the Development Consent.

Where an incident will impact upon a road authorities’ asset or the operation of a road, they will be informed as soon as practicable.

7.8 Non-compliances

A non-compliance is defined by the Development Consent as “an occurrence, set of circumstances or development that is a breach of the consent but is not an incident.”

Where a non-compliance (or potential non-compliance) is detected, an investigation will occur. Non-compliance may be detected through compliance tracking processes, audits, monitoring or other Project inspections. The investigation will be conducted by the Site Manager/Operations Manager or delegate.

The investigation process would typically include:

- an analysis of the potential non-compliance by the Site Manager/Operation Manager or delegate in more detail, with the aim of determining possible causes
- a site inspection by the Site Manager/Operation Manager or delegate (where relevant)
- a clear description of the non-conformance, and its actual/potential harm
- all personnel involved in the non-conformity, their organisation and contact details
- next steps, including the need for additional investigations and/or corrective actions
- contacting DPHI and relevant agencies to advise them of the non-conformity and outline corrective measures
- advising relevant personnel of the potential non-compliance
- identifying and agreeing on actions to resolve or mitigate the risk
- implementing actions to rectify or mitigate the risk
- processes to monitor and review effectiveness of actions and/or additional measures.

Any corrective actions will be added to the environmental corrective action register and will be assigned to the relevant Project Team personnel for implementation and closeout. Actions will be assigned and implementation prioritised in a collaborative way by the Site Manager (or Operation Manager during operation) based on the environmental risk. Timeframes will be set to ensure any damage incurred is rectified and any chance of recurrence is eliminated as soon as practicable.

Following corrective action, the Site Manager (or Operation Manager during operation) or delegate will close out the non-compliance, noting that additional obligations may be required following notification to the Planning Secretary (see Section 7.8.1). It should be noted that any non-compliance investigation should assess the risk of future events and whether current controls and/or practices are effective.

This section of the Plan aligns with Chapter 8 of the EMS.

Where a non-compliance will impact upon a road authorities' asset or the operation of a road, they will be informed as soon as practicable.

7.8.1 Non-compliance notification to the Planning Secretary

In accordance with CoA C12 of the Development Consent:

Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing and must be submitted via the NSW planning portal (Major Projects). The notification must identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply, the reasons for the non-compliance (if known), and what actions have been undertaken, or will be undertaken, and when, to address the non-compliance.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

OX2 will comply with CoA C12.

7.9 Auditing

Audits (both internal and independent) will be undertaken to assess the effectiveness of environmental controls, compliance with this Plan, CoA and other relevant approvals, licenses, and guidelines. These audits will be undertaken at planned intervals to provide information on whether the Project:

- is meeting its compliance obligations
- conforms to this Plan
- determines if this Plan is effectively implemented and maintained.

CoA C13 states:

Independent Environmental Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020) or as updated from time to time and published on the Department's website.

OX2 will engage an audit and will comply with the requirements of CoA C13.

The approach to internal and independent audits, including audit requirements and the auditing schedule, are detailed in Section 7.6 of the EMS.

7.10 Communication

All community feedback, enquiries, and complaints will be managed via the measures outlined in the EMS and the Community and Stakeholder Engagement Strategy.

The Community Manager (or delegate) will complete a site inspection and record observations and weather conditions in response to any community complaints associated with traffic management. Actions or rectification (if required) will be undertaken by the construction team as soon as reasonably practicable.

In accordance with CoA C14:

The Applicant must:

- a) make the following information publicly available on its website as relevant to the stage of the development:
 - i. the EIS
 - ii. the final layout plans for the development
 - iii. current statutory approvals for the development
 - iv. approved strategies, plans or programs required under the conditions of this consent (other than the Fire Safety Study and Emergency Plan)
 - v. the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged
 - vi. a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent
 - vii. how complaints about the development can be made

- viii. a complaints register
 - ix. compliance reports
 - x. any independent environmental audit, and the Applicant's response to the recommendations
 - xi. any other matter required by the Planning Secretary
- b) keep this information up to date.

In accordance with CoA C14(a)(iv) this Plan will be publicly available on the Project website at <https://www.muswellbrooksolarfarm.com/>.

OX2 will comply with CoA A14. In accordance with CoA C14(a)(iv) this Plan will be publicly available on the Project website at <https://www.muswellbrooksolarfarm.com/>.

For communication with nearby projects, such as the Muswellbrook Bypass, please refer to Section 6.19.

8 Review and improvement

Ongoing monitoring and review of the performance and implementation of this Plan will be undertaken as required. The review of this Plan will include:

- outcomes of investigations from incidents and/or complaints
- the continuing suitability of this Plan in relation to changing conditions and information
- feedback from external stakeholders, including regulators and landholders.

In accordance with CoA C2 of the Development Consent, OX2 will:

- (a) update the strategies, plans or programs required under this consent to the satisfaction of the Planning Secretary prior to carrying out any upgrading or decommissioning activities on site; and
- (b) review and, if necessary, revise the strategies, plans or programs required under this consent to the satisfaction of the Planning Secretary within 1 month of the:
 - (i) submission of an incident report under condition C10 of Schedule 2;
 - (ii) submission of an audit report under condition C13 of Schedule 2; or
 - (iii) any modification to the conditions of this consent.

