

Operational Traffic Management Plan

Eraring Power Station MOD 2 Ash Recycling

25-Nov-2022

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Quality Information

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1.0 Introduction

1.1 Background

Origin Energy Pty Ltd (Origin) owns and operates Eraring Power Station (EPS) on Rocky Point Road within the Lake Macquarie local government area (LGA). Ash generated at EPS is either deposited onsite within the Eraring Ash Dam (ERAD) or recycled offsite (e.g. as a construction material resource).

Origin's ash recycling activities at EPS are undertaken in accordance with Project Approval MP07_0084. Condition 4A.1 of MP07_0084 includes a mandatory goal of 80% reuse or recycling of ash from EPS. On 21 June 2022, Origin received approval to modify MP07_0084 (MOD 2) to increase the ash recycling capacity at EPS. The MOD 2 project will involve an increase in truck movements accessing and egressing the EPS site to transport ash to a range of end user destinations.

Condition 4.10 of MP07_0084 requires preparation and implementation of an Operational Traffic Management Plan (OTMP) for the road haulage associated with the MOD 2 project. This OTMP has been prepared in accordance with these requirements (refer to **Section 1.4**).

1.2 Scope of the OTMP

This OTMP covers the ash haulage associated with the MOD 2 project, which includes the transport of ash from the following operational elements of the EPS site:

- Coal Combustion Product (CCP) Plant
- Daracon ash recycling facility
- Boral storage silos (not yet constructed – to be constructed as part of a future stage of the project).

There are existing ash recycling activities undertaken on the EPS site that are not covered under the MOD 2 project. This includes the Boral Bottom Ash Reclamation Area which is an existing activity operating under MP07_0084 and the Flyash Australia facility which operates under a separate local Development Consent DA/684/2009 issued by Lake Macquarie City Council (LMCC). Ash transport associated with these existing ash recycling activities is not within the scope of this OTMP.

Origin also implements the *Eraring Power Station Traffic Management Plan* (EPS-HSE-PLN-018) (hereafter referred to as the EPS TMP) which covers vehicle movements within the EPS site. Potential cumulative impacts with other EPS-related traffic would be managed through the EPS TMP and careful scheduling of vehicle movements and deliveries. Cumulative management issues are further discussed in **Section 2.0**.

1.3 Objectives of the OTMP

The objectives of the OTMP are to:

- detail the haulage routes for heavy vehicles transporting ash from EPS associated with the MOD 2 project
- specify the management measures that will be implemented, including a Driver Code of Conduct, to minimise potential impacts to the local community and road users along the haulage routes
- describe the monitoring that will be undertaken to assess compliance with this OTMP
- identify the reporting requirements as relevant to this OTMP.

1.4 Project Approval Requirements

Condition 4.10 of MP07_0084 requires the preparation and implementation of an OTMP to the satisfaction of the Planning Secretary. DPE has endorsed the appointment of AECOM personnel as suitably qualified and experienced to prepare this OTMP (DPE correspondence dated 25 July 2022).

A copy of this OTMP was issued to Transport for NSW (TfNSW) and LMCC for their review and comment. These agencies did not raise any specific issues requiring amendment of this report (as per correspondence from TfNSW dated 7 November 2022 and correspondence from LMCC dated 24 November 2022).

The requirements of condition 4.10 of MP07_0084 are provided in **Table 1**, along with a reference to the section of the OTMP where the requirements have been addressed.

Table 1 Requirements of Condition 4.10 of MP07_0084

Condition Requirement	OTMP Section
<i>4.10. The Applicant must prepare an Operational Traffic Management Plan to the satisfaction of the Planning Secretary prior to commencing road haulage associated with MOD 2. The Plan must:</i>	This document
<i>a. be prepared by suitably qualified and experienced person/s;</i>	Quality Information and Section 1.4
<i>b. be prepared in consultation with the TfNSW and Council;</i>	Section 1.4
<i>c. include details of traffic routes for heavy vehicles, including any necessary route or timing restriction for heavy or oversized loads associated in particular with bridge upgrades on Wilton Road;</i>	Section 3.0
<i>d. include detailed measures to minimise impacts on traffic performance, road safety and noise amenity along the heavy vehicle routes, including specific measures to minimise traffic volumes:</i> <ul style="list-style-type: none"> - through the Morisset town centre (Dora Street) between 4 pm and 6 pm; - during the night time period 10 pm and 7 am; 	Section 4.0
<i>e. include detailed measures to manage potential cumulative traffic impacts, including other projects undertaken at Eraring Power Station;</i>	Section 2.1 and 4.0
<i>f. include processes to demonstrate compliance with statutory requirements for road traffic impacts;</i>	Section 5.0 and 6.0
<i>g. include a Driver Code of Conduct including:</i> <ul style="list-style-type: none"> - initiatives for haulage through residential areas and/or school zones; - an induction process for vehicle operators and regular toolbox meetings including education regarding access routes and measures to avoid platooning; - a public complaint management and disciplinary procedure; and - protocols for noise minimisation. 	Section 4.0 and 6.0

