Lidsdale Ash Dam Areas

Construction and Operational Transport Management Plan

Prepared for Generator Property Management Pty Ltd

March 2026

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Construction and Operational Transport Management Plan

Generator Property Management Pty Ltd

E230337 RP3

March 2026

Version	Date	Prepared by	Reviewed by	Comments
V1	14 December 2021	Baqir Husain	Dr. Tim Brooker	Draft for TfNSW review
V2	29 April 2022	Baqir Husain	Dr. Tim Brooker	Final addressing TfNSW comments of 8 March 2022
V3	11 October 2024	Sofia Stergio	John Pola	Minor updates to incorporate MOD2
V4	11 February 2025	Nadia Eisenlohr	Abdullah Uddin	Updates following TfNSW comments from 24/01/25
V5	15 August 2025	Zainab Ahmed	Nadia Eisenlohr	Updated to address TfNSW comments
V6	19 September 2025	Zainab Ahmed	Nadia Eisenlohr	Updated to address DPHI comments
V7	31 March 2026	Zainab Ahmed	Nadia Eisenlohr	Final

Approved by

John Pola
GPM Environment Manager
31 March 2026

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1 Introduction

This document describes the Construction and Operational Transport Management Plan (TMP) that will be implemented by Generator Property Management (GPM) and its contractors during the construction, operation and maintenance of the Lidsdale Ash Repository. The Lidsdale Ash Repository (the site) is located at Skelly Road, Lidsdale NSW and is approximately 15 kilometres (km) north-west of Lithgow and 2.5 km north-east of Wallerawang Power Station (WPS). The site comprises an area of approximately 528 hectares (ha) and is situated primary on Lot 5 in Deposited Plan (DP) 829137 (refer to Figure 1.1).

The site includes:

- the Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD)
- Sawyers Swamp Creek Ash Dam (SSCAD)
- Lidsdale Cut and adjacent asbestos landfills
- demolition landfill south of the SSCAD.

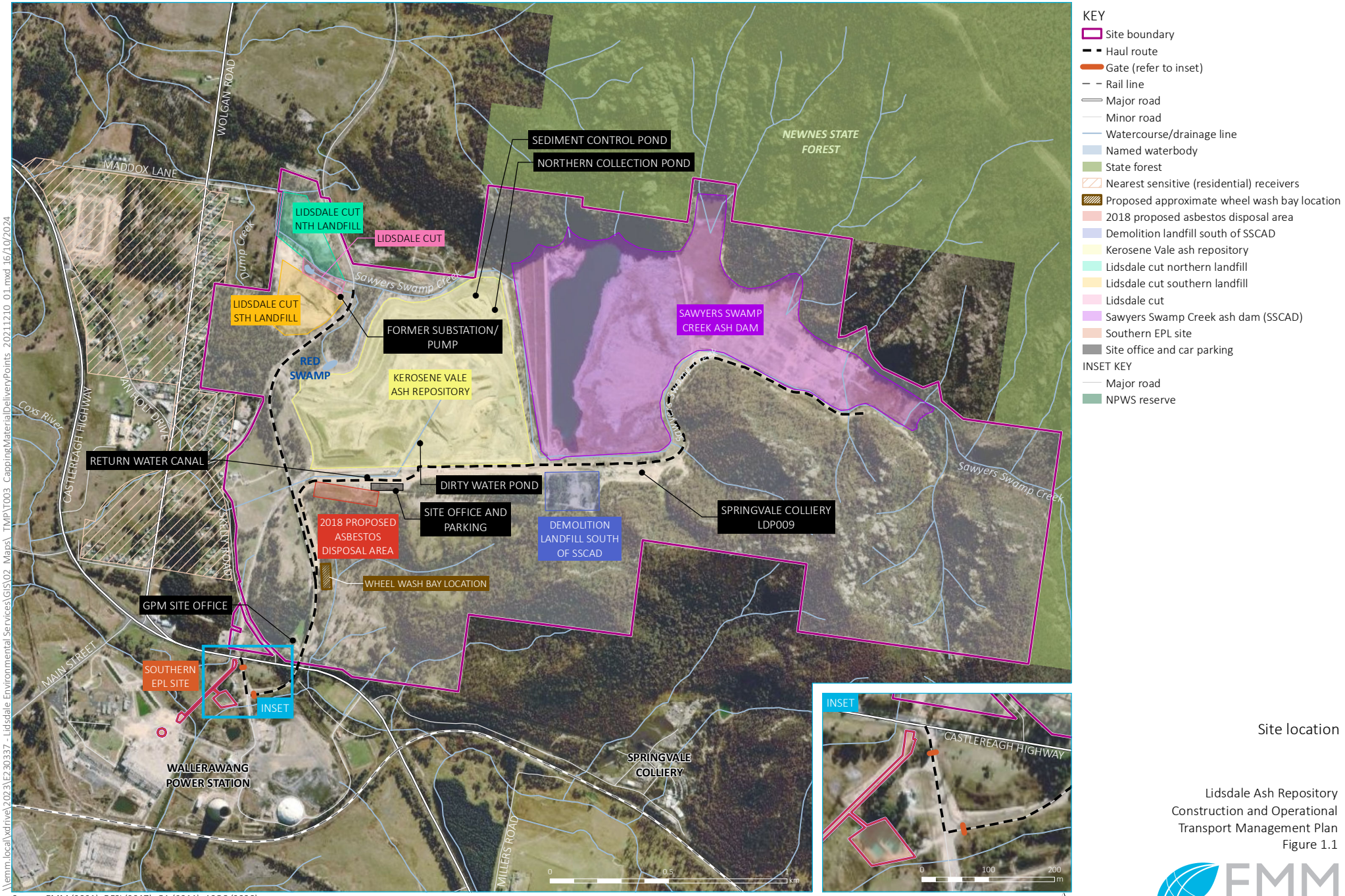
This TMP has been prepared to satisfy the conditions of approval as part of the modification (MOD 2) to the development approval by Minister of Planning as part of the *Environmental Planning and Assessment Act 1979* for the project at Lidsdale Ash Repository (Application No. 07_0005) approved on 13 October 2023. This TMP outlines the framework of the transport movements to/from and within the project area associated with the importation of material required for construction and operations.

1.1 Background

The Lidsdale Ash Repository is owned and operated by GPM with the site having a long history of being used for disposal of waste from the WPS. GPM took ownership of the site in September 2020 from Energy Australia NSW. The site was used for ash disposal in conjunction with the WPS since the late 1950s but since the closure of WPS in 2014, the Lidsdale Ash Repository has been placed in care and maintenance.

Project Approval MP07_0005- Mod 2 contains a number of conditions that need to be complied with by GPM Co NSW, as the proponent, at different stages of the Project. Condition 6.3 (a) and 6 (f) of Project Approval MP07_0005- Mod 2 requires an TMP be developed prior to the commencement of construction and operations at the site. This document has been prepared to comply with this requirement.

Site contractors have been engaged by GPM to support GPM's care and maintenance activities and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.



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Source: EMM (2021); DFSI (2017); GA (2011); ASGC (2006)

GDA 1994 MGA Zone 56

N

Site location

Lidsdale Ash Repository
Construction and Operational
Transport Management Plan
Figure 1.1

EMM
creating opportunities

1.2 Construction and Operational Environmental Management Plans

CoA 6.2 requires the applicant to develop a construction environmental management plan (CEMP) that outlines the environmental management practices and procedures to be followed during construction. CoA 6.3 requires the preparation and implementation of the following sub-plans included as part of the CEMP:

- Construction Traffic Management Plan (CTMP)
- Construction Noise Management Plan (CNMP)
- Construction Erosion and Sediment Control Plan (CESCP).

CoA 6.4 requires the applicant to prepare and implement an Operational Environmental Management Plan (OEMP). As part of the OEMP, CoA 6.5 requires the preparation and implementation of the following plans:

- Operational Noise Management Plan (ONMP)
- Operational Groundwater Management Plan (OGWMP)
- Operational Surface Water Management Plan (OSWMP)
- Operational Air Quality Management Plan (OAQMP)
- Operational Landscape / Revegetation Management Plan (OLRMP)
- Operational Transport Management Plan.

These plans are included as sub-plans to the OEMP.

Table 1.1 provides a high-level overview of the proposed activities that are covered by the two plans. Further information on the scope of this Construction and Operational Transport Management Plan is provided in Section 2.

Table 1.1 Activities covered by the CEMP and OEMP

Environmental Management Plan	Activities covered
OEMP – care and maintenance operations	• ash management • management of on-site water systems • capping material haulage, placement and management • landscaping and revegetation/rehabilitation of the site • upgrading and maintaining internal access roads in the project area

Environmental Management Plan	Activities covered
CEMP – construction activities	• Sawyers Swamp Creek realignment • construction of stability berms around the perimeter of the KVAR • excavation of the former pine plantation area • sediment controls and surface water dams associated with construction of the KVAR stability berm and realignment of the Sawyers Swamp Creek • establishment of freshwater collection ponds and diversion pipes/drains on the northern edges of SSCAD • rearrangement of water flows around the KVAR • establishment of access roads onto the surface of the SSCAD and associated roads across the dam surface • reinstatement of environmental controls for historic landfill areas including capping of slumped areas, reprofiling for water management and control of sediment runoff during these activities • concurrent construction activities.

The CEMP and OEMP form part of GPM's Environmental Management System (EMS), which is based on AS/NZS ISO 14001. A summary of the EMS and its interaction with the CEMP, OEMP and this document (outlined) is provided in Figure 1.2.

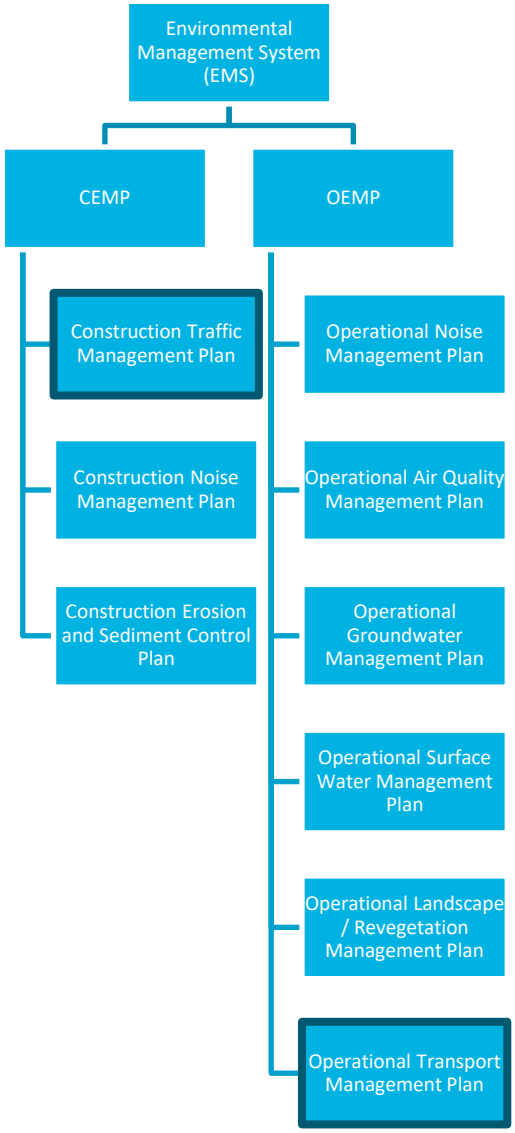

Figure 1.2 Environmental Management System flowchart

1.3 Scope

This Construction and Operational Transport Management Plan covers all traffic from construction and operations activities at the Lidsdale Ash Dam Repository.

Construction traffic movements will involve the transport of materials for landform shaping and other civil works.

Operational traffic movements will involve the transport of materials for capping, landscaping and revegetation works.

1.4 Purpose and objectives

The purpose of this Construction and Operational Transport Management Plan is to manage potential traffic impacts of the site in line with the conditions of approval. This plan also includes a Construction vehicle and Driver Code of Conduct.

The objectives of this plan are to meet the approval conditions, as summarised in Section 1.6. This plan has been prepared in accordance with Procedures for Use in the Preparation of a Traffic Management Plan (RTA, 2001).

1.5 Operating hours

Approved construction hours are:

a) 7:00 am to 6:00 pm, Mondays to Fridays.

b) 8:00 am to 1:00 pm on Saturdays.

c) At no time on Sundays or public holidays.

Approved hours of operation are 7:00 am to 10:00 pm Monday to Sunday.