A copy of the updated Plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure, as detailed in Section 7.8 of the EMS.

9 Driver's code of conduct

9.1 Purpose of the Code

The Driver's Code of Conduct (the Code) outlines procedures to ensure that truck drivers adhere to the designated transport routes and implement safe driving practices. A poster will be developed and displayed in relevant site spaces (e.g. crib room) visually displaying aspects of the Code – access map, behavioural rules, emergency contact hierarchy, etc.

It is a condition of employment and use of the facility that all employees, users and contractors are aware of the Code and that they drive responsibly and adhere to the Code. All drivers will be trained in the requirements of the Code and audits of the compliance with the Code will be regularly conducted. All drivers reported or found to be acting in a manner contrary to the Code will be subject to disciplinary action.

The goal of the Driver Code of Conduct is to promote responsible driver behaviour that supports compliance with the Project development consent and this TMP, while minimising impacts on the local community.

The key performance goals and targets are:

- no non-compliances
- no incidents
- no complaints.

9.2 General requirements

All drivers (heavy or light vehicles) accessing the site must:

- undertake a site induction carried out by an approved member of the site's staff or suitably qualified person under the direction of the site's management (except for deliveries by light vehicle)
- hold a valid driver's licence for the class of vehicle they are driving
- operate the vehicle in a safe and lawful manner within and external to the site
- adhere to designated transport routes
- not park on street, verges, or footpaths in the vicinity of the site or when accessing the site
- not load or unload from the public roadway when accessing the site
- comply with all directions of authorised site personnel when within the site.

9.3 Vehicle speed

The speed limit within the site will be restriction to 20 km/h to ensure safety.

Drivers are to observe the posted speed limits on all public roads with speed adjusted appropriately to suit the road environment and prevailing weather conditions, to comply with the Australian Road Rules. The vehicle speed must be appropriate to ensure the safe movements of the vehicle based on the vehicle configuration.

In addition, all drivers and truck operators working for or on behalf of OX2 are to be made aware of the Three Strikes Scheme (<https://www.aic.gov.au/sites/default/files/2020-05/tandi446.pdf>) introduced by the Australian government which applies to all vehicles over 4.5 tonnes. When a heavy vehicle is detected travelling at 15 km/h or more over the posted or relevant heavy vehicle speed limit by a mobile police unit or fixed speed camera, TfNSW will record a strike against that vehicle. If three strikes are recorded within a three-year period, TfNSW will act to suspend the registration of that vehicle (up to three months).

9.4 Heavy vehicle haulage route

All Project related heavy vehicles will follow the following routes:

- **New England Highway/Muscle Creek Road intersection:** vehicles will arrive and depart in any direction of New England Highway. All heavy vehicles will travel in accordance with the haulage route shown in Figure 1.1. The induction will inform staff of haulage routes.
- **OSOM vehicle:** the OSOM vehicle will arrive from Wilson Transformer Company located at Wheelers Hill, Victoria. The designated haulage route is: <https://maps.app.goo.gl/x5ZEpbBS4oBm4etew5>.

A figure showing the approved route will be provided in the induction and will be included in posters on site at locations to be determined by the Construction Manager. No OSOM vehicles requiring escort (i.e. high risk OSOM) will be permitted until Stage 1B following further consultation and update of this Plan.

No access or haulage will occur via Sandy Creek Road during Stage 1A.

It is noted that any delivery will occur in accordance with the construction hours specified in Section 5.2 and as scheduled by the Construction Manager as described in Section 6.4.

9.5 Heavy vehicle operation during school hours

As stated in Section 6.7, school buses operate on Muscle Creek Road during the NSW school terms. Heavy vehicles will not operate for the half hour period during school bus pick-up and drop off times as outlined in Section 6.7. This will be included in the site induction and Drivers Code of Conduct and will be enforced regularly.

Restrictions relating to construction traffic and school buses on Sandy Creek Road, as identified in Condition B1(b), will be addressed in subsequent revisions of this Plan prior to Stage 4A works commencing.

9.6 Driver fatigue

Fatigue is one of the biggest causes of crashes for heavy vehicle drivers. The National Heavy Vehicle Accreditation Scheme (<https://www.nhvr.gov.au/safety-accreditation-compliance/national-heavy-vehicle-accreditation-scheme>) allows heavy vehicle operators the choice of operating under three fatigue management schemes: Standard Hours of Operation; Basic Fatigue Management (BFM); and Advanced Fatigue Management (AFM). All heavy vehicle drivers operating at the site must be aware of their adopted fatigue management scheme and operate within its requirements.

Fatigue includes (but is not limited to):

- feeling sleepy
- feeling physically or mentally tired, weary or drowsy
- feeling exhausted or lacking energy
- behaving in a way consistent with any of the above.

Delivery drivers attending the site may be required to visit multiple sites. The responsibility for managing delivery driver fatigue would be maintained by the delivery company.