1.5 Relevant Legislation

Ash haulage for the MOD 2 project will be undertaken in a manner consistent with the legislative requirements set out in the following:

- *Roads Act 1993* and its regulations
- *Roads Transport Act 2013* and its regulations
- Road Rules 2014.

1.6 Related Reports and Plans

Origin also implements the EPS TMP which covers vehicle movements within the EPS site. The EPS TMP is intended to provide all EPS personnel and contractors with an understanding of the traffic movements and requirements at EPS and aims to:

- facilitate safe movement of vehicles on the site
- facilitate safe pedestrian access to and from work areas and amenities
- prevent unauthorised vehicle access to identified areas of the site
- clarify designated traffic routes on-site and speed limits.

This OTMP should be read in conjunction with the EPS TMP. The OTMP is consistent with the EPS TMP and drivers will need to comply with the requirements of both documents.

2.0 Project Context

2.1 Other Traffic-Generating Projects at EPS

This OTMP includes control measures to manage the potential cumulative traffic impacts related to other projects undertaken at the EPS site. Other relevant projects at EPS that may generate additional traffic are described in the subsections below. Management measures to minimise potential cumulative traffic impacts are provided in **Section 4.0**.

2.1.1 Ash Dam Augmentation Project - MP07_0084 (MOD 1)

Modification to MP07_0084 was approved on 23 December 2019 for the Ash Dam Augmentation Project (MP07_0084 MOD 1). Potential traffic impacts associated with the MOD 1 project were assessed within the Environmental Assessment (EA) prepared for the project (AECOM, 2018).

Construction of the MOD 1 project may commence in 2023 and is expected to take approximately three months. The EA originally estimated construction may generate up to 50 trucks per week, or approximately 10 trucks per day, for the transport of fill material and cement. However, the MOD 1 project has since been revised and construction of the western saddle embankment is no longer proposed. As such, the transport of fill material will not be required during construction of the MOD 1 project and construction truck movements will be much lower than originally estimated.

Construction vehicle movements generated by the MOD 1 project will therefore relate to the transport of minor quantities of construction materials / wastes to and from the EPS site and light vehicles for construction employees travelling to the EPS site. These vehicle movements are expected to be minimal (AECOM, 2018).

2.1.2 Battery Energy Storage System

In May 2022, Origin received planning approval (SSD 15950052) for the development of a standalone 700 megawatt Battery Energy Storage System (BESS) and ancillary infrastructure. The BESS will be located within the southeast portion of the EPS site, primarily to the south of Rocky Point Road. Potential traffic impacts associated with the BESS project were assessed within the Environmental Impact Statement (EIS) prepared for the project (Jacobs, 2021).

Construction of the BESS is expected to commence in late 2022 or early 2023 and will be staged over a period of up to five years. Construction traffic will be generated for the transportation of personnel, plant, equipment and materials and is expected to include:

- 128 two-way light vehicle movements per day (i.e. 128 inbound and 128 outbound)
- 60 two-way heavy vehicle movements per day (i.e. 60 inbound and 60 outbound)
- Five one-way oversized vehicle movements.

Once operational, the BESS project will generate minimal vehicle movements and is unlikely to contribute to cumulative traffic impacts.

2.1.3 Main Embankment Stability Project

The Main Embankment Stability Project will be undertaken in accordance with the *Eraring Power Station Act 1981* and aims to ensure the integrity of the main embankment of the ash dam. Construction is planned to commence in Q1 2023 and will continue until Q4 2024 in various stages. A project trial is planned to occur in late 2022 which will see small volumes of equipment and material transported to site.