1.6 Approval conditions

The relevant approval conditions and where they are addressed in this report are provided in Table 1.2.

Table 1.2 Relevant approval conditions

Condition No	Relevant condition of approval	Relevant report section
	Construction Traffic and Transport Impacts	
2.36	The Applicant shall ensure that construction vehicles associated with the project:	
	a) minimise the use of local roads (though residential streets and town centres) to gain access to the site;	Section 2.1
	b) adhere to any nominated haulage routes identified in the Construction Traffic Management Plan as referred to in condition 6.3a) of this approval; and	Section 2.6
	c) adhere to a Construction Vehicle Code of Conduct prepared to manage driver behaviour along the local road network to address traffic impacts (and associated noise) along nominated haulage routes.	Chapter 3
	Capping Material Transport Impacts	
2.36A	The Applicant must:	

Condition No	Relevant condition of approval	Relevant report section
	a) not import more than 100 heavy vehicle loads of capping material to the site per day;	Section 2.10
	b) cover all heavy vehicle loads of capping material;	Section 3.8
	c) not transport capping material on local roads in the Lithgow local government area;	Section 2.6
	d) notify the Department before commencing the importation of capping material from sources outside of the Lithgow local government area; and	The Department was notified of this prior to September 2020.
	e) not import capping material to the site for more than 10 years following the date of approval of Modification application 07_0005 Mod 2.	Section 2.10
2.36B	The Applicant must implement warning signage on the Castlereagh Highway on the approaches to the Castlereagh Highway/Wallerawang Power Station Haul Road intersection prior to importing capping material to the site from sources outside of the Lithgow local government area to the satisfaction of TfNSW.	Section 2.4
	Construction Environmental Management	
6.3 a)	a **Construction Traffic Management Plan**, prepared in consultation with TfNSW, the relevant Council and emergency services to manage the construction traffic impacts of the project, including but not limited to:	Section 1.7
	i) identifying construction vehicle volumes (construction staff vehicles, heavy vehicles and oversized loads) and haulage routes;	Section 2.10
	ii) identifying any road closures and/or traffic detours during the haulage of oversized loads as agreed to by the relevant roads authority;	Section 2.6
	iii) detailing a Construction Vehicle Code of Conduct to set driver behaviour controls to minimise impacts on the land uses along haulage routes (including noise minimisation measures); and	Chapter 3
	iv) complying with the document Procedures for Use in the Preparation of a Traffic Management Plan (RTA, 2001).	Section 1.4.
	Operational Environmental Management	
6.5 f)	(i) be prepared in consultation with TfNSW and Council, prior to importing capping material from sources outside of the Lithgow local government area;	Section 1.7
	(ii) detail the route to be used to transport capping material;	Section 2.6
	(iii) detail the measures that would be implemented to minimise traffic safety issues for other road users (including cyclists), including: • notifying the community about project-related traffic impacts • a procedure to address complaints about project-related traffic • minimising potential traffic conflicts with school buses and during local school drop-off and pick-up times • scheduling heavy vehicle movements to minimise convoy length or platoons • responding to local climate conditions that may affect road safety such as fog, dust, wet weather • responding to emergency repair or maintenance requirements; and	The proponent shall notify the community about the project in due course. Sections 2.12, 3.11, 2.7, 3.6, 3.10, 3.2, 0, 3.5 and Table 1.3.
	(iv) include a Driver Code of Conduct, which addresses: • travelling speeds • driver fatigue	Chapter 3

Condition No	Relevant condition of approval	Relevant report section
	• adherence to the designated transport route • safe driving practices.	

1.7 Consultation

Approval Condition 6.3 (a) and 6.5 (f) stipulates that this TMP be prepared in consultation with Transport for New South Wales (TfNSW) and Lithgow City Council (LCC). This draft has been provided to TfNSW, SES and LCC for comment. The TMP will be a live document and will be reviewed periodically and updated if required.

Comments provided by TfNSW are addressed in Table 1.3. LCC has reviewed the plan and provided no comments. SES was also consulted and provided recommendations that have been incorporated into the TMP. These are detailed in Table 1.3 and Table 1.4.

TfNSW, SES and Council correspondences are included in Attachment A

1.7.1 TfNSW

Revision 1 of the plan was provided to TFNSW in early 2022 for comment. TfNSW provided a letter dated 8 March 2022 which outlined a number of traffic related comments.

Revision 3 of the plan was provided to TfNSW on 7 January 2025. TfNSW has returned comments in a letter dated 24 January 2025.

TfNSW's comments and EMM responses are provided in Table 1.3.

Table 1.3 TfNSW comments and EMM responses

Item no	Comments	Responses
8 March 2022		
1.	Section 2.9 of the TMP states the number of truck movements will be dictated by the capping material source but on average there would be 6-7 truck movements per hour with a maximum peak of 12 trucks per hour and 40 light vehicle trips per day. TfNSW notes Section 2.6 of the TMP states the haulage routes will be identified as capping material sources are identified. As per condition 6.5 (ii) of Consent 07_0005 the TMP must detail the routes to be used to transport capping material. The TMP needs to be updated to identify the proposed routes and associated traffic volumes as the current TMP only shows the proposed access point to the site.	The location of the sites where the materials will be collected from is unknown at this stage. However, the haulage routes will predominately use the arterial road networks. If the haulage routes follow any council controlled local road, the relevant council will be notified in due course.
2.	The TMP does not detail the measures to be implemented to ensure scheduling of heavy vehicle movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii), this needs to be addressed.	Once a material transport contractor is engaged, the proponent will ensure the convoy lengths, platooning and interaction with the school pick up or drop off times is clearly articulated and appropriately conditioned in the contract to minimise any traffic impact on public roads. The transport contractor/s will follow the drivers code of conduct and any complaints from the road authority or community would be appropriately dealt with in accordance with the complaint management process outlined Section 3.11.
3.	The TMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes	Drivers will adjust their driving behaviour in accordance with the adverse weather conditions, as

Item no	Comments	Responses
	as per Condition 6.5 (f) (iii). The TMP needs to demonstrate consideration of the climatic conditions on the transport routes including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.	stated in TfNSW Centre for Road Safety website. Some risk mitigation measures are speed reduction for safe breaking, allowing extra distance to the vehicle in front and use of headlights and fog lights, in accordance with relevant Australian Road Rules.
4	The TMP does not identify a process for notifying the community about project-related traffic impacts as per Condition 6.5 (f) (iii), this needs to be addressed.	No community notification will be undertaken, unless warranted. If the prescribed haulage routes go through the local residential streets, affected councils will be notified prior and appropriate community consultation undertaken as required. Any community complaints will be managed in accordance with the appropriate complaint management procedure, as outlined in Section 3.11 of this report.
5	The TMP does not identify a process to respond to emergency repair or maintenance requirements of TfNSW assets as per Condition 6.5 (f) (iii), this needs to be addressed.	Emergency repair or maintenance procedure has been outlined in Section 0 of this report.
24 January 2025		
1	The COTMP does not provide details on proposed haulage routes to transport the capping material associated with the operations of the development. Whilst the plan states that haulage routes will be provided once engagement with a transport contractor has occurred, it only demonstrates the internal haulage route from the existing site access road. TfNSW are required to assess the potential impacts to the broader classified road network in the context of the proposal. Accordingly, proposed haulage routes should be clearly illustrated in the COTMP in accordance with Condition 6.3(a) within the consent and identify any sensitive land uses (e.g. school zones, residential areas) impacted by the vehicle movements and consider any conditions contained within the existing approval. (i.e. Condition 2.36(a) indicates that no capping material is to be transported via any residential roads within the Lithgow local government area (LGA) during construction and operation phase).	Construction and operations materials are imported to site from a wide variety of sources, primarily along the Great Western Highway, and are transported via the highway and state roads, ultimately entering site via Castlereagh Highway. Section 2.6 has been updated.
2	The COTMP does not identify suitable measures to be implemented to ensure scheduling of heavy vehicles movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii). A proposed schedule of transport operations, including identification of peak hours during operation and confirmation of maximum average of heavy vehicle movements per hour (currently listed as 12) should be included in the COTMP.	The proponent will work with their transport contractor/s to ensure the convoy lengths, platooning and interaction with the school pick up or drop off times is clearly articulated and appropriately conditioned in their contract to minimise any traffic impact on public roads. The transport contractor/s will follow the Drivers Code of Conduct and any complaints from the road authority or community would be appropriately dealt with in accordance with the complaint management process outlined Section 3.11. Section 2.7 has been added to highlight scheduling requirements.
3	Condition 6.3(a)(i) requires the identification of construction vehicle volumes (including staff vehicles, heavy vehicles and oversized vehicles). The traffic counts provided (using SIDRA) in the COTMP do not appear to differentiate the construction and operational traffic volumes, does not include counts or consider the impact of any oversized vehicles.	Construction and operations activities occur simultaneously within different areas of the site. As such it is difficult to differentiate heavy vehicles carrying construction materials from heavy vehicles carrying operations materials. As per the development consent, the combined total heavy vehicle movements will be less than 100 per day. Section 2.10 has been updated.

Item no	Comments	Responses
4	The COTMP does not identify any alternative routes to be used in the event of road closures and/or traffic detours during haulage as required by Condition 6.3(a)(ii). Furthermore, a process to respond to any emergency road repairs or road maintenance requirements as a result of, ordering haulage, has not been provided in accordance with Condition 6.5 (f)(iii). It is noted that Section 3.9 of the COTMP refers to maintenance of haulage vehicles and does not consider impacts or repairs required to the road environment or any other TfNSW assets.	In the event of road closures or traffic detours, traffic operations to/from the site will cease as there are no alternate routes to site. Section 2.6 has been updated.
5	An appropriate community consultation strategy should be clearly detailed in the COTMP prior to operations commencing in accordance with Condition 6.3(f)(iii).	Section 2.12 has been added to provide further detail about GPM's community and stakeholder communication strategy.
6	The COTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5(f)(iii). The COTMP needs to demonstrate consideration of the climatic conditions on the transport routes (e.g. fog, black ice, etc) including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.	Section 3.6 has been added to the Driver Code of Conduct to provide further guidance in the event of adverse weather conditions.
7	The Code of Conduct could be updated to include clear parameters for the monitoring of driver behaviour through the use of an internal monitoring system that is performance objective based, promotes driver education and can be updated in the event of any changes during transport operations. Additionally, adherence to designated transport haulage routes (including minimising impact on residential areas) in accordance with relevant conditions should be included in the Code of Conduct.	Internal monitoring systems are in place for some trucks servicing the site, particularly trucks that are importing materials from larger operators and quarries. However, as the site received materials from a wide variety of sources and uses a number of different transporters these requirements aren't imposed on all trucks, as there is no requirement in the planning consent for these systems.
07 August 2025 TfNSW reviewed the revised Construction and Operational Traffic Management Plan (TMP) and provided feedback reiterating that the comments related to the following should be considered further: • the proposed haulage routes – Comment 1 • schedule of transport operations – Comment 2 • differentiation of construction and operational traffic volumes – Comment 3 • alternative routes in the event of road closures – Comment 4 The remaining TfNSW comments are considered closed. The TfNSW letter from 7th of August is included in Attachment A.		
1	The COTMP does not provide details on proposed haulage routes to transport the capping material associated with the operations of the development. Whilst the plan states that haulage routes will be provided once engagement with a transport contractor has occurred, it only demonstrates the internal haulage route from the existing site access road. TfNSW are required to assess the potential impacts to the broader classified road network in the context of the proposal. Accordingly, proposed haulage routes should be clearly illustrated in the COTMP in accordance with Condition 6.3(a) within the consent and identify any sensitive land uses (e.g. school zones, residential areas) impacted by the vehicle movements and consider any conditions contained within the existing approval. (i.e. Condition 2.36(a) indicates that no capping material is to be transported via any residential roads within the Lithgow local government area (LGA) during construction and operation phase).	Section 2.6 has been updated to provide further details and to describe the process for determining haulage routes for new suppliers. Example haulage routes of key suppliers have been included as Attachment D.