Fatigue in direct employees would be managed through rosters, site closure times and the provision of accommodation. Journey Management Plans would be in place to manage fatigue during travel to and from the site or accommodation. A fatigue management plan will be in place to manage fatigue in works on site and will include guidance on shift times (including any late start of travel days), site open times, practices to put in place where fatigue has been raised by an individual and escalation where workers are required to work extended hours. Structured work hours are the primary control that the site will implement. As fatigue is a personal experience and factors beyond the work environment may influence fatigue, self-monitoring would occur by all personal on-site. Training would be provided on signs of fatigue. Any individual may self-report fatigue to the Construction Manager who would implement the Fatigue Management Plan to assist the individual.

9.7 Heavy vehicle control

The following controls will apply to truck operators to minimise the impact of noise from truck transport:

- Compression brakes not to be used in the vicinity of residential areas.
- Tailgates must be locked and secured to avoid noise or spillage.
- Always observe the posted speed on site and the local road network.
- No tailgating is permitted – a 3 second gap is to be observed at all times.
- Equipment to be used must be fit for the purpose.
- Drivers to obey the operating hours outlined in Section 5.2.

The following will be adopted to avoid potential conflict between heavy and light vehicles:

- Separate entry lanes and parking areas will be maintained for HVs and LVs.
- Where HVs and LVs share internal haul roads, traffic spotters will be deployed during peak times.
- Signage: “Heavy Vehicle Priority – Proceed with Caution” will be installed at shared crossings.

9.8 Load covering

Condition B20 of the Development Consent states:

The Applicant must minimise the dust generated by the development, including measures ensuring:

- (a) activities are carried out on site in a manner that minimises dust generation, including emission of windblown and/or traffic generated dust;
- (b) development-related vehicles leaving the site:
 - i. have any loads covered; and
 - ii. minimise dirt being tracked onto the public road network; and
- (c) water is sprayed on unsealed roads within the site when practicable and appropriate.

Loose material on the road surface has the potential to cause road crashes and vehicle damage. Vehicles transporting loose or friable materials to or from the site must ensure these loads are effectively covered for the duration of travel on public roads to prevent material escaping or falling from the vehicle. The load cover may be removed upon arrival at the delivery site. There may be some instances where loads are not covered (e.g. plant and equipment, materials that are not at risk of spilling and causing safety or environmental issues, infrastructure delivery). All care is to be taken to ensure that all loose debris from the vehicle body and wheels is removed prior to leaving the site and again after unloading.

Drivers must ensure that the tailgate is locked before leaving the site. Site management is to monitor loose material on the side of the vehicle route from facility operations and take appropriate action (removal or suppression) regularly.

9.9 Cleanliness

All loaded vehicles are to be inspected prior to leaving the site for cleanliness. Any materials that could fall on the road should be removed prior to leaving the site. It is noted that all outgoing vehicles will traverse through a wheel wash to ensure contaminants are contained on-site.

9.10 Acting to minimising impacts

All staff, contractors and delivery drivers travelling to or from the Project must operate vehicles in a lawful, safe and courteous manner, with due consideration for other road users and the surrounding community. Personnel attending the Project represent the Project and are expected to minimise potential traffic and safety impacts wherever reasonably practicable.

Staff are encouraged to carpool where practicable to reduce overall traffic volumes and minimise on-site parking demand. Carpooling arrangements may be made between individuals where convenient.

Where shuttle bus services are implemented under a future revision of this TMP, personnel may be required to access the site via the shuttle bus where directed by the Site Manager, Construction Manager or their delegate. Exemptions may apply where personnel are required to transport tools, equipment or materials, or where otherwise approved by the management team.

Drivers must also:

- comply with the approved haulage routes and site access arrangements identified in this TMP
- comply with directions issued by traffic controllers, escort vehicles, and any safe and reasonable request from the Site Manager, Construction Manager or their delegate in relation to traffic and access management
- comply with all measures in this TMP, as covered in inductions, tool-box talks or other training material.

9.11 Breakdown and incidents

In the case of a breakdown, the vehicle must be towed to the nearest breakdown point as soon as possible. All breakdowns must be reported to the Site Manager and the vehicle protected in accordance with the [Heavy Vehicle Drivers Handbook](#).

Emergency contact details have been provided in Table 9.1.

Table 9.1 **Emergency contact details**

Organisation	Contact details
TfNSW Transport Management Centre	131 700
Muswellbrook Shire Council	(02) 6549 3700
Muswellbrook Police Station	(02) 6542 6999
Site Construction Manager	1800 116 155

9.12 Complaint management

Respectful, efficient and effective complaints management is key in maintaining positive relations with local residents/businesses for the site. The detail of the Project complaints management system is set out in OX2's Project 'Complaint Investigation and Response Plan'.

Part of wider community engagement, the Project aims to identify and minimise potential complaints in advance and to robustly manage those received. Robust monitoring of environmental performance, and being able to demonstrate this is a key factor in being able to provide strong responses to any complaints.