Traffic generated during construction of this project includes delivery of site compound facilities, plant and equipment (e.g. drill / compaction rig transported to site, remaining onsite until demobilisation). The construction workforce will include up to 40 personnel, including earthmoving operators who already operate at EPS on various other projects onsite.

Truck movements will be required for the transport of raw materials. A borrow pit will operate within the EPS site to provide up to 300,000m³ of fill material. These truck movements would be contained on site and would not contribute to cumulative traffic impacts external to the EPS site.

The project will also require up to 145,000 tonnes of stone to be transport to site from an off-site quarry. Based on a truck capacity of 32 tonnes per load, this would generate additional construction traffic of approximately 4,530 trucks over the two year construction period, equating to an average of approximately 44 trucks per week or 7 trucks per day.

Onsite truck movements will be managed in accordance with the site-wide EPS TMP (EPS-HSE-PLN-018). A project-specific TMP will be developed to describe traffic management during the Main Embankment Stability Project and will include detailed measures to manage potential cumulative traffic impacts.

2.1.4 Planned Unit Outage

Origin undertakes planned unit outages to allow for the upgrade and maintenance of the EPS generating units. These planned unit outages require an increase in personnel travelling to and from the EPS site. Typically, planned unit outages require an increase of up to 400 – 600 personnel over the course of the outage. The additional personnel are required across various activities (deliveries, cranes, maintenance work, shutdown work etc) and varies depending on the day to day scheduling of works. The majority of the works are undertaken during the day shift, however some outages may require personnel during both day and night shifts.

Planned unit outages will be managed in accordance with existing procedures. Traffic management will be considered in major project risk assessments to determine if additional traffic control needs to be documented. Personnel would park within designated car parks at EPS. On-site vehicle movements would be managed in accordance with the site-wide EPS TMP (EPS-HSE-PLN-018).

2.2 Forecast MOD 2 Truck Movements

MP07_0084 does not specify a limit on truck movements associated with ash recycling and historically truck movements have only been limited by the approved capacity of ash recycling infrastructure at EPS.

The Modification Report (AECOM, 2021) for the MOD 2 project assessed potential traffic impacts based on the cumulative traffic movements associated with all ash recycling operations at EPS. The cumulative traffic movements were estimated to include 411 daily truck movements, consisting of 188 daily truck movements that were already occurring plus an additional 223 daily truck movements generated by the MOD 2 project.

Additional information was subsequently provided to DPE (RFI 3 – correspondence from Origin dated 11 May 2022) to clarify the traffic volumes assessed in the Modification Report (AECOM, 2021). The additional information clarified that the estimate of existing daily truck movements was based on historical ash recycling rates (which have typically been much lower than the approved ash recycling capacity), rather than the maximum approved ash recycling capacity at EPS.

An estimate of existing truck movements based on the maximum approved ash recycling capacity across the EPS operations is approximately 347 daily truck movements. The forecast cumulative traffic movements of 411 daily truck movements would therefore consist of 347 existing approved daily truck movements and an additional 64 daily truck movements generated by the MOD 2 project.

3.0 Haulage Routes

3.1 Site Access

Site access for ash haulage trucks will be via an entry point on Construction Road, which is an internal EPS road via Rocky Point Road. The Construction Road gate is controlled by vehicle boom gates and sliding gate. Authorised access is provided via either site security access card or by contacting security staff via the intercom systems available.

3.2 Approved Haulage Routes

Construction Road is accessed via Rocky Point Road and Wangi Road from the north or south. Approved heavy vehicle haulage routes to the north and south of the EPS site are described in the subsections below and shown in **Figure 1** to **Figure 3**. A small portion of heavy vehicles that are accessing ash markets in the Lake Macquarie and Newcastle regions may utilise local roads via Wangi Road instead of travelling through to the M1 motorway. However, the extent of local trips is expected to be low and the majority of ash haulage trucks would travel via the routes described below.

3.2.1 Route 1: Access Route from the North (Pre-Bridge Construction)

LMCC is planning to replace the existing timber bridge on Wilton Road. Works commenced in July 2022 and are expected to be completed by the end of 2022. LMCC has installed a load limit (gross load limit of 40 tonnes), traffic control and detour signage to protect the existing structure. As such, heavy vehicles exceeding the 40 tonne load limit (and all vehicles in the event of a full bridge closure on Wilton Road) will travel via Route 1 prior to and during the bridge replacement works.