Item no	Comments	Responses
2	The COTMP does not identify suitable measures to be implemented to ensure scheduling of heavy vehicles movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii). A proposed schedule of transport operations, including identification of peak hours during operation and confirmation of maximum average of heavy vehicle movements per hour (currently listed as 12) should be included in the COTMP.	Section 2.7 has been updated to provide further measures to ensure scheduling of heavy vehicles does not interfere with school pick up and drop off.
3	Condition 6.3(a)(i) requires the identification of construction vehicle volumes (including staff vehicles, heavy vehicles and oversized vehicles). The traffic counts provided (using SIDRA) in the COTMP do not appear to differentiate the construction and operational traffic volumes, does not include counts or consider the impact of any oversized vehicles.	Section 2.10 has been updated to state that there is no Over-size Over-mass traffic to site, so therefore has not be included in the traffic counts. If this were to change, OSOM movements would be in accordance with and subject to further approvals as well as NVHR requirements
4	The COTMP does not identify any alternative routes to be used in the event of road closures and/or traffic detours during haulage as required by Condition 6.3(a)(ii). Furthermore, a process to respond to any emergency road repairs or road maintenance requirements as a result of, ordering haulage, has not been provided in accordance with Condition 6.5 (f)(iii). It is noted that Section 3.9 of the COTMP refers to maintenance of haulage vehicles and does not consider impacts or repairs required to the road environment or any other TfNSW assets.	Sections 2.6 and 2.7 have been updated to provide more detail about road closures and the process that will be followed.
5	An appropriate community consultation strategy should be clearly detailed in the COTMP prior to operations commencing in accordance with Condition 6.3(f)(iii).	No further comment from TfNSW. This comment is considered resolved.
6	The COTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5(f)(iii). The COTMP needs to demonstrate consideration of the climatic conditions on the transport routes (e.g. fog, black ice, etc) including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.	No further comment from TfNSW. This comment is considered resolved.
7	The Code of Conduct could be updated to include clear parameters for the monitoring of driver behaviour through the use of an internal monitoring system that is performance objective based, promotes driver education and can be updated in the event of any changes during transport operations. Additionally, adherence to designated transport haulage routes (including minimising impact on residential areas) in accordance with relevant conditions should be included in the Code of Conduct.	No further comment from TfNSW. This comment is considered resolved.

1.7.2 Lithgow City Council

LCC has been contacted to comment on the draft plan. Council has advised that they have no comment on the draft report.

Revision 3 of the plan was provided to LCC on 7 January 2025. Council officers have reviewed the plan and it is considered satisfactory and complies with conditions 6.3(a) and 6(f) of the consent.

1.7.3 NSW State Emergency Service

Revision 4 of the plan was provided to the NSW SES in 2025 for comment. The SES provided a letter dated 13 August 2025 which provided some recommendations for consideration. These recommendations and EMM responses are provided in Table 1.3.

Table 1.4 SES recommendations and EMM responses

Item no	Comments	Responses
1.	Consider the impact of flooding on the infrastructure and people using the roads up to and including the Probable Maximum Flood (PMF), along with the impact of climate change on the flood risks.	The impact of flooding has been considered as part of the Emergency Plan, the SSCAD Dam Safety Emergency Plan and the Surface Water Management Plan
2.	Ensure workers and people using the site and roads during and after the upgrades are aware of any flood risk, for example through site inductions, by using signage and other flood information tools.	Flood planning and response will be included in the site induction as part of emergency preparedness and response
3.	Recommend the Operational Transport Management Plan includes instructions to act early on Severe Weather Warnings issued by the Australian Government Bureau of Meteorology (BoM). The NSW SES does not have the operational capacity to provide individualised flood warnings for each business site. Severe Weather Warnings will be the most likely form of advice about the potential for flood producing storms and rainfall. In addition, coastal system such as tides and tsunami should be included in your plan for this location.	Section 2.7 updated to include this recommendation.
4.	Consider closing the worksite and securing all materials and equipment prior to the start of the working day if there is a risk of riverine flooding, on receipt of advice from the BoM, or when other evidence leads to an expectation of flooding. During site works, check the BoM website prior to start of the workday for any Severe Weather Warnings.	Flood response is considered in the SSCAD Dam Safety Emergency Plan
5.	Advise that any flood response directive issued by the NSW SES or by delegated authority to others acting on its behalf must be followed. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with any site emergency response plan.	Flood response is considered in the SSCAD Dam Safety Emergency Plan
6.	Recommend pursuing, if relevant, site design and stormwater management that reduces the impact of flooding and minimises any risk to the community. Any improvements that can be made to reduce flood risk will benefit the community.	Stormwater and surface water management is addressed in the Surface Water Management Plan

2 Traffic management and impacts

2.1 Castlereagh Highway

Castlereagh Highway will be the key road providing access to the site. A description of this key road is presented in Table 2.1.

Table 2.1 Castlereagh Highway

Description	Local road
Road classification and connectivity	State road between Golden Highway, Birriwa (north) and Great Western Highway (south).
Alignment	East-west at the vicinity of site access intersection.
Number of lanes	One lane each way, excluding near intersections
Carriageway type	Sealed road with shoulders
Carriageway width	Varies, approximately between 11 m to 14 m with 3.5 m travel lane each way.
Posted speed limit	80 kilometres per hour (km/h) westbound, 100 km/h eastbound.
Heavy vehicle access	Yes, up to 26 m B-doubles. Up to 19 m B-doubles from Great Western Highway.
Traffic function	Carries local and regional traffic.
Additional comments	Access to the project area is provided via Castlereagh Highway.

Photograph 2.1 Castlereagh Highway (looking eastbound near site entrance)

2.2 Project area access

All vehicular access and egress to the site will be from Castlereagh Highway. Vehicles accessing the site will turn into the site at the Wallerawang Power Station access. The vehicles will then continue to follow haul route within the site. The site access from Castlereagh Highway is shown in Figure 2.1 and Photograph 2.2 and Photograph 2.3 below.

Figure 2.1 Site access from Castlereagh Highway

Source: EMM

Photograph 2.2 Site entrance from Castlereagh Highway

Source: EMM

Photograph 2.3 Site entrance from within the site

2.3 Site operation

The site area and site operation details are shown in Figure 1.1.

It is intended that trucks will dump the incoming material in designated locations on the site, turn around and exit via the same incoming route. The material will be further transported to areas by fixed axle trucks until suitable roads are established.

Employee and contractor vehicles will also use the private haul road and park in designated areas. The location of all the incoming material areas, haul routes and car parking areas are shown in Figure 1.1.

Gates at the locations marked in Figure 1.1 will be kept open during operational hours.

A wheel wash bay is located within the site at the location shown in Figure 1.1. On completion of dumping the incoming material, trucks will pass through the wheel wash bay before exiting the site on to public roads.

Drivers entering the site for the first time will go through an induction carried out by an approved member of the facility's staff. It is expected that the majority of drivers will access the site regularly and will become familiar with internal site layout and traffic movements. The trucks will be directed by appropriate signage within the site.

It is anticipated that there will be anywhere between 5 to 30 staff working at the site at any one time. Some staff will be working on tasks unrelated to material haulage and equipment.

2.4 Site safety

Site safety within the site will be ensured by Safe Working Guidelines. The speed limit within the site will be restricted to a maximum of 40 km/h and be dependent on site conditions and activities being undertaken. The warning signage on the Castlereagh Highway on the approaches to the Castlereagh Highway/Wallerawang Power Station Haul Road intersection will be maintained.

Site safety procedures will be signposted at the entrance to the site, including:

- trucks, contractors, visitors must follow safety signs and directional markings at all times
- maximum speed limit 40 km/h inside
- all visitors to park in visitor parking bays only
- any person/s exiting their vehicles on site must wear the correct personal safety equipment at all times
- all exiting trucks must pass through the proposed wheel wash bay
- all trucks, contractors must stop before leaving the site
- all exiting vehicles must stop before approaching the driveway crossover to Castlereagh Highway
- all vehicles will enter and exit the site in a forward direction to/from Castlereagh Highway.

2.5 Queuing on Castlereagh Highway

As mentioned earlier, gates at the entrance and within the site will be kept open during operational hours, hence there will be no queuing or queue overspill on Castlereagh Highway.

2.6 Haulage routes

Construction and operations materials are imported to site from a wide variety of sources, primarily along the Great Western Highway, and are transported via the highway and state roads, ultimately entering site via Castlereagh Highway. As detailed in the Mod2 Modification Report (EMM 2023), material for the site will be sourced from various locations, primarily from infrastructure and other major projects within the Sydney basin. This is due to the availability of suitable material in sufficient quantities has been severely limited, in part due to the deferral or delays in scheduling of major infrastructure projects in areas within a logistically feasible range of the Site. Haulage routes specific to each new supply site are developed when material from that site is first ordered. The haulage routes are determined using the NVHR route planner and are in accordance with the requirements of this TMP and the NVHR. In accordance with CoA 2.36A(c), local roads within the Lithgow Government Area will not be used to transport capping material. Example haulage routes from some of the Site's suppliers have been included in Attachment D. The haulage route within the site is shown in Figure 1.1.

There are no Over-size Over-mass (OSOM) loads required to be transported to site. If this requirement changes, the transport of the OSOM load would be subject to and in accordance with further approvals from the National Heavy Vehicle Regulator (NHVR).

If emergency repair or maintenance is required as a result of construction or operations traffic this will be managed in accordance with GPM's incident and non-compliance procedure outlined in Section 2.12, and in consultation with the road authority.

In the event of road closures or traffic detours, traffic operations to/from the site will cease as there are no alternate routes to site. The Castlereagh Highway entrance is the only site entrance available to heavy vehicles. If there are closures on the Castlereagh Highway and/or Great Western Highway, then suppliers will be informed and heavy vehicle movements to and from site will cease until the highway is open again.

2.7 Scheduling

Material deliveries for a specific working day are approved in consideration of all daily site activities, both operational and construction. This ensures that the daily truck limit is not exceeded.

Transport contractors and suppliers will be required to adjust scheduling of trucks to ensure:

- minimal interaction with school traffic during local school drop off and pick up times
- convoy lengths and platoons are minimised

Orders are also placed in consideration of the above points. Trucks entering and leaving site are tracked by security and an alert is issued once 80 loads has been reached. The relevant supervisors/project managers are notified, and delivery orders are managed to ensure that the daily truck limit is not exceeded. In the event of a Severe Weather Warning issued by the Bureau of Meteorology (BoM), the site supervisors/project managers will review scheduled deliveries to determine whether cancellation of any deliveries is required.

2.8 Vehicle types

The heavy vehicle type bringing in material would be a 19 m truck and dog or a fixed axle truck. Trucks transporting material within the project area will be fixed axle trucks up to 12.5 m. Smaller vehicles will be 4WD utility vehicles used by employees and contractors.

2.9 Surveyed traffic volumes

The Castlereagh Highway/site access intersection has been surveyed between 7 am and 9 am, as well as between 4 pm and 6 pm, on 2 November 2021. The count data is provided in Attachment B.

The peak traffic hours were determined to be between 7:00 am to 8:00 am and 4:00 pm to 5:00 pm. As the traffic data was less than two years old, it is still considered valid for Mod 2. The 2021 traffic volumes were converted to 2023 volumes by applying 1% linear growth per annum on Castlereagh Highway.

The adjusted 2023 traffic volumes during the AM and PM peak hours are summarised in Figure 2.2.

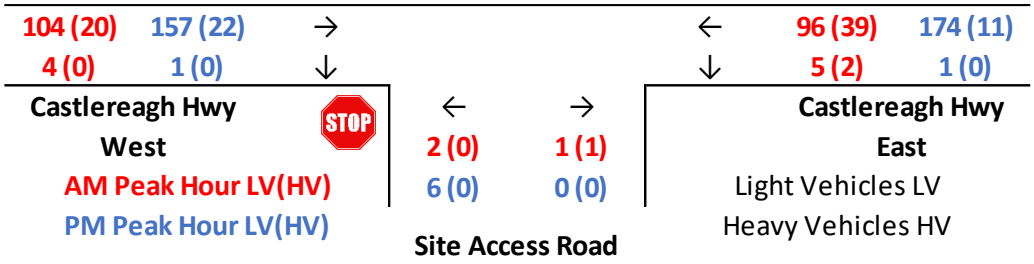

Figure 2.2 2023 peak hour surveyed traffic volumes

2.10 Operational and construction traffic volumes

Condition 2.36A (a) of the DPHI consent (Application No. 07_0005) states that the proponent must not import more than 100 heavy vehicle loads of material per day. The actual number of truck loads will be dictated by the material source but on average there would be 6 to 7 trucks per hour with a peak maximum of 12 trucks per hour based on 100 trucks per day. It is assumed there would be up to 20 light vehicle trips (40 movements) per day for staff at site. For the purposes of this assessment, it has been assumed that peak light and heavy vehicle trips would take place within the same peak hour. In accordance with the conditions of approval, material will not be imported to the site more than 10 years from the date of Mod2 approval (13 October 2023), that is no material will be imported after 13 October 2033, subject to further approval.