9.13 Registering complaints

Complaints may be made to the free call number (1800 116 155), by email (Info-au@ox2.com) or via the Project website ([Muswellbrook Solar Farm - OX2](#)). These details will be provided on a sign at the site entrance and included in community notifications.

9.14 Complaint response during construction

Any complaints about traffic, will be dealt with in line with the measures outlined in the EMS and Community and Stakeholder Engagement Strategy.

It is noted that traffic related complaints may occur on-site (by other stakeholders) or off-site.

9.15 Review and improvement

The managerial roles at the site will periodically review truck movements and compliance with the Code. Any complaints or non-compliances found with the Code will trigger a review of the Code and additional training requirements or removal from site/employment on the Project.

The details of any complaint will be logged in the complaints register, with investigation findings and actions noted.

Complaint records will be maintained for the duration of Project construction.

Should the complaint be relevant to any of the conditions of the Approval, it will be handled as per the Approval conditions relevant to that environmental aspect.

Appendix A

Flood emergency response plan

A.1 Introduction

A.1.1 Scope of this plan

This Flood Emergency Response Plan (FERP) has been prepared in accordance with the NSW Floodplain Risk Management Manual (DPHI 2023). It sets out strategies to protect life, property, and infrastructure at the Muswellbrook Solar Farm from flood risks associated with Muscle Creek, Sandy Creek, and the Hunter River floodplain.

The specific objectives of the FERP are to:

- address conditions that require a flood response plan to be prepared
- define flood emergency response categories applicable to the site in line with DPHI (2023)
- establish clear response actions for different flood severity levels
- detailing procedures and options for safe access to and from site in the event of flooding
- ensure evacuation and refuge strategies are consistent with NSW SES emergency management arrangements
- provide an operational framework for safe, efficient, and coordinated flood response.

It is noted that this FERP includes a response to flooding at the northern solar farm. No work will occur in this area during Stages 1 to 3 of the Project. Inclusion of the flood response for the northern solar farm has been included to provide an overview of flooding within the area and is for information only. Flood response information relating to the northern solar farm will be reviewed and updated as necessary prior to the commencement of Stage 4A. For clarity, any flood warning or impact mitigation controls, such as flood markers, signage, etc, associated with the northern solar farm and any egress route, shelter in place location or emergency assembly point associated with the northern solar farm would not be established until Stage 4A works commence.

A.2 Description of development

The Muswellbrook Solar Farm is a large-scale photovoltaic generation facility located on Wonnarua Country in the Hunter Region of NSW, within the Muswellbrook and Muscle Creek localities of the Muswellbrook Shire Council. The Project site lies approximately 2.5 km east of Muswellbrook township and has been strategically positioned within the Hunter-Central Coast REZ to repurpose buffer lands associated with the Muswellbrook Coal Mine. The Proponent, ESCO Solar Farm 9 Pty Ltd as trustee for the ESCO Solar Farm 9 Trust (a wholly owned subsidiary of OX2 Holdings Pty Ltd). From here on the proponent is referred to as OX2. The site is traversed by existing 132 kV and 330 kV transmission lines, minimising the need for new grid infrastructure, and will contribute significant renewable energy capacity to the NSW electricity grid. Classified as a State Significant Development (SSD) under the EP&A Act, the Project was referred to the Independent Planning Commission and granted consent in May 2025 (SSD 46543209). It was also assessed as a controlled action under the Commonwealth EPBC Act, with approval provided by the Minister for the Environment and Water in August 2025.

i Catchment and waterways

The Muswellbrook Solar Farm is located within the Sandy Creek and Muscle Creek catchments, which are both ephemeral tributaries of the Hunter River. The Hunter River is the region's dominant waterway, draining more than 3,300 km² at Muswellbrook and over 4,500 km² at Denman before joining the Goulburn River. Within the site, Muscle Creek is a fifth-order stream and Sandy Creek is a sixth-order stream, each with multiple tributaries, though no direct stream gauging data exists for them. A tributary of Muscle Creek runs through the southern Project area, mapped as a gravel-bed channel in moderate condition but with high recovery potential, while a tributary of Sandy Creek in the north has been altered by a clean water diversion, leaving its lower reaches in poor but moderately recoverable condition. Hydrology is further influenced by the Muswellbrook Coal Mine, where Pit 1 and associated dams intercept runoff; mine closure may result in an additional 28 hectares of catchment area that will contribute flow to Muscle Creek. Overall, the Project site is shaped by a combination of regional flooding from the Hunter River, intermediate tributary processes, and local geomorphic variability in smaller watercourses.

ii Topography

The topography of the Muswellbrook Solar Farm site is characterised by gently undulating landforms with well-defined drainage lines that direct overland flows towards Muscle Creek, Sandy Creek, and ultimately the Hunter River floodplain. At the regional scale, the catchment is shaped by the Great Dividing Range, Liverpool Range, and Mount Royal Range, which funnel runoff into the Hunter River system. To accurately represent the terrain, the Project's flood modelling used high-resolution Digital Elevation Models (DEMs) derived from LiDAR surveys collected between 2017 and 2024, at resolutions of 1 to 2 m. These datasets provided a detailed three-dimensional surface of the land, allowing flood modelling to simulate water movement across both natural drainage features and the reshaped post-mining landform of Muswellbrook Coal Mine Pit 1.

iii Rainfall and climate

The Muswellbrook region receives 620 to 670 mm of annual rainfall, with February being the wettest month and August the driest. Rainfall occurs on about 109 days per year, often as light events. Summers are hot (January maxima ~31.8°C), while winters are mild with cold nights (July minima 3 to 5°C).