Route 1 is shown in **Figure 1**. Heavy vehicles accessing the EPS site from the north will travel from the M1 motorway at Ryhope, through the townships of Awaba and Toronto via Awaba Road, Wangi Road and Rocky Point Road to reach Construction Road. The posted speed limit is 60km/h, with the exception of a 40km/h school zone for Toronto High School and an 80km/h westbound, short section of the road connecting to Cessnock Road.

3.2.2 Route 2: Access Route from the North (Post-Bridge Construction)

Following completion of the Wilton Road bridge replacement and removal of associated load limits, heavy vehicles accessing the EPS site from the north will travel via Route 2.

Route 2 is shown in **Figure 2**. Heavy vehicles will travel from the M1 motorway at Ryhope, through the township of Awaba via Cessnock Road, Wilton Road, Wangi Road and Rocky Point Road to reach Construction Road. Wilton Road is speed limited to 80 km/h with the exception of the short section through the township of Awaba which is 60 km/h. Wangi Road is speed limited to 80 km/h and 90 km/h.

3.2.3 Route 3: Access Route from the South

Heavy vehicles accessing the EPS site from the south will travel via Route 3 through the townships of Morisset and Dora Creek.

Route 3 is shown in **Figure 3**. Heavy vehicles will travel from the M1 motorway via Mandalong Road, which becomes Dora Street, Macquarie Street, Main Road and then Wangi Road, and finally onto Rocky Point Road to reach Construction Road.



Figure 1 Route 1: Access Route from the North (Pre-Bridge Construction) (Source: AECOM, 2021)