On this site construction activities and operational activities occur simultaneously. Construction material imports are required for civil works involved in landform shaping and for activities such as building stability berms and the construction of the creek and dam diversions. The construction works will facilitate the operational work, and conversely, operational work will facilitate further construction. As such trucks coming to site will be both trucks carrying construction materials and trucks carrying operations materials. As per the development consent, the combined total of heavy vehicles for both construction and operations will not be above 100 per day.

As mentioned in Section 2.6, there are no OSOM movements required to or from site, so OSOM traffic has not been included in this assessment.

As per surveyed traffic volume, light vehicle trips are split 50% each in north and south direction.

The combined surveyed and operational/construction traffic volumes are shown in Figure 2.3.

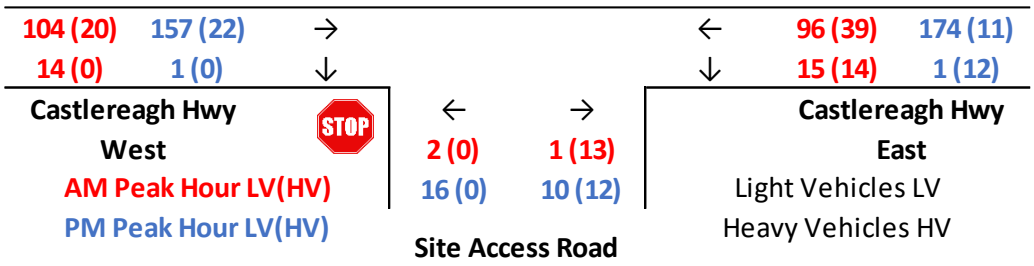

Figure 2.3 Peak hour combined surveyed and operational/construction traffic volumes

2.11 Intersection performance

Castlereagh Highway/Site Access Road intersection has been modelled with the SIDRA Intersection 9.0 software; a micro-analytical tool for individual intersections and linked intersection-network modelling. The modelling is based on the 2023 traffic survey data detailed in Sections 2.9 and 2.10. SIDRA provides the following performance indicators:

- Degree of saturation (DOS) – the total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation (e.g. 0.8 = 80% saturation). In practice the target degrees of saturation of 0.90 for signals, 0.85 for roundabouts and 0.80 for unsignalised intersections are generally agreed to. These are usually called 'practical degrees of saturation'.
- Average delay (DEL) – the average delay in seconds encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- Level of service (LOS) – this is a categorisation of average delay, intended for simple reference.
- 95% queue lengths (Q95) – is defined to be the queue length in metres that has only a 5% probability of being exceeded during the analysed time period. It transforms the average delay into measurable distance units.

The LOS is a good indicator of overall performance for individual intersections, with each level summarised in Table 2.2.

Table 2.2 Intersection LOS standards

Level of service	Average delay (seconds per vehicle)	Traffic signals, roundabout	Priority intersection ('Stop' and 'Give Way')
A	<14	Good operation	Good operations
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity. At traffic signals, incidents will cause extensive delays. Roundabouts require other control mode.	At capacity; required other control mode
F	>71	Unsatisfactory with excessive queuing	Unsatisfactory with excessive queuing; required other control mode

Source: *RTA Guide to Traffic Generating Development* (RTA 2002)

SIDRA intersection modelling has been conducted for the following scenarios:

- Baseline traffic (2023): this scenario includes the 2023 adjusted survey traffic volumes only without any operational or construction traffic volumes.
- Baseline + construction/operational traffic (2023): this scenario includes the 2023 adjusted survey traffic volumes combined with construction/operational traffic volumes.
- Baseline + construction/operational traffic (2023) + cumulative traffic: this scenario includes the 2023 adjusted survey traffic volumes combined with construction/operational traffic volumes and cumulative traffic from two projects nearby in their respective construction stages (Great Western BESS and Wallerawang BESS).
- Horizon + construction/operational traffic (2033): this scenario applies 10 years to the 2023 adjusted survey traffic volumes for sensitivity testing combined with construction/operational traffic volumes.

The SIDRA results for the Castlereagh Highway/Site Access Road intersection are presented in Table 2.3.

Table 2.3 SIDRA modelling result for Castlereagh Highway/Site Access Road intersection

Control/ Scenarios	AM peak					PM peak				
Stop controlled	**Intersection volume**	**DEL(s)**	**LOS**	**DOS**	**Q95 in m (approach)**	**Intersection volume**	**DEL(s)**	**LOS**	**DOS**	**Q95 in m (approach)**
Baseline traffic (2023)	274	9.8	A	0.099	0.3 (west approach)	374	13.2	A	0.139	0.4 (south approach)
Baseline + operational traffic (2023)	318	14.1	A	0.099	2.0 (south approach)	416	14.7	A	0.139	3.0 (south approach)
Baseline + operational traffic (2023) + cumulative traffic	490	24.1	B	0.213	3.3 (south approach)	588	22.6	B	0.185	4.1 (south approach)
Horizon + operational traffic (2033)	344	15.1	A	0.109	2.2 (south approach)	455	16.3	A	0.153	3.2 (south approach)

Key Findings:

- In both the AM and PM peaks, the intersection would perform satisfactorily within capacity with LOS A and of LOS B for all scenarios and DoS <0.15 for most scenarios; and
- overall, the intersection has additional capacity to accommodate the required construction/operational scenario traffic.

Detailed SIDRA results are presented in Attachment C.

2.12 Community and stakeholder communications

GPM maintains a website for the provision of electronic information associated with the Lidsdale Ash Repository. GPM will, subject to confidentiality, publish and maintain up to-date information on this website including:

- a link to the Major Projects Wallerawang Ash Repositories Application 07_0005 Environmental Assessment including:
    - Appendices prepared by Parsons Brinckerhoff (April 2008)
    - Submissions Report prepared by Parsons Brinckerhoff (May 2008)
    - the Conditions of Approval (CoA) issued by the Department of Planning
- relevant strategies, plans and programs required under the CoA, or details of where this information can be viewed
- the outcomes of compliance tracking undertaken in accordance with the project approval
- community updates in relation to the Lidsdale Ash Repository area.

The intention is to ensure that these key pieces of information are made publicly available to promote community and stakeholder engagement.

GPM will continue to use the measures for communication established for Lidsdale Ash Repository activities to ensure all community complaints and enquiries received are managed in an appropriate manner. The measures include:

- 24-hour community information and complaints line
- an online electronic form in which complaints and enquires can be transmitted.

The local community, businesses, schools, and other stakeholders will be notified of upcoming works and traffic impacts prior to commencement via:

- Letterbox drops to affected properties
- Email updates to registered stakeholders
- Project website updates and social media notifications.

2.13 Incidents and non-compliances

The approval defines an incident as:

> A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.

The Secretary must be notified in writing via the Major Projects website immediately after the Project team becomes aware of an incident in accordance with CoA 7.1. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident.

Section 2.9 of the CEMP and Section 3.8 of the OEMP provides further details on the management of environmental incidents and the response to environmental emergencies. This includes the reporting, notification and investigation of environmental incidents.

The approval defines non-compliance as:

> An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.

The Secretary must be notified in writing via the Major Projects website within seven days after the Project team becomes aware of any non-compliance in accordance with CoA 7.2. A non-compliance notification must identify the development and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Section 2.10.4 of the CEMP and Section 3.8.1 of the OEMP provides further details on the Project team's response following the identification of a non-compliance with the CoA, the CEMP/OEMP and Sub-Plans. This includes the reporting, investigation and notification of non-compliances.

2.14 Reporting

Environmental monitoring for the Lidsdale Ash Repository area is designed to comply with the requirements of statutory approvals and provide an analysis of the condition of the environment surrounding the works.

Traffic management will be reported on in the Annual Environmental Management Report (AEMR) which will be submitted to the Secretary each year.

2.15 Review

. A review of the OEMP, sub-plans (including this TMP) and monitoring programs will be undertaken during operations as required. These reviews will be completed to determine the efficiency of the plans and monitoring programs and whether any changes are required to ensure compliance.

Circumstances which may trigger a review include:

- changes to design, construction, work methods, legislation, or policy
- incidents, complaints or non-compliance
- changes identified by continuous improvement
- changes to key management plans that are relevant
- where additional monitoring measures are identified in annual reviews or audits.

In addition and in accordance with CoA 6.6, GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the CoA (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

3 Construction vehicle code of conduct and driver code of conduct

3.1 Purpose of the code

The current project approval requires a Construction Vehicle Code of Conduct for construction activities that manages driver behaviour along the external road network to address traffic impacts (and associated noise) along nominated haulage routes and a Driver Code of Conduct applicable for operations that addresses travelling speed, driver fatigue, adherence to the designated transport route and safe driving practices.

This section has been prepared to address a code of conduct that is applicable to both construction and operational activities of the project.

All drivers involved with construction and operations at GPM are to obey required speed limits on all roads, both on and off site, must maintain fit for work practices, adhere to the designated transport and haulage route associated to their project and must always maintain safe driving practices.

3.2 General requirements

Truck drivers accessing the site for construction and operational activities must:

- undertake a site induction carried out by an approved member of the facility's staff or suitably qualified person under the direction of the facility's management
- hold a valid driver's licence for the class of vehicle they are driving
- not travel within 100 m of any school bus when following school buses along Castlereagh Highway, and will not attempt to overtake any school buses
- not drive into any marked cycle lane or road shoulder on the Castlereagh Highway and must give way to any cyclist or pedestrian when turning into or out of the site entry
- operate the vehicle in a safe manner within and external to the site
- strictly adhere to all designated transport routes as specified in their delivery schedules and route plans.

3.3 Heavy vehicle speed

The following speed restrictions apply in relation to travel to/from the site:

- Castlereagh Highway eastbound – speed limit is restricted to 100 km/h
- Castlereagh Highway westbound – speed limit is restricted to 80 km/h
- within the site – speed limit is restricted between 20 km/h to 40 km/h for all vehicles.

Truck 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 GPM are to be made aware of the Three Strikes Scheme (https://www.aic.gov.au/sites/default/files/2020-05/tandi446.pdf) introduced by 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). The drivers are required to manage their behaviour along the local road network to address traffic impacts (and associated noise) along nominated haulage routes.

3.4 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 are to be aware of their adopted fatigue management scheme and operate within its requirements.

Fatigue includes (but is not limited to) the following:

- 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.

3.5 Safe driving practices

Safe driving practices are essential for keeping the truck drivers and other motorists safe on NSW roads and reducing the risk of crashes. Truck drivers accessing the site must:

- wear a seatbelt while driving. Drivers must not have any part of their body outside the vehicle
- not drive while under the influence of alcohol or drugs, including some over-the-counter and prescription medications as stated in the heavy vehicle driver handbook
- observe speed limits on all public roads
- not use a mobile phone while driving or even when stationary, for example, stopped at lights or stuck in traffic
- not drive a vehicle on a road negligently or at a speed, or in a manner dangerous to the public
- keep enough distance between their vehicle and the vehicle travelling in front so they can, if necessary, stop safely to avoid colliding with the vehicle.

3.6 Adverse weather conditions

All drivers will adjust their driving behaviour in accordance with the adverse weather conditions, following recommendations stated in the TfNSW Centre for Road Safety website. Risk mitigation measures include:

- speed reduction for safe breaking. Braking in icy or wet conditions should be gentle to avoid skidding and losing control
- allowing extra distance to the vehicle in front

- the use of headlights and fog lights, in accordance with relevant Australian Road Rules
- in icy conditions, slowing down and watching for ice on roads, especially in shaded or low-lying areas.

3.7 Heavy vehicle control

In order to minimise the impact of noise from truck transport, the following controls will apply to truck operators operating on behalf of GPM:

- 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
- tailgating is not permitted – a 100 m gap between vehicles 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 1.2.

3.8 Load covering

All loaded vehicles entering the site must be effectively covered for the duration of the trip.

Drivers must ensure that the tailgate is locked before leaving the site.

3.9 Driver conduct

To ensure that the impact of heavy vehicle traffic is minimised to the surrounding community and sensitive land uses, drivers will:

- Minimise the use of compression braking unless it is an emergency
- Ensure no extended periods of idling
- Ensure that there is no littering
- Remain calm and courteous when in contact with members of the public
- Maintain trucks in good working order and a clean and tidy condition
- Not block residential driveways or any other access points
- Adhere to designated haulage routes
- No texting or manual phone operation while driving
- Use of well-maintained vehicles only. Vehicles must comply with relevant noise standards.