Rainfall in the Upper Hunter Valley comes from both long-duration events and short, intense storms, each influencing flood risk differently. The Hunter River floods mainly after prolonged rainfall, while Muscle Creek (92 km² catchment) can flood from both prolonged and short intense events, leading to flash flooding.

A.3 Flood response procedure for safe access

Flood response operations will commence upon notification from the State Emergency Service (SES), Bureau of Meteorology (BoM), or when on-site evidence indicates a high likelihood of flooding. Triggers include forecast rainfall exceeding 100 mm within 24 hours, or cumulative totals of more than 100 mm over a one-week period when further rainfall is predicted. Based on the rainfall intensities applied in the updated Muswellbrook Solar Farm flood modelling (BMT 2025), events producing 80 to 100 mm of rainfall over critical durations of 2 to 12 hours align with approximately 1 to 5% AEP events, equating to floods with a likelihood of occurring once in 20 to 100 years. Rainfall of this magnitude is expected to generate moderate to major flood levels across the Project area, particularly in the Muscle Creek catchment, where flash flooding and high-velocity flows present the greatest hazard to infrastructure and access.

In the event a flood warning is issued, it will be communicated to the workforce to stop what they are doing and follow the Flood Emergency Response Plan. The BoM will issue Flood Warnings prior to flooding for the Hunter River catchment through their website. BoM also issue Severe Thunderstorm Warnings and Severe Weather Warnings for weather which may contribute to flooding in the catchment. The SES will issue notification and information for the Muswellbrook area once a flood is declared.

The SES is the designated Agency for floods and is responsible for coordinating the evacuation and welfare of affected communities (SES Act 1989; EMPLAN 2018). In response to a flood event, SES will operate 24 hours a day, 7 days a week “Operations Centre” to manage the Emergency Assistance telephone number (132 500) and co-ordinate their activities. The SES provides public information management strategies and provides information to the community relating to the potential impacts of flooding and what actions need to be undertaken. The SES issue Local Flood Bulletins, Evacuation Warnings, Evacuation Orders and All Clears for areas impacted by floods in the catchment and share these on the SES website. The SES website will also be monitored by OX2 following flood warnings.

Local radio stations and other media outlets also provide information updates and advice.

i [Site access](#)

a [Southern site access](#)

The existing southern site access is located on [Muscle Creek Road, Muscle Creek](#) (Photograph A.1).



Photograph A.1 [Southern site access](#)

ii [Site establishment](#)

Upon site establishment, the following will occur:

- Evacuation signage will be installed along all designated routes, and maps of access and assembly points will be included in the site Emergency Management Plan and displayed on-site for all personnel to see.
- Flood depth markers will be installed at all water crossing points within the Project site.

- Site maps will be installed at prominent locations (such as site facilities) and will detail the current location of the person reading the map, emergency access routes and areas of refuge.

The above measures would be communicated during the site induction.

iii Procedure

Flood access response procedures will be initiated under any of the following conditions:

- Daily monitoring of weather forecasts and flood alerts, using the BoM (<http://www.bom.gov.au/australia/warnings/>). A "Flood Watch" is typically issued typically four days before flood events. The BoM/SES classifies minor, moderate and major (as defined by BoM). At the Muswellbrook gauge, BoM provides a 4-hour target warning lead time of 4 hours for a Minor flood event and a 12-hour warning lead time for a Major flood event.
- Flood watch and flood warning notifications and water level trigger alerts shall be set-up on mobile phones of key personnel including the Site Manager and Construction Manager (during construction) and Operations Manager and Operation Supervisor (during operations) using the WaterLive App. Information will be provided via this application using the real time monitoring unit within Muswellbrook (APLOC 1859).
- Information on flood response measures and emergency response will be provided during the induction process.

Prior to flooding, the Construction Manager/Operations Supervisor will actively monitor BoM forecasts, WaterNSW live gauges, and site rainfall records. If thresholds are expected to be exceeded, non-essential activities will be suspended, mobile equipment relocated to higher ground, and early evacuation of staff will be arranged before road access is compromised. This is critical because flood modelling shows that internal access tracks can be inundated in relatively frequent floods (5% AEP).

During flood evacuation or emergency events, all site personnel, contractors, and visitors shall proceed immediately to the designated emergency assembly point. The Site Supervisor will perform a roll-call using the latest attendance register.

Any missing persons will be reported to the Chief Emergency Warden immediately and a search will be initiated if safe to do so.