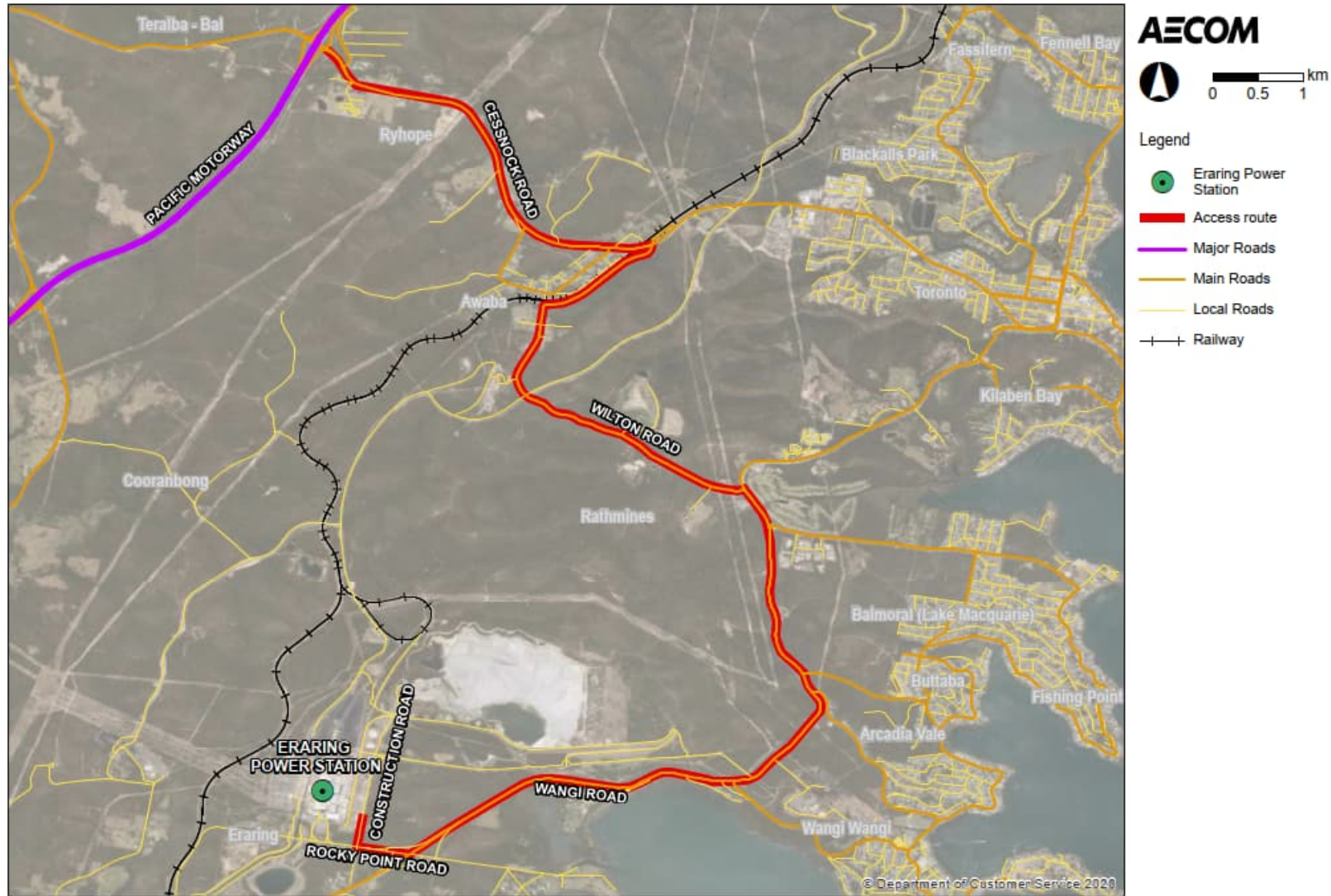


Figure 2 Route 2: Access Route from the North (Post-Bridge Construction) (Source: AECOM, 2021)

