
Transport Management Plan

BADGERYS CREEK QUARRY AND BRICK MAKING FACILITY

September 2013

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1. Introduction

1.1. Purpose

This Transport Management Plan (TMP) has been prepared to:

- outline the traffic and transport management to be implemented to ensure the relevant conditions of approval for the Badgerys Creek Quarry and Brick Making Facility are complied with;
- describe the measures to ensure commitments in the Environmental Assessment in relation to traffic and transport are implemented;
- describe various elements of the TMP required by the conditions of approval, including the Drivers' Code of Conduct and the requirement for safety audit;

1.2. Scope and Application

This TMP is applicable to the quarrying, rehabilitation, brickmaking, and product storage and dispatch of Boral in its Badgerys Creek operations.

1.3. Interface with Environmental Strategy

In operational terms, the TMP aims to minimise the transport and traffic noise impacts of the quarrying and brick making activities at Boral's Badgerys Creek facility on local residents in particular and road users in general. In this way, the TMP supports the Environmental Strategy of Badgerys Creek Quarry and Brick Making Facility by helping minimise harm to the environment.

2. Environmental Context

2.1. Environmental Context

The Badgerys Creek project site is located in a rural area and is surrounded by rural residences, agricultural activities and small industry. The region forms part of the South West Growth Centre as identified by the *State Environmental Planning Policy (Growth Centres), 2006* where the adopted Structure Plan identifies Liverpool as a major centre and the project site to be within a future industrial/employment precinct.

Access to the Boral site is via Martin Road from Elizabeth Drive. Martin Drive has been assessed as currently serviceable, but is in need of considerable maintenance for its entire length. Boral operations, i.e. dispatch of finished products and the delivery of raw materials, account for a major portion of impacts on Martin Road to the south of the Australian Native Landscapes (ANL) facility (i.e. from 1.6 to 2.1 kilometres south of Elizabeth Drive). Impacts north of ANL are due to combined truck loadings from Boral and ANL operations.

The proposed project will be employing new packaging technology which is expected to reduce truck movements even as dispatch capacity is increased. Traffic assessment carried out at the time of development application indicated that the level of service of the Martin Road/Elizabeth Drive intersection was satisfactory (i.e. with approximately 60% spare capacity and minimal average delays). As the proposed project would result in a decrease in the number of vehicles using this intersection, the intersection operations would slightly improve and would not require upgrading.

In 2012, Boral reviewed its brick production capacity due to current uncertain economic conditions and downturn in residential housing activity. Boral determined that the reduced demand could be supplied by its Bringelly Brickworks and therefore decided to temporarily shut down production at its Badgerys Creek facility. Quarrying and brick production will be suspended during the shutdown period but ongoing facility and equipment maintenance will be carried out. Operation of the retail display facility and the occasional dispatch of bricks from the remaining inventory on-site will continue.

Boral has sought a Section 75W modification to the conditions of approval for the expansion of the Badgerys Creek operations so that relevant environmental management measures can be modified or deferred during the shutdown period.

2.2. Aspects and Impacts

The Badgerys Creek Quarry and Brickmaking project has the potential to impact on the local road network as shown in Table 1 below.

Table 1 Road Network Impacts

Activity	Traffic and Transport Aspect	Potential Environmental Impacts
Dispatch of finished product	Movement of trucks to and from site, using Martin Road	<ul style="list-style-type: none"> • Deterioration of Martin Road, which also affects other road users • Congestion of Martin Road in case of truck breakdowns • Deterioration of Level of Service of Martin Road/Elizabeth Drive intersection • Minor impact during shutdown period due to limited dispatch
Delivery of Raw Materials (treated water, coal wash, other operation and maintenance inputs)	Movement of trucks to and from site, using Martin Road	<ul style="list-style-type: none"> • Deterioration of Martin Road, which also affects other road users • Congestion of Martin Road in case of truck breakdowns • Minor impact during shutdown period due to suspension of production
Visitor access to Retail Display	Movement of vehicles to and from the Retail Display, using Martin Road	<ul style="list-style-type: none"> • Minor impact as the level of truck and vehicle movements will remain essentially the same
Float of heavy equipment	Movement of heavy vehicles to and from site, using Martin Road	<ul style="list-style-type: none"> • Deterioration of Martin Road, which also affects other road users • Congestion of Martin Road in case of truck breakdowns
Employee movement	Movement of vehicles to and from site, using Martin Road	<ul style="list-style-type: none"> • Minor impact as employee vehicle movements would remain the same at 12 vehicles per peak hour
Shutdown Period	Occasional vehicle movements and storage yard activities Visitor access to the Retail Display	<ul style="list-style-type: none"> • It is considered that traffic and transport impacts during the shutdown period would be minor due to the significantly reduced level of activities, including suspension of operations.

2.3. Risk Assessment

The main traffic and transport risk associated with the Badgerys Creek and Brick Making Facility is pedestrian and road user safety, in particular for local residents and users of Martin Road. This risk will be mitigated by the management measures outlined in this TMP.

Risks related to road traffic noise are addressed in the Noise Management Plan.

3. Regulatory Framework

3.1. Relevant Legislation

- *Roads Act 1993*
- *Road