During a flood event, no attempt will be made to cross flood-affected roads. All vehicle movement will cease once water begins to encroach on access routes, as flows associated with Muscle Creek can reach hazard classifications of H3–H4, unsafe for vehicles and people.

Re-entry to the site will only occur once the SES or Construction Manager/Operations Supervisor confirms that roads and culverts are safe. After waters recede, engineering inspections will be carried out on access roads, drainage structures, and swales to identify scour, blockage, or structural damage. Only once repairs or maintenance are completed, will normal site access resume. All flood events will be logged, with rainfall totals, road performance, and decision timings recorded to refine the procedure. The flood response plan detailing safe access to and from site in the event of flooding is shown in Figure A.1 and Figure A.2.

A.4 Emergency response procedure in case of flood

In the event of a flood the following steps will be undertaken:

- The Construction Manager/Operations Supervisor will assess the potential risk based on the information at hand – seeking further information from emergency services as required.
- Shut down operations in flood-prone areas and secure hazardous materials.

- Construction Manager/Operations Supervisor to coordinate closure of Project site to external visitors and will order the evacuation of non-critical personnel (those that cannot assist with site preparation).

A.4.1 Evacuation

In the event of flooding, safe evacuation of personnel is the primary objective. The following emergency exit routes will be used:

- Primary Route: Muscle Creek Road on the south side – head towards the New England Highway and seek higher ground, following the direction of emergency services. Where flood waters are observed to be over-topping roadways on the egress route, do not cross the flood waters, return to the site and seek higher ground.
- Secondary Route: Sandy Creek Road on the north side – head towards the New England Highway and seek higher ground, following the direction of emergency services. Where flood waters are observed to be over-topping roadways on the egress route, do not cross the flood waters, return to the site and seek higher ground.

A.4.2 Site preparation

When it is safe to do so, the following will occur:

- Mobile construction equipment, excess material, skips and hazardous substances will be removed from the flood prone area to areas of higher ground.
- Power will be turned off until such a time that it is deemed safe to turn it back on.
- Site toilets and septic tanks to be pumped out into tankers.
- Loose materials to be moved out of flood prone area or secured.
- Emergency erosion and sediment controls will be implemented. This may include temporary bunds to divert water around key areas such as stockpiles and reduce risk to surrounding properties which might otherwise be affected.

Once complete, those undertaking site preparation works are to evacuate site once given the all-clear from the Construction Manager/Operations Supervisor.

A.4.3 During a flood event

Where flooding has occurred prior to full evacuation and where it is not safe to evacuate the site via Muscle Creek Road, the Construction Manager/Operations Supervisor will notify all site personnel to 'shelter in place' at the emergency assembly point as shown in Figure A.1 and Figure A.2 until evacuation overland can be organised.. The Construction Manager/Operations Supervisor to instruct all site personnel to not attempt to enter or drive through any flood waters. The Construction Manager/Operations Supervisor would contact emergency services.

On arrival of the attending Emergency Services (if requested), the Construction Manager/Operations Supervisor will:

- hand over control to the Emergency Service Incident Controller (ESIC)
- brief the ESIC of the emergency (i.e. type and location)

- provide the status on the evacuation (if evacuation required), details of any unaccounted-for personnel/visitors, and any other relevant information.

During the flood emergency, the Construction Manager/Operations Supervisor will:

- monitor the BoM website for warnings, Australian Broadcasting Corporation radio broadcasts, local emergency services social media pages, and local news outlets
- follow all advice and instructions given by emergency services, as required
- ensure all occupants on-site are informed of the 'shelter in place' approach and not to attempt evacuation from site until it is safe to do so.