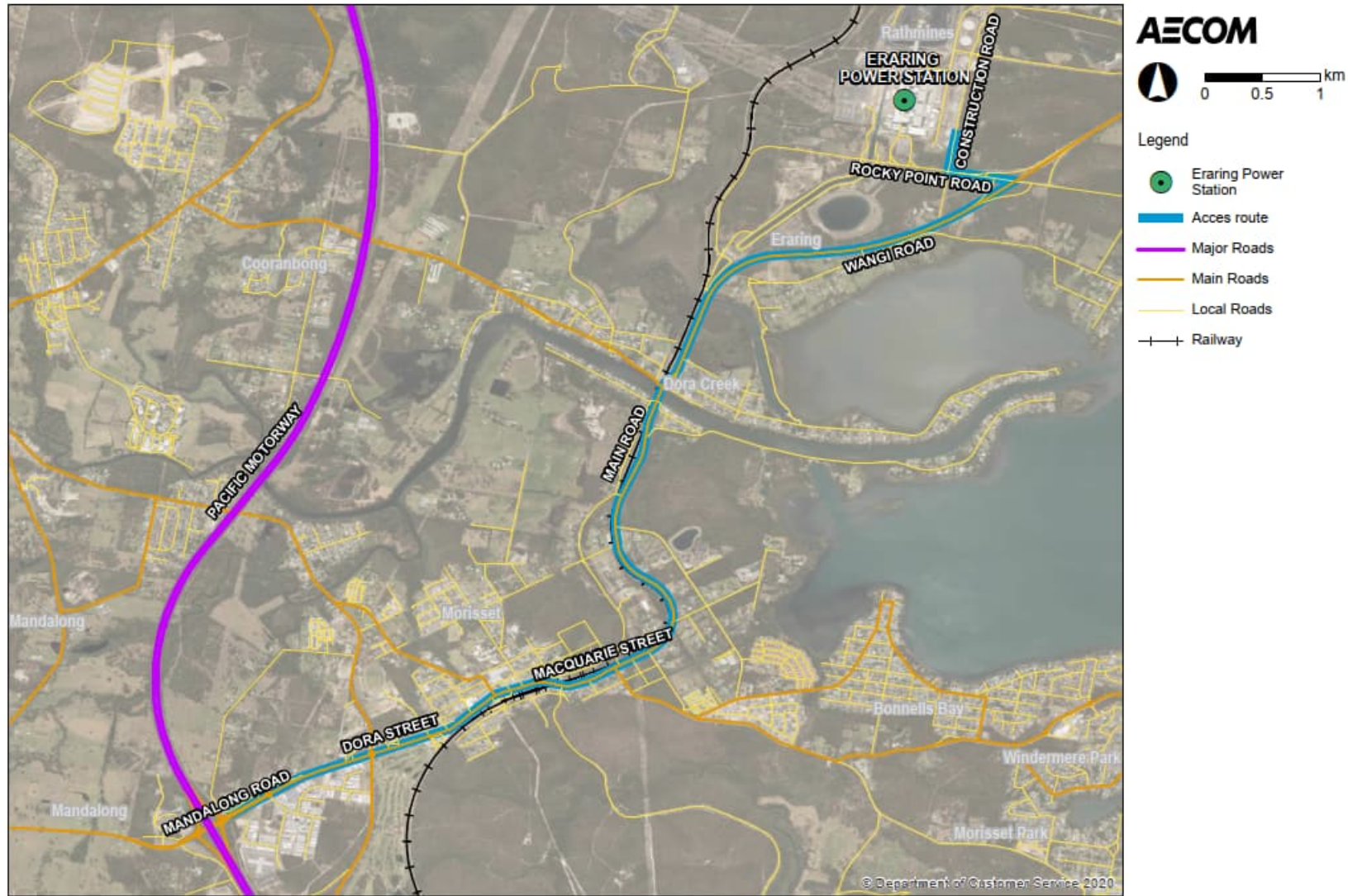


Figure 3 Route 3: Access Route from the South (Source: AECOM, 2021)

4.0 Management Measures

4.1 Traffic Management Measures

The management measures provided in **Table 2** will be implemented to minimise the potential impacts of ash haulage associated with the MOD 2 project.

Table 2 Traffic Management Measures

Management Measure	Responsibility	Timing
Truck drivers will be required to undertake the ‘Eraring Power Station Ash Recycle Drivers Familiarisation Induction’, which will set out: <ul style="list-style-type: none"> work health and safety obligations conditions of entry to the EPS site driver responsibilities traffic management measures emergency procedures. 	Origin Project Manager Transport Contractors	Prior to entry to the EPS site, and valid for two years from completion.
Truck drivers will also be required to complete the online Ash Dam Induction (if they are collecting ash from that area of the EPS site) or a specific induction relative to the third party contractor they are working for on the EPS site (e.g. Daracon, Boral, etc.).	Origin Project Manager Transport Contractors	Prior to entry to the EPS site, and valid for two years from completion.
Origin will implement the Driver Code of Conduct as described in Section 4.2 of this OTMP.	Origin Project Manager	At all times
Where possible, maximum truck sizes will be used to minimise the number of vehicle movements.	Transport Contractors	At all times
Truck movements within the EPS site will be managed to ensure that queuing does not occur outside the boundary of the site.	Origin Project Manager	At all times
If the construction stages of Origin projects overlap, Origin will manage cumulative traffic impacts through careful planning and scheduling of vehicle movements and deliveries.	Origin Project Managers	Throughout concurrent project stages
Origin will monitor ash haulage truck movements and direction of travel as described in Section 5.0 of this OTMP.	Origin Head of Ash Strategy	At all times
Records of ash haulage truck monitoring will be retained on site and evidence will be provided to LMCC.	Origin Environment Business Partner	Annually prior to 31 July

4.2 Driver Code of Conduct

Origin will implement this Driver Code of Conduct, which aims to minimise the potential impacts (congestion, road safety and noise) of project-related traffic on local residents and other road users.

This Driver Code of Conduct sets out the driver responsibilities that all drivers are expected to adhere to. As a minimum, all drivers are expected to:

- be appropriately licensed for the vehicle they are operating
- comply with all posted speed limits and road rules
- ensure all loads are covered / secured prior to leaving the EPS site
- drive in a manner that is appropriate for the road and weather conditions
- avoid travelling through residential areas and school zones, where possible
- drive with additional caution when travelling through residential areas and school zones
- avoid travelling through Morisset town centre between 4pm and 6pm, where possible
- avoid travelling during the night time period (i.e. between 10pm and 7am), where possible
- schedule deliveries to avoid platooning of vehicles, where possible
- allow enough room between vehicles to allow other road users to safely pass
- limit the use of compression braking in residential areas
- use the horn only as a warning device.

Complaints received from the public regarding ash haulage trucks from EPS will be recorded within Origin's Incident Management system and an investigation will be undertaken. Where this investigation identifies non-compliance with this Driver Code of Conduct, corrective actions will be implemented, and disciplinary action may be taken.