3.10 Breakdown and incidents

In the case of a breakdown the vehicle must be towed to the nearest breakdown point as soon as possible. All truck breakdowns within the site must be reported to GPM management and the vehicle protected in accordance with the Heavy Vehicle Drivers handbook.

In the event of emergency road repair or maintenance requirements along a haulage route, immediate action must be taken to ensure the safety of personnel and other road users. If a road is deemed unsafe, transport operations may be suspended temporarily to prevent accidents or further damage. Affected drivers must be notified promptly through appropriate channels such as signage, radio communication, electronic message boards, or direct contact. If required, the relevant road authority must be consulted without delay to assess the situation. Normal operations will only resume once the road has been deemed safe for use.

Emergency contact numbers have been provided in Table 3.1 for reference.

Table 3.1 Emergency contact details

Organisation	Contact details
Transport Management Centre	(02) 8396 1400
Lithgow City Council	(02) 6354 9999
Generator Property Management Pty Ltd	UHF Channel 19 (or as signposted) 0428 853 389
Wallerawang Police Station	(02) 6355 1303

3.11 Complaint management

All complaints will be recorded in GPM's Complaints Register to ensure all complaints are recorded and managed in a timely manner to ensure active community consultation and positive relations are maintained with local residents.

GPM management will ensure that the community relations protocols are communicated to all personnel involved in the complaints process and that appropriate training covering the protocols is established in site inductions. The purpose of this system is to minimise complaints by addressing their concerns upfront and monitor the environmental performance of the site.

3.11.1 Registering complaints

Any enquiries or complaints made by members of the public to site personnel will be directed to the Site Manager.

Complaints may be made to the facility's direct line during business hours (1800 817 711) which will be forwarded to a site representative outside of business hours or for emergencies. This number will be provided on a sign at the site entrance and is available on GPM's website (https://gpmco.com.au/contact/).

3.11.2 Complaint response

Any complaint received by GPM regarding driver conduct will be acted on within 24-hours in the following manner:

- Details of the complaint (date, time, specifics, complainants contact details) will be recorded.
- Activities occurring during the complaint period will be investigated.

- Findings of operations during the complaint period will be recorded in the complaints register.
- Relevant management practices will be reviewed as necessary.
- Findings of the review will be communicated to the complainant.

3.11.3 Complaints register

The details of any complaint will be logged in the complaints register, with investigation findings and actions noted. In accordance with CoA 5.4, the Complaints Register will be provided to the Secretary upon request.

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.

3.12 Pedestrian management within the site

There will be minimal pedestrian activity within the site, except for the site employees or truck drivers who will be familiar with the site.

Attachment A

Correspondence from TfNSW, SES and LCC

EMM
creating opportunities

8/03/2022

SF2018/109889 | WST18/00046/11

Abdullah Uddin
EMM
20 Chandos Street
Sydney NSW 2065

Attention: Abdullah Uddin

Dear Mr Uddin

MP07_0005: Lot 5 DP 829137; Wallerawang Ash Repository, Lidsdale – Operational Transport Management Plan

Thank you for the referral of the subject Operational Transport Management Plan (OTMP) by email dated 28 February 2022 inviting comment from Transport for NSW (TfNSW).

TfNSW understands the OTMP has been prepared to satisfy Condition 6.5 (f) of Development Consent MP07_0005. MP07_0005 involves transportation of 2.3 million cubic metres of capping material to the subject site. Condition 2.36A of consent 07_0005 states that the proponent must not import more than 100 heavy vehicle loads of capping material per day. Vehicular access to the site will be obtained via the existing access Wallerawang Power Plant access from the Castlereagh Highway.

The OTMP has been reviewed, TfNSW requires the following comments to be addressed:

- Section 2.9 of the OTMP states the number of truck movements will be dictated by the capping material source but on average there would be 6-7 truck movements per hour with a maximum peak of 12 trucks per hour and 40 light vehicle trips per day. TfNSW notes Section 2.6 of the OTMP states the haulage routes will be identified as capping material sources are identified. As per condition 6.5 (ii) of Consent 07_0005 the OTMP must detail the routes to be used to transport capping material. The OTMP needs to be updated to identify the proposed routes and associated traffic volumes as the current OTMP only shows the proposed access point to the site.
- The OTMP does not detail the measures to be implemented to ensure scheduling of heavy vehicle movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii), this needs to be addressed.

- The OTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5 (f) (iii). The OTMP needs to demonstrate consideration of the climatic conditions on the transport routes including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.
- The OTMP does not identify a process for notifying the community about project-related traffic impacts as per Condition 6.5 (f) (iii), this needs to be addressed.
- The OTMP does not identify a process to respond to emergency repair or maintenance requirements of TfNSW assets as per Condition 6.5 (f) (iii), this needs to be addressed.

Should you require further information please contact Hayley Sarvanandan on 02 9983 2372.

Yours faithfully

Alexandra Power
Team Leader Development Services
Development Services West
Regional and Outer Metropolitan

CC:council@lithgow.nsw.gov.au

From: Leanne Kearney
To: Abdullah Uddin; Lithgow City Council
Cc: Amanda Weston; Baqir Husain
Subject: RE: Development at Lidsdale Ash Dam Areas (Application No: 07_0005)
Date: Friday, 4 March 2022 10:59:51 AM
Attachments: image004.png
image006.png
image007.png
image008.jpg
image009.png

Hi Abdullah

Council officers have reviewed the documents provided, and do not have any concerns that need addressing or included in the OTMP, as the proposal doesn't utilise or impact any Council road (trucks from Castlereagh Highway (TfNSW road) will be accessing private land and using private haul roads).

Please let me know if you need any additional information regarding this matter.

Regards

Leanne Kearney | Assets and Infrastructure Planning Manager
Infrastructure Services | Lithgow City Council
Phone: (02) 6354 9999

From: Abdullah Uddin <auddin@emmconsulting.com.au>
Sent: Monday, 28 February 2022 3:30 PM
To: Leanne Kearney <leanne.kearney@lithgow.nsw.gov.au>; Lithgow City Council <council@lithgow.nsw.gov.au>
Cc: Amanda Weston <aweston@emmconsulting.com.au>; Baqir Husain <bhusain@emmconsulting.com.au>
Subject: FW: Development at Lidsdale Ash Dam Areas (Application No: 07_0005)

Good afternoon Leanne

Hope you are well.

See the email below which my colleague sent around mid-December 2021. We are yet to receive any response on this.

Just checking, council has any comments on this. We need to wrap up the project now but happy to allow another week to respond.

Could you please respond by Monday, 7 March 2022. Please feel free to call if you have any questions.

Best Regards

Abdullah Uddin

Associate Traffic Engineer, CPEng, RPEQ

T 02 9493 9500
M 0425 478 650
E auddin@emmconsulting.com.au

Connect with us

SYDNEY | Ground floor, 20 Chandos Street, St Leonards NSW 2065

From: Baqir Husain <bhusain@emmconsulting.com.au>
Sent: Wednesday, 15 December 2021 10:51 AM
To: council@lithgow.nsw.gov.au
Cc: Amanda Weston <aweston@emmconsulting.com.au>; Tim Brooker <tbrooker@emmconsulting.com.au>; Abdullah Uddin <auddin@emmconsulting.com.au>
Subject: Development at Lidsdale Ash Dam Areas (Application No: 07_0005)

Attention: Council Traffic Engineer

We have been engaged by Generator Property Management (GPM) to prepare an Operational Transport Management Plan (OTMP) for the Lidsdale Ash Repository.

About the project:

The Lidsdale Ash Repository is owned and operated by GPM with the Site having a long history of being used for disposal of waste from the WPS. GPM took ownership of the Site in September 2020 from Energy Australia NSW. The Site was used for ash disposal in conjunction with the Wallerawang Power Station (WPS) since the late 1950s but since the closure of WPS in 2014, the Lidsdale Ash Repository has been placed in care and maintenance.

Project Approval 07_0005 contains a number of conditions that need to be complied with by GPM Co NSW, as the proponent, at different stages of the Project. Condition 6 (f) of Project Approval 07_0005 requires an OTMP be developed prior to the importation of capping material from sources outside of the Lithgow local government area.

Please find attached the OTMP for the Lidsdale Ash Repository. Approval condition 6.5(f) states the following:

"an Operational Transport Management Plan for the project, which must:

(i) be prepared in consultation with RMS and Council, prior to importing capping material from sources outside of the Lithgow local government area;"

As part of the approval condition, we are seeking Lithgow Council's input to the attached OTMP. I have also attached the development consent for your information.

Given the time of year and a number of public holidays coming up, to ensure this process is kept moving we would appreciate your comments on the OTMP by January 14th 2022.

Please feel free to contact if you have any questions.

Thanks and Regards,

Baqir Husain
Traffic Engineer

T 02 9493 9500
D 02 8413 9505

Connect with us

SYDNEY | Ground floor, 20 Chandos Street, St Leonards NSW 2065

Our offices will be closed from Friday 24 December 2021 and will reopen on Tuesday 4 January 2022.

Building and Development:LGS

15 January 2025

Post Approval Consultation
Major Projects

Dear Sir/Madam,

Wallerawang Power Station - Ash Dam (PAE-79044206) – Construction and Operation Traffic Management Plan Rev 3

Reference is made to the above mentioned subject and to consultation with Council on the Construction and Operation Traffic Management Plan.

Council officers have reviewed the documents provided and advise that the Construction and Operation Traffic Management Plan Rev 3 is considered satisfactory and complies with conditions 6.3(a) and 6(f) on the consent.

Council notes that the proposal does not utilise or impact any of Council road networks (trucks from Castlereagh Highway (TfNSW road) will be accessing private land and using private haul roads). Should any of Council roads be utilised, consultation with Council will need to be undertaken.

If you require any further information in relation to this matter, please contact the undersigned by telephone during normal business hours on (02) 6354 9999 or by email at council@lithgow.nsw.gov.au.

Yours sincerely,

L. G. Stevens

Lauren Stevens
Development Planner

PO Box 19, LITHGOW NSW 2790
Tel: (02) 6354 9999 Fax: (02) 63514259
Web: www.lithgow.nsw.gov.au Email: council@lithgow.nsw.gov.au

Transport for NSW

24 January 2025

TfNSW reference: WST25/00003/001 | SF2025/001941
Your reference: MP07_0005-PA-27 | PAE-79044209

Stephen Saladine
Generator Property Management
By Email: steve.saladine@gpmco.com.au.

Review of Wallerawang Power Station – Lidsdale Ash Dam (PAE-79044206) – Construction and Operation Traffic Management Plan

Dear Stephen,

Transport for NSW (TfNSW) is responding to the request for review of a Construction and Operation Traffic Management Plan (COTMP) for the Lisdale Ash Dam Repositories, as referenced in MP07_0005 (and its modifications). The COTMP has been submitted for TfNSW consultation, via the NSW Major Projects Planning Portal, in accordance with Conditions 2.36, 2.36(a) and 6.3 (a) of the project approval MP07_0005-Mod 2, approved 13 October 2023.

TfNSW has reviewed the COTMP prepared by EMM Consulting dated October 2024, and recommends the following amendments be made to ensure the purpose of the TMP has been met in accordance with the relevant conditions of consent:

1. The COTMP does not provide details on proposed haulage routes to transport the capping material associated with the operations of the development. Whilst the plan states that haulage routes will be provided once engagement with a transport contractor has occurred, it only demonstrates the internal haulage route from the existing site access road. TfNSW are required to assess the potential impacts to the broader classified road network in the context of the proposal. Accordingly, proposed haulage routes should be clearly illustrated in the COTMP in accordance with Condition 6.3(a) within the consent and identify any sensitive land uses (e.g. school zones, residential areas) impacted by the vehicle movements and consider any conditions contained within the existing approval. (i.e. Condition 2.36(a) indicates that no capping material is to be transported via any residential roads within the Lithgow local government area (LGA) during construction and operation phase).
2. The COTMP does not identify suitable measures to be implemented to ensure scheduling of heavy vehicles movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii). A proposed schedule of transport operations, including identification of peak hours during operation and confirmation of maximum average of heavy vehicle movements per hour (currently listed as 12) should be included in the COTMP.