A.4.4 Post flood event

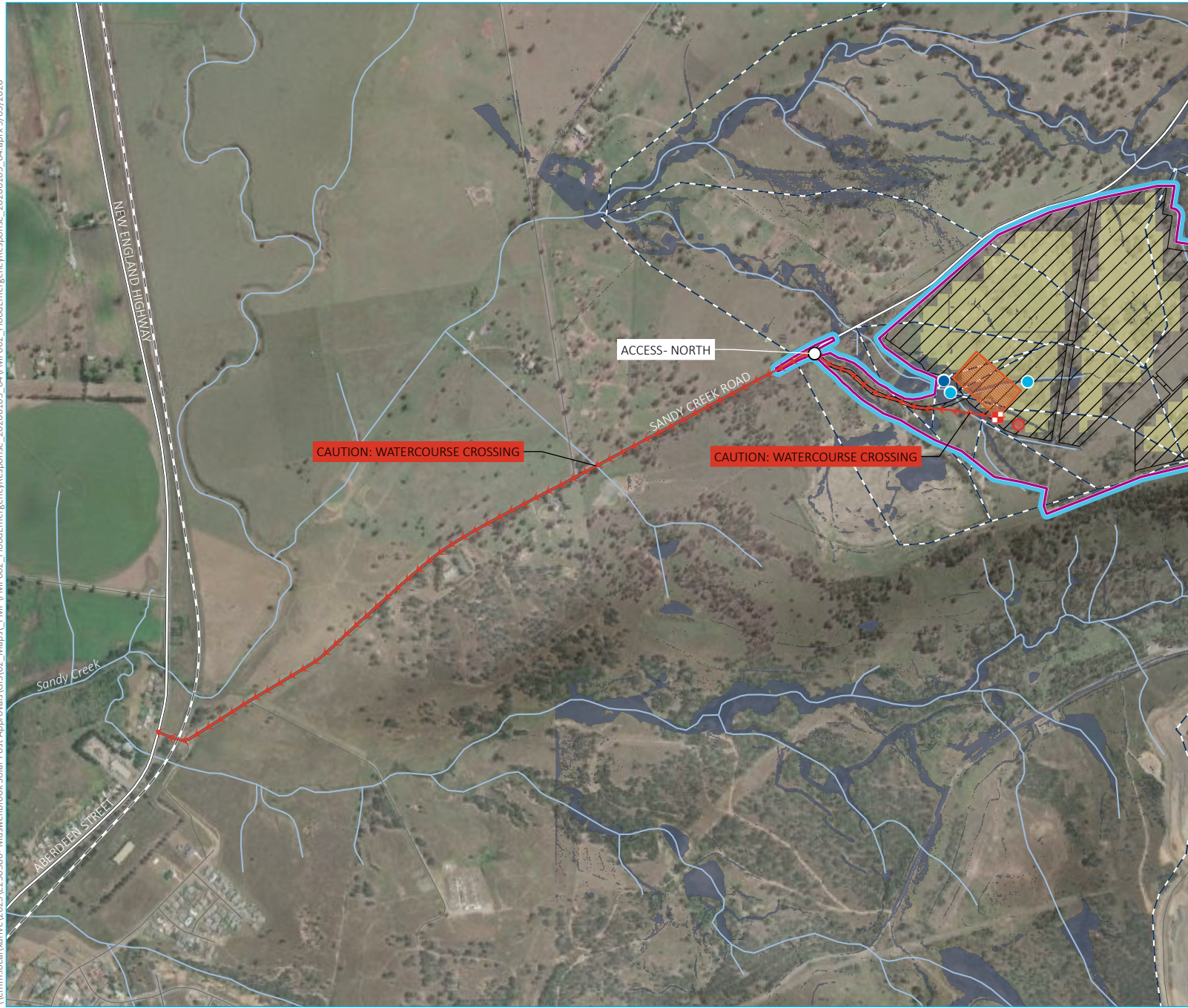
When the ESIC terminates the emergency:

- the ESIC will return control to the Construction Manager/Operations Supervisor
- the Construction Manager/Operations Supervisor will advise personnel in the affected area(s) that the emergency has been terminated and the all-clear has been given.

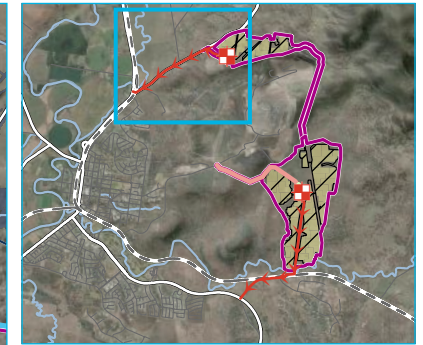
Following the flooding event, a safety walk will be conducted by Construction Manager/Operations Supervisor to determine whether or not it is safe to return to work and restore/repair flood damage, as required. This will include an electrician checking any inundated or water affected power boxes or electrical equipment. The power is to remain off until assessed by the electrician.

Personnel to return to their work area and resume work activities if safe to do so. If resumption of work activities is not appropriate, then the Construction Manager/Operations Supervisor will determine whether personnel should depart site.

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Source: EMM (2025); ESCO Pacific (2024); DCSSS (2024); ESRI (2025)