5.0 Monitoring

Condition 1.6 and Appendix B of MP07_0084 requires Origin to pay an annual contribution to LMCC for the maintenance of roads along the haulage routes. The haulage contribution is required for every tonne of ash transported from EPS along each haulage route and evidence of the tonnage hauled on each route is required to be submitted by 31 July each year. Payment of the haulage contribution is required by 31 August each year.

Origin currently utilises contract mechanisms to calculate the ash tonnage hauled along each route and the required haulage contribution. Records of haulage volumes and receipt of ash are provided to Origin by contracted companies.

Haulage data records will be maintained by Origin and provided annually to LMCC in accordance with the requirements of MP07_0084.

To improve efficiency and accuracy of its record keeping, Origin is investigating alternative options for the monitoring and calculation of truck numbers, including the potential use of closed circuit television (CCTV) and traffic counting software:

- CCTV

Origin is considering the use of a CCTV system, with cameras installed at two locations along Rocky Point Road facing east towards Wangi Road. The CCTV system would provide a continuous stream of video which could be used to monitor the direction of travel of ash haulage trucks onto Wangi Road, to ascertain the truck numbers utilising each route.

- Truck Counts

Origin is also investigating the use of traffic counting software to analyse the CCTV video stream and provide vehicle counts and vehicle classifications per direction of travel. This system would provide the data required to calculate truck numbers and tonnes of ash transported along each route.

If alternative monitoring methods are introduced, this OTMP will be updated and the updated report will be provided to DPE and LMCC.

6.0 Incidents, Compliance and Reporting

6.1 Incidents and Complaints

Drivers should report any near misses and incidents involving traffic management issues to the relevant Origin representative. Incidents will be investigated and managed in accordance with the Incident Management Directive (ORG-RMS-DIR-006). Incidents will be recorded within the Incident Management System and reported to DPE immediately (refer to **Section 6.3**).

Complaints received from the public regarding ash haulage trucks from EPS will be recorded within Origin's Incident Management system and an investigation will be undertaken. Where relevant, corrective actions will be implemented and disciplinary action may be taken.

6.2 Compliance and Auditing

Annual review of the performance of this OTMP will be undertaken to assess the continuing suitability, adequacy and effectiveness of the measures implemented. This will include an audit of traffic volumes, traffic routes and compliance with the code of conduct.

Where monitoring, auditing or incident investigation identifies non-compliance with MP07_0084 or this OTMP, corrective actions will be implemented and disciplinary action may be taken.

6.3 Reporting

Monitoring data and haulage records (refer **Section 5.0**) will be used to calculate the tonnage of ash transported along each haulage route for the purpose of calculating haulage contributions required to be paid to LMCC. Records of the tonnage hauled on each route will be reported to LMCC annually by 31 July each year, in accordance with condition 1.6 and Appendix B of MP07_0084.

Incidents will be reported to DPE immediately after becoming aware of the incident, in accordance with condition 5.1 of MP07_0084. Incident notifications will be made in writing via the Major Projects website (<https://www.planningportal.nsw.gov.au/major-projects>).

7.0 Review of the OTMP

This OTMP will be reviewed and updated as necessary to reflect major changes to the project or regulatory requirements associated with the MOD 2 project.

In accordance with condition 5.14 of MP07_0084, the OTMP will be reviewed and, if necessary, revised within three months of:

- submission of an incident report to DPE
- modification to the conditions of MP07_0084
- submission of an Independent Environmental Audit report
- as directed by DPE.

Where this review leads to a revision of the OTMP, the revised document will be submitted to DPE for approval within four weeks of the review.

Other triggers for OTMP review may include:

- change to the haulage routes outlined in **Section 3.0**
- change to the monitoring methods as described in **Section 5.0**
- findings and recommendations of an investigation into an incident or complaint
- changes to relevant legislation and/or policies.

8.0 References

AECOM (2021) *Modification Report: Ash Recycling Facilities, Eraring Power Station*, AECOM Australia Pty Ltd, Newcastle, 20 August 2021.

AECOM (2018) *Ash Dam Augmentation Project: Environmental Assessment*, AECOM Australia Pty Ltd, Newcastle, 15 August 2018.

Jacobs (2021) *Eraring Battery Energy Storage System: Environmental Impact Statement*, Jacobs Group (Australia) Pty Limited, Newcastle, 22 October 2021.