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3. Condition 6.3(a)(i) requires the identification of construction vehicle volumes (including staff vehicles, heavy vehicles and oversized vehicles). The traffic counts provided (using SIDRA) in the COTMP do not appear to differentiate the construction and operational traffic volumes, does not include counts or consider the impact of any oversized vehicles.
4. The COTMP does not identify any alternative routes to be used in the event of road closures and/or traffic detours during haulage as required by Condition 6.3(a)(ii). Furthermore, a process to respond to any emergency road repairs or road maintenance requirements as a result of, or during haulage, has not been provided in accordance with Condition 6.5 (f)(iii). It is noted that Section 3.9 of the COTMP refers to maintenance of haulage vehicles and does not consider impacts or repairs required to the road environment or any other TfNSW assets.
5. An appropriate community consultation strategy should be clearly detailed in the COTMP prior to operations commencing in accordance with Condition 6.3(f)(iii).
6. The COTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5(f)(iii). The COTMP needs to demonstrate consideration of the climatic conditions on the transport routes (e.g. fog, black ice, etc) including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.
7. The Code of Conduct could be updated to include clear parameters for the monitoring of driver behaviour through the use of an internal monitoring system that is performance objective based, promotes driver education and can be updated in the event of any changes during transport operations. Additionally, adherence to designated transport haulage routes (including minimising impact on residential areas) in accordance with relevant conditions should be included in the Code of Conduct.

The Planning Secretary should be satisfied that the above matter has been adequately addressed prior to approving the COTMP.

If you have any questions, please contact Brendan Croft, Development Services Case Officer on 1300 019 680 or email development.west@transport.nsw.gov.au

Yours faithfully,

Kylie-Anne Pont

Kylie-Anne Pont
Team Leader Development Services – West
Transport Planning
Planning, Integration and Passenger

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Transport for NSW

7 August 2025

TfNSW reference: WST25/00003/003 | SF2025/001941
Your reference: MP07_0005-PA-27

GPM - Generator Property Management Pty Ltd

PO Box 132 Budgewoi NSW 2262

Attention: Julian MacPhee - Julian.MacPhee@gpmco.com.au

MP07_0005-PA-27 - Wallerawang Power Station - Ash Dam - Construction and operational TMP review - Various lots - Great Western Highway, Lidsdale

Hi Julian,

Transport for NSW (TfNSW) is responding to the MP07_0005-PA-27 referred on 15 July 2025 via email.

TfNSW has reviewed the revised Construction and Operational Traffic Management Plan (COTMP) by EMM (refer Project No. E210783 RP3, Version V1, dated 11/2/2025), which was updated to include some amendments suggested by TfNSW in a correspondence dated 24 January 2025. The following comments are reiterated for consideration.

The updated COTMP has limited additional information that clarifies the specifics identified in Conditions 2.36, 2.36A, 2.36B, 6.3a), and 6.5f). In particular, the proposed haulage routes, schedule of transport operations, differentiation of construction and operational traffic volumes, and alternative routes in the event of road closures . These are explained in detail in the correspondence dated 24 January 2025.

TfNSW acknowledges the Planning Secretary should be satisfied that Conditions 6.4, 6.5, & 6.5A, have been adequately addressed prior to approving the subject OTMP.

If you have any questions, please contact Brendan Croft, Development Services Case Officer, on 1300 019 680 or email development.west@transport.nsw.gov.au.

Yours faithfully,

Brendan Croft
A / Team Leader Development Services (West)
Transport Planning
Planning, Integration and Passenger

Transport for NSW

29 August 2025

TfNSW reference: WST25/00003/004 | SF2025/001
Your reference: MP07_0005-PA-2

General Property Management Pty Ltd (GPM
Email: julian.macphee@gpmco.com.au
Council email: council@lithgow.gov.nsw.gov.au

Attention: Julian MacPhee

MP07_0005-PA-27 - Wallerawang Power Station - Ash Dam - Construction and Operational Traffic Management Plan review - Various lots - Great Western Highway, Lidsdale

Dear Julian

Transport for NSW (TfNSW) is responding to MP07_0005-PA-27 referred on 25 August 2025.

Thank you for sending the revised Construction and Operational Traffic Management Plan (COTMP), as shown in **Attachment 1**, to TfNSW to review. TfNSW has reviewed the revised COTMP by EMM (refer Project No. E210783 RP3, Version V5, dated 15/8/2025), which was updated to include amendments suggested by TfNSW in correspondence dated 7 August 2025.

TfNSW is satisfied that the concerns raised in the response dated 7 August 2025 have been addressed adequately and, on this basis, provide endorsement for the COTMP. TfNSW welcomes the opportunity to provide further advice and comment (as required) to ensure the safety and efficiency of the broader transport network.

Yours faithfully

Brendan Croft
A / Team Leader Development Services (West)
Transport Planning
Planning, Integration & Passenger

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PO Box 334 PARKES NSW 2870 | DX20256
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transport.nsw.gov.au

Our Ref: ID 3268
Your Ref:

13 August 2025

John Pola
Generator Property Management Pty Ltd
PO Box 132
Budgewoi NSW 2262

Via email

email: john.pola@gpmco.com.au
CC: craig.ronan@one.ses.nsw.gov.au wtz.ops@ses.nsw.gov.au

Dear John,

Wallerawang Ash Repository, Lidsdale - Operational Transport Management Plan

Thank you for the consultation advice and opportunity to provide comment on the Operational Transport Management Plan for the extension of Wallerawang Ash Dam Areas, 6 Banksia Street Vincentia.

The NSW State Emergency Service (NSW SES) is the agency responsible for dealing with floods, storms and tsunami in NSW. This role includes planning for, responding to and coordinating the initial recovery from floods. As such, the NSW SES has an interest in the public safety aspects of the development of flood prone land, particularly the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW.

In summary, based on the currently available information we do not have significant concerns regarding the proposed development, however**:**

- **Consider** the impact of flooding on the infrastructure and people using the roads up to and including the Probable Maximum Flood (PMF), along with the impact of climate change on the flood risks.
- **Ensure** workers and people using the site and roads during and after the upgrades are aware of any flood risk, for example through site inductions, by using signage and other flood information tools.
- **Recommend** the Operational Transport Management Plan includes instructions to act early on Severe Weather Warnings issued by the Australian Government Bureau of Meteorology (BoM). The NSW SES does not have the operational capacity to provide individualised flood warnings for each business site. Severe Weather Warnings will be the most likely form of advice about the potential for flood producing storms and rainfall. In addition, coastal system such as tides and tsunami should be included in your plan for this location.

- **Consider** closing the worksite and securing all materials and equipment prior to the start of the working day if there is a risk of riverine flooding, on receipt of advice from the BoM, or when other evidence leads to an expectation of flooding. During site works, check the BoM website prior to start of the workday for any Severe Weather Warnings.
- **Advise** that any flood response directive issued by the NSW SES or by delegated authority to others acting on its behalf must be followed. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with any site emergency response plan.
- **Recommend** pursuing, if relevant, site design and stormwater management that reduces the impact of flooding and minimises any risk to the community. Any improvements that can be made to reduce flood risk will benefit the community.

To provide additional support in doing the above, we direct you to the online resources which are available to the community on the www.ses.nsw.gov.au website which include helpful pages such as:

- Know Your Risk | NSW State Emergency Service
- Local Plans and Guides (enter your town or postcode) - which includes locally endorsed NSW SES Flood Emergency Sub Plans and Local Flood Insights
- Business Continuity Plan - online tool which steps you through the process of developing your own Business Emergency Plan.

In addition, if the construction phase of the upgrades causes disruption to the operation of local roads, this may impact the ability for emergency vehicles to use these routes. The NSW SES requests that notification be provided where there are likely to be significant delays in the operation of the roads affected by the upgrades.

Please feel free to contact Gillian Webber via email at rra@ses.nsw.gov.au should you wish to discuss any of the matters raised in this correspondence. The NSW SES would also be interested in receiving future correspondence regarding the outcome of this referral via this email address.

Yours sincerely

Elspeth O'Shannessy

Elspeth O'Shannessy
Manager Emergency Risk Assessment
NSW State Emergency Service

Attachment B

Traffic intersection counts

EMM
creating opportunities

Suburb : Wallerawang
Intersection: Castlereagh Highway/Site Access Road
Day/Date : Tuesday, 02 November 2021
AM Peak Hour

Approach			Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach					
Direction			Left			Through			Right Turn			Through			Left			Right Turn		
Time Period			Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:00	to	7:15	3	0	**3**	22	3	**25**	0	0	**0**	17	4	**21**	0	0	**0**	1	0	**1**
7:15	to	7:30	2	2	**4**	25	15	**40**	2	0	**2**	25	7	**32**	0	0	**0**	0	0	**0**
7:30	to	7:45	0	0	**0**	24	8	**32**	2	0	**2**	34	6	**40**	2	0	**2**	0	1	**1**
7:45	to	8:00	0	0	**0**	23	12	**35**	0	0	**0**	26	3	**29**	0	0	**0**	0	0	**0**
8:00	to	8:15	1	0	**1**	27	3	**30**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
8:15	to	8:30	1	0	**1**	34	3	**37**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
8:30	to	8:45	1	0	**1**	40	6	**46**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
8:45	to	9:00	0	0	**0**	25	10	**35**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
AM Totals			**8**	**2**	**10**	**220**	**60**	**280**	**4**	**0**	**4**	**102**	**20**	**122**	**2**	**0**	**2**	**1**	**1**	**2**

Approach			Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach						
Direction			Left			Through			Right Turn			Through			Left			Right Turn			
Time Period			Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	
7:00	to	8:00	5	2	**7**	94	38	**132**	4	0	**4**	102	20	**122**	2	0	**2**	1	1	**2**	**269**
7:15	to	8:15	3	2	**5**	99	38	**137**	4	0	**4**	85	16	**101**	2	0	**2**	0	1	**1**	**250**
7:30	to	8:30	2	0	**2**	108	26	**134**	2	0	**2**	60	9	**69**	2	0	**2**	0	1	**1**	**210**
7:45	to	8:45	3	0	**3**	124	24	**148**	0	0	**0**	26	3	**29**	0	0	**0**	0	0	**0**	**180**
8:00	to	9:00	3	0	**3**	126	22	**148**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**151**
AM Totals			**16**	**4**	**20**	**551**	**148**	**699**	**10**	**0**	**10**	**273**	**48**	**321**	**6**	**0**	**6**	**1**	**3**	**4**	

Suburb : Pokolbin
Intersection: Hermitage Road/Site Access Road
Day/Date : Thursday, 14 October 2021
PM Peak Hour

Approach	Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach					
Direction	Left			Through			Right Turn			Through			Left			Right Turn		
Time Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
16:00 to 16:15	1	0	**1**	60	4	**64**	0	0	**0**	37	3	**40**	1	0	**1**	0	0	**0**
16:15 to 16:30	0	0	**0**	39	2	**41**	1	0	**1**	36	2	**38**	0	0	**0**	0	0	**0**
16:30 to 16:45	0	0	**0**	35	2	**37**	0	0	**0**	43	7	**50**	1	0	**1**	0	0	**0**
16:45 to 17:00	0	0	**0**	37	3	**40**	0	0	**0**	38	10	**48**	4	0	**4**	0	0	**0**
17:00 to 17:15	0	0	**0**	38	4	**42**	0	0	**0**	30	4	**34**	3	0	**3**	14	0	**14**
17:15 to 17:30	0	0	**0**	46	4	**50**	0	0	**0**	25	5	**30**	2	0	**2**	4	0	**4**
17:30 to 17:45	0	0	**0**	38	0	**38**	0	0	**0**	21	1	**22**	0	0	**0**	0	0	**0**
17:45 to 18:00	0	0	**0**	28	2	**30**	1	0	**1**	23	3	**26**	0	0	**0**	2	0	**2**
PM Totals	**1**	**0**	**1**	**321**	**21**	**342**	**2**	**0**	**2**	**253**	**35**	**288**	**11**	**0**	**11**	**20**	**0**	**20**	

Approach	Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach						
Direction	Left			Through			Right Turn			Through			Left			Right Turn			
Time Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	
16:00 to 17:00	1	0	**1**	171	11	**182**	1	0	**1**	154	22	**176**	6	0	**6**	0	0	**0**	**366**
16:15 to 17:15	0	0	**0**	149	11	**160**	1	0	**1**	147	23	**170**	8	0	**8**	14	0	**14**	**353**
16:30 to 17:30	0	0	**0**	156	13	**169**	0	0	**0**	136	26	**162**	10	0	**10**	18	0	**18**	**359**
16:45 to 17:45	0	0	**0**	159	11	**170**	0	0	**0**	114	20	**134**	9	0	**9**	18	0	**18**	**331**
17:00 to 18:00	0	0	**0**	150	10	**160**	1	0	**1**	99	13	**112**	5	0	**5**	20	0	**20**	**298**
PM Totals	**1**	**0**	**1**	**785**	**56**	**841**	**3**	**0**	**3**	**650**	**104**	**754**	**38**	**0**	**38**	**70**	**0**	**70**	