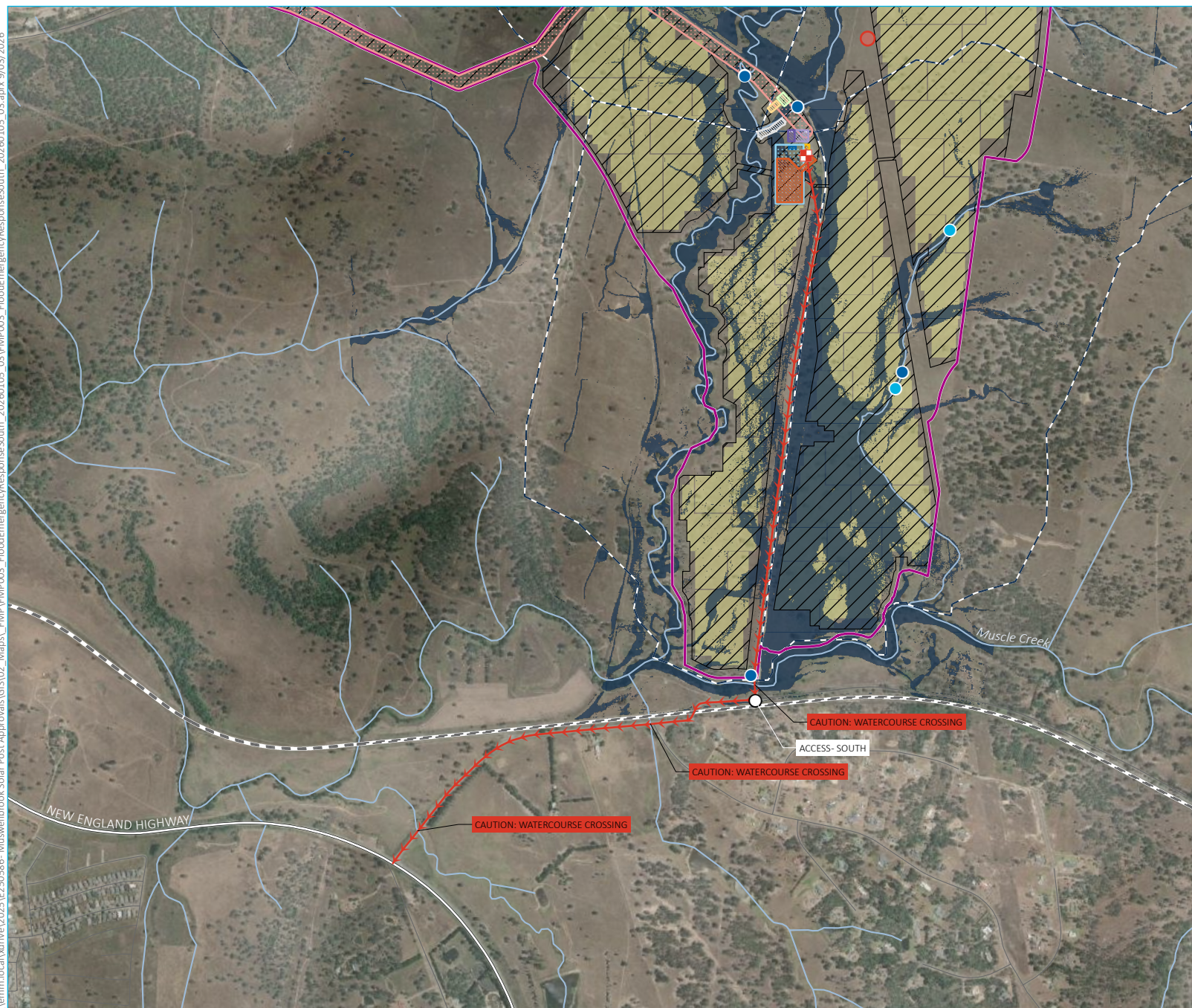
KEY

- Project area
- Development footprint
- Watercourse crossing
- Site access
- Flood level marker
- Emergency assembly point
- Site egress
- Area of refuge
- Asset protection zone
- Watercourse sub-catchment boundary
- 1% AEP flood extent
- Site element
- Laydown
- Indicative panel layout
- Existing environment
- Rail line
- Major road
- Minor road
- Watercourse/drainage line

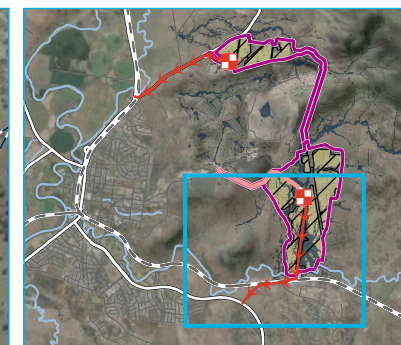
Flood Emergency Response Plan- North

Muswellbrook Solar Farm
Flood Management Plan
Figure A.1

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Source: EMM (2025); ESCO Pacific (2024); DCSSS (2024); ESRI (2025)



- KEY**
- Project area
 - Development footprint
 - Watercourse crossing
 - Site access
 - Flood level marker
 - Emergency assembly point
 - Site egress
 - Area of refuge
 - Watercourse sub-catchment boundary
 - 1% AEP flood extent
 - Site element
 - BESS (Battery Energy Storage System)
 - BESS Collection Station
 - Car Park
 - 132 kV connection to 95M buffer
 - Laydown
 - O&M
 - SF Collection Station
 - Switchyard
 - Transformer Substation
 - Indicative panel layout
 - Existing environment
 - Rail line
 - Major road
 - Minor road
 - Watercourse/drainage line

Flood Emergency Response Plan- South

Muswellbrook Solar Farm
Flood Management Plan
Figure A.2



Australia

SYDNEY

Level 10 201 Pacific Highway
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE

Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE

Level 2, 95 North Quay
Brisbane QLD 4000
T 07 3648 1200

CANBERRA

Suite 2.04 Level 2
15 London Circuit
Canberra City ACT 2601

ADELAIDE

Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Suite 9.01 Level 9
454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH

Suite 3.03
111 St Georges Terrace
Perth WA 6000
T 08 6430 4800

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TORONTO

2345 Yonge Street Suite 300
Toronto ON M4P 2E5
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2015 Main Street
Vancouver BC V5T 3C2
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700 2nd Street SW Floor 19
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