Attachment C

SIDRA results

EMM
creating opportunities

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Baseline traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	2	0	2	0.0	0.007	4.9	LOS A	0.0	0.2	0.39	0.87	0.39	29.4
3	R2	2	1	2	50.0	0.007	9.8	LOS A	0.0	0.2	0.39	0.87	0.39	27.2
Approach		4	1	4	25.0	0.007	7.4	LOS A	0.0	0.2	0.39	0.87	0.39	28.3
East: Castlereagh Highway East														
4	L2	7	2	8	28.6	0.005	7.5	LOS A	0.0	0.0	0.00	0.63	0.00	56.8
5	T1	135	39	163	28.9	0.099	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		142	41	171	28.9	0.099	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.4
West: Castlereagh Highway West														
11	T1	124	20	131	16.1	0.065	0.1	LOS A	0.0	0.3	0.02	0.02	0.02	83.3
12	R2	4	0	4	0.0	0.065	7.5	LOS A	0.0	0.3	0.03	0.02	0.03	32.7
Approach		128	20	135	15.6	0.065	0.3	NA	0.0	0.3	0.02	0.02	0.02	79.5
All Vehicles		274	62	310	23.1	0.099	0.4	NA	0.0	0.3	0.02	0.04	0.02	77.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Baseline traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	6	0	6	0.0	0.013	5.4	LOS A	0.0	0.4	0.43	0.86	0.43	29.3
3	R2	2	1	2	50.0	0.013	13.2	LOS A	0.0	0.4	0.43	0.86	0.43	27.2
Approach		8	1	8	12.5	0.013	7.3	LOS A	0.0	0.4	0.43	0.86	0.43	28.8
East: Castlereagh Highway East														
4	L2	1	0	1	0.0	0.001	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
5	T1	185	11	261	5.9	0.139	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		186	11	262	5.9	0.139	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
West: Castlereagh Highway West														
11	T1	179	22	203	12.3	0.095	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.095	7.9	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		180	22	205	12.2	0.095	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		374	34	475	8.7	0.139	0.2	NA	0.0	0.4	0.01	0.02	0.01	79.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Baseline + operational traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	2	0	2	0.0	0.048	4.9	LOS A	0.2	2.0	0.53	0.94	0.53	28.5
3	R2	14	13	15	92.9	0.048	14.1	LOS A	0.2	2.0	0.53	0.94	0.53	24.5
Approach		16	13	17	81.2	0.048	12.9	LOS A	0.2	2.0	0.53	0.94	0.53	25.0
East: Castlereagh Highway East														
4	L2	29	14	35	48.3	0.025	7.9	LOS A	0.0	0.0	0.00	0.63	0.00	52.1
5	T1	135	39	163	28.9	0.099	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		164	53	198	32.3	0.099	1.4	NA	0.0	0.0	0.00	0.11	0.00	73.0
West: Castlereagh Highway West														
11	T1	124	20	131	16.1	0.072	0.2	LOS A	0.1	0.9	0.08	0.07	0.08	81.9
12	R2	14	0	15	0.0	0.072	7.6	LOS A	0.1	0.9	0.10	0.08	0.10	32.4
Approach		138	20	145	14.5	0.072	0.9	NA	0.1	0.9	0.08	0.07	0.08	70.9
All Vehicles		318	86	360	27.4	0.099	1.8	NA	0.2	2.0	0.06	0.13	0.06	66.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Baseline + operational traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	16	0	17	0.0	0.093	5.5	LOS A	0.3	3.0	0.54	0.95	0.54	28.7
3	R2	22	12	23	54.5	0.093	14.7	LOS B	0.3	3.0	0.54	0.95	0.54	26.4
Approach		38	12	40	31.6	0.093	10.8	LOS A	0.3	3.0	0.54	0.95	0.54	27.3
East: Castlereagh Highway East														
4	L2	13	12	18	92.3	0.016	8.7	LOS A	0.0	0.0	0.00	0.63	0.00	43.9
5	T1	185	11	261	5.9	0.139	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		198	23	279	11.6	0.139	0.6	NA	0.0	0.0	0.00	0.04	0.00	75.8
West: Castlereagh Highway West														
11	T1	179	22	203	12.3	0.095	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.095	8.0	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		180	22	205	12.2	0.095	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		416	57	523	13.4	0.139	1.2	NA	0.3	3.0	0.04	0.10	0.04	69.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Baseline + operational + cumulative traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	2	0	2	0.0	0.083	6.4	LOS A	0.3	3.3	0.72	0.98	0.72	26.7
3	R2	14	13	15	92.9	0.083	24.1	LOS B	0.3	3.3	0.72	0.98	0.72	23.2
Approach		16	13	17	81.2	0.083	21.9	LOS B	0.3	3.3	0.72	0.98	0.72	23.6
East: Castlereagh Highway East														
4	L2	29	14	35	48.3	0.025	7.9	LOS A	0.0	0.0	0.00	0.63	0.00	52.1
5	T1	306	60	369	19.6	0.213	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		335	74	404	22.1	0.213	0.7	NA	0.0	0.0	0.00	0.05	0.00	76.3
West: Castlereagh Highway West														
11	T1	125	21	132	16.8	0.076	0.4	LOS A	0.2	1.3	0.12	0.07	0.12	81.3
12	R2	14	0	15	0.0	0.076	8.9	LOS A	0.2	1.3	0.15	0.09	0.15	32.3
Approach		139	21	146	15.1	0.076	1.3	NA	0.2	1.3	0.12	0.07	0.12	70.6
All Vehicles		490	108	567	22.0	0.213	1.5	NA	0.3	3.3	0.05	0.09	0.05	70.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Baseline + operational + cumulative traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	16	0	17	0.0	0.135	5.5	LOS A	0.5	4.1	0.61	0.94	0.61	27.7
3	R2	22	12	23	54.5	0.135	22.6	LOS B	0.5	4.1	0.61	0.94	0.61	25.6
Approach		38	12	40	31.6	0.135	15.4	LOS B	0.5	4.1	0.61	0.94	0.61	26.4
East: Castlereagh Highway East														
4	L2	13	12	18	92.3	0.016	8.7	LOS A	0.0	0.0	0.00	0.63	0.00	43.9
5	T1	186	12	262	6.5	0.140	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		199	24	280	12.1	0.140	0.6	NA	0.0	0.0	0.00	0.04	0.00	75.8
West: Castlereagh Highway West														
11	T1	350	43	398	12.3	0.185	0.1	LOS A	0.0	0.1	0.00	0.00	0.00	84.8
12	R2	1	0	1	0.0	0.185	8.2	LOS A	0.0	0.1	0.00	0.00	0.00	32.8
Approach		351	43	399	12.3	0.185	0.1	NA	0.0	0.1	0.00	0.00	0.00	84.4
All Vehicles		588	79	719	13.3	0.185	1.2	NA	0.5	4.1	0.04	0.07	0.04	72.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Horizon traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	2	0	2	0.0	0.007	5.0	LOS A	0.0	0.2	0.42	0.86	0.42	29.3
3	R2	2	1	2	50.0	0.007	10.4	LOS A	0.0	0.2	0.42	0.86	0.42	27.2
Approach		4	1	4	25.0	0.007	7.7	LOS A	0.0	0.2	0.42	0.86	0.42	28.2
East: Castlereagh Highway East														
4	L2	8	2	10	25.0	0.006	7.4	LOS A	0.0	0.0	0.00	0.63	0.00	57.7
5	T1	148	43	178	29.1	0.109	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		156	45	188	28.8	0.109	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.4
West: Castlereagh Highway West														
11	T1	136	22	143	16.2	0.071	0.1	LOS A	0.0	0.3	0.02	0.02	0.02	83.4
12	R2	4	0	4	0.0	0.071	7.6	LOS A	0.0	0.3	0.03	0.02	0.03	32.7
Approach		140	22	147	15.7	0.071	0.3	NA	0.0	0.3	0.02	0.02	0.02	79.8
All Vehicles		300	68	340	23.1	0.109	0.4	NA	0.0	0.3	0.01	0.04	0.01	77.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Horizon traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	7	0	7	0.0	0.016	5.5	LOS A	0.1	0.4	0.45	0.86	0.45	29.3
3	R2	2	1	2	50.0	0.016	14.6	LOS B	0.1	0.4	0.45	0.86	0.45	27.1
Approach		9	1	9	11.1	0.016	7.6	LOS A	0.1	0.4	0.45	0.86	0.45	28.8
East: Castlereagh Highway East														
4	L2	1	0	1	0.0	0.001	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
5	T1	204	12	287	5.9	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		205	12	289	5.9	0.153	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
West: Castlereagh Highway West														
11	T1	198	25	225	12.6	0.105	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.105	8.1	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		199	25	226	12.6	0.105	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		413	38	524	8.8	0.153	0.2	NA	0.1	0.4	0.01	0.02	0.01	79.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Horizon operational traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	2	0	2	0.0	0.051	5.0	LOS A	0.2	2.2	0.55	0.94	0.55	28.3
3	R2	14	13	15	92.9	0.051	15.1	LOS B	0.2	2.2	0.55	0.94	0.55	24.4
Approach		16	13	17	81.2	0.051	13.9	LOS A	0.2	2.2	0.55	0.94	0.55	24.8
East: Castlereagh Highway East														
4	L2	30	14	36	46.7	0.026	7.8	LOS A	0.0	0.0	0.00	0.63	0.00	52.4
5	T1	148	43	178	29.1	0.109	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		178	57	214	32.0	0.109	1.3	NA	0.0	0.0	0.00	0.11	0.00	73.4
West: Castlereagh Highway West														
11	T1	136	22	143	16.2	0.078	0.2	LOS A	0.1	1.0	0.08	0.06	0.08	82.0
12	R2	14	0	15	0.0	0.078	7.8	LOS A	0.1	1.0	0.09	0.08	0.09	32.4
Approach		150	22	158	14.7	0.078	0.9	NA	0.1	1.0	0.08	0.06	0.08	71.7
All Vehicles		344	92	389	27.1	0.109	1.7	NA	0.2	2.2	0.06	0.12	0.06	67.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Horizon operational traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access Road														
1	L2	17	0	18	0.0	0.103	5.7	LOS A	0.4	3.2	0.56	0.95	0.56	28.5
3	R2	22	12	23	54.5	0.103	16.3	LOS B	0.4	3.2	0.56	0.95	0.56	26.3
Approach		39	12	41	30.8	0.103	11.7	LOS A	0.4	3.2	0.56	0.95	0.56	27.2
East: Castlereagh Highway East														
4	L2	13	12	18	92.3	0.016	8.7	LOS A	0.0	0.0	0.00	0.63	0.00	43.9
5	T1	204	12	287	5.9	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		217	24	306	11.1	0.153	0.5	NA	0.0	0.0	0.00	0.04	0.00	76.2
West: Castlereagh Highway West														
11	T1	198	25	225	12.6	0.105	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.105	8.2	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		199	25	226	12.6	0.105	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		455	61	573	13.1	0.153	1.2	NA	0.4	3.2	0.04	0.09	0.04	69.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Attachment D

Example haulage routes

EMM
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D.1 Walker's Quarry, Marrangaroo, NSW

1 963 Great Western Hwy, Marrangaroo NSW 2

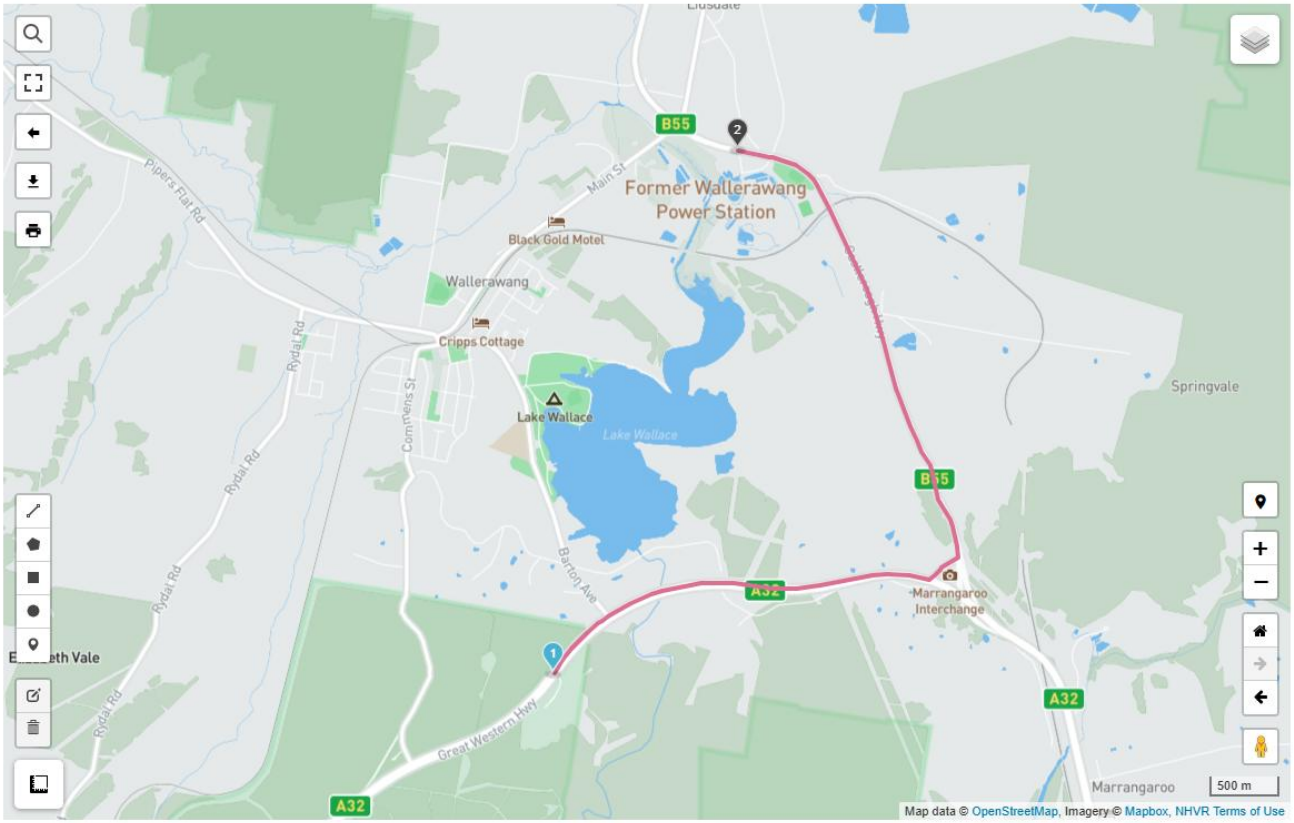
2 Castlereagh Hwy, Wallerawang NSW 2845

Route planner tool

PLAN ROADS DISTANCE LAYERS SUMMARY

RMNSW1: Transport for New South Wale... (6 roads)

Road name
Unknown, Wallerawang
Great Western Highway, Wallerawang
Great Western Highway, Marrangaroo
Castlereagh Highway, Marrangaroo
Castlereagh Highway, Lidsdale
Castlereagh Highway, Wallerawang



D.2 Austen Quarry, Hartley, NSW

1 385 Jenolan Caves Rd, Hartley NSW 2790

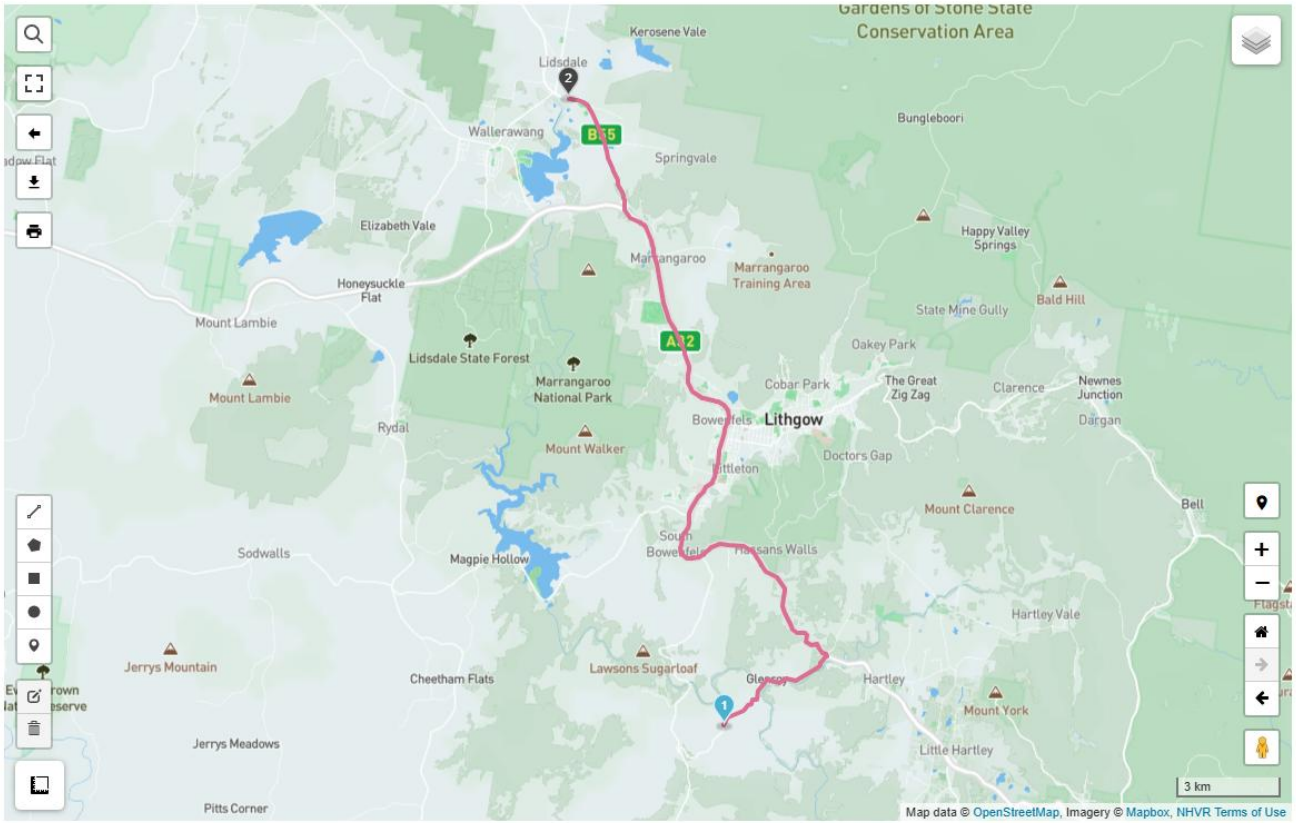
2 Castlereagh Hwy, Wallerawang NSW 2845

Route planner tool

PLAN ROADS DISTANCE LAYERS SUMMARY

RMNSW1: Transport for New South Wale... (10 roads)

	Road name
✓	Jenolan Caves Road, Hartley
✓	Unknown, Hartley
✓	Great Western Highway, Hartley
✓	Great Western Highway, South Bowenfels
✓	Great Western Highway, Bowenfels
✓	Great Western Highway, Marrangaroo
✓	Castlereagh Highway Offramp, Marrangaroo
✓	Castlereagh Highway, Marrangaroo
✓	Castlereagh Highway, Lidsdale
✓	Castlereagh Highway, Wallerawang



D.3 TfNSW Medlow Bath Upgrade

1 42 Great Western Highway, Medlow Bath NSV

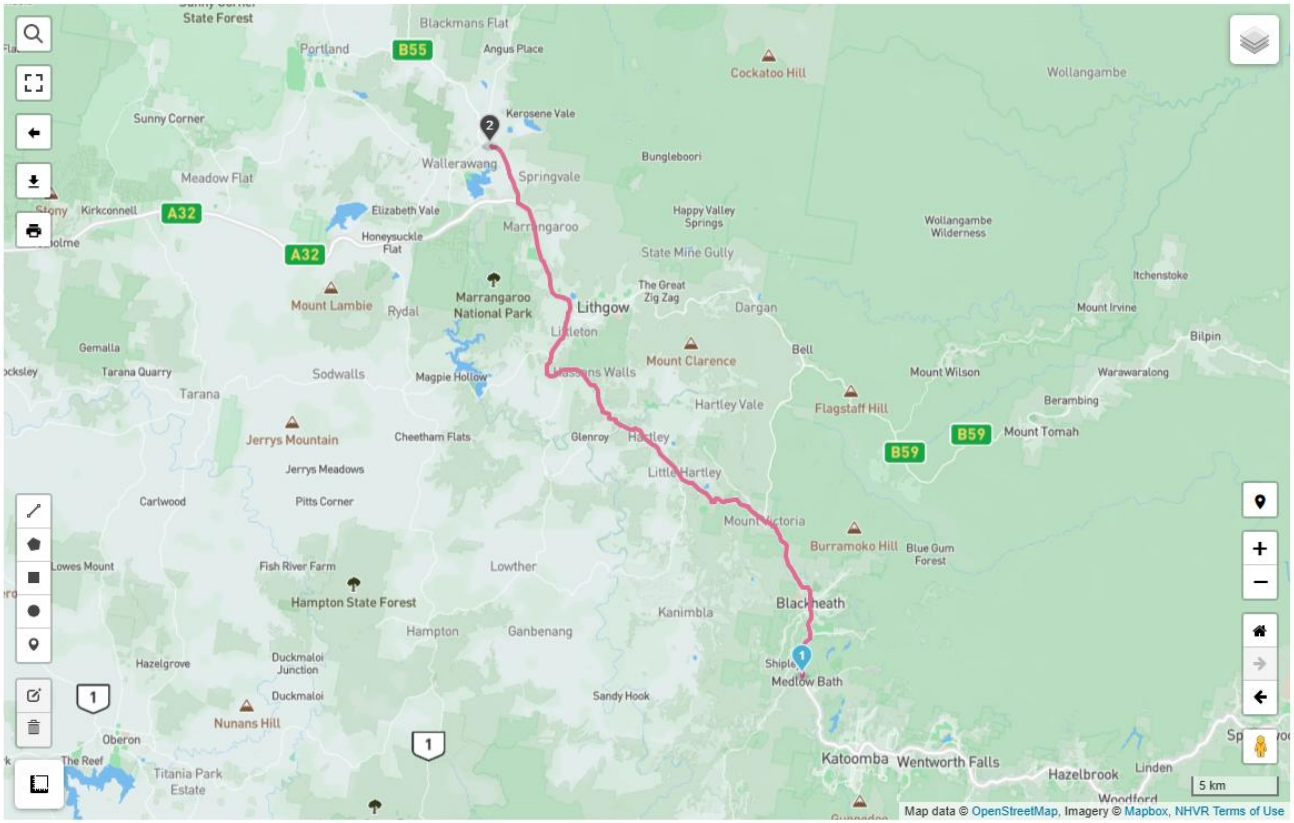
2 Castlereagh Hwy, Wallerawang NSW 2845

Route planner tool

PLAN ROADS DISTANCE LAYERS SUMMARY

RMNSW1: Transport for New South Wale... (12 roads)

	Road name
✓	Great Western Highway, Medlow Bath
✓	Great Western Highway, Blackheath
✓	Great Western Highway, Mount Victoria
✓	Great Western Highway, Little Hartley
✓	Great Western Highway, Hartley
✓	Great Western Highway, South Bowenfels
✓	Great Western Highway, Bowenfels
✓	Great Western Highway, Marrangaroo
✓	Castlereagh Highway Offramp, Marrangaroo
✓	Castlereagh Highway, Marrangaroo
✓	Castlereagh Highway, Lidsdale
✓	Castlereagh Highway, Wallerawang



Attachment E

ER letter of endorsement

EMM
creating opportunities

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31 March 2026

John Pola
Environmental Manager
Generator Property Management - Lidsdale
110 Skelly Road
Lidsdale NSW 2790

Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement - Construction and Operation Traffic Management Plan Rev 7

Dear John,

Following a review of the documents provided for the Construction and Operation Traffic Management Plan (O&CTMP) Rev 7, I can provide the following endorsement.

The O&CTMP Rev 7 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.5a. Consultation with TfNSW and Lithgow Council has been completed and all comments have been addressed.

All conditions of approval and mitigation measures are contained in the O&CTMP Rev 7.

The document is endorsed for submission for approval.

Yours sincerely

David Bone
Independent Environmental Representative
dbone@emmconsulting.com.au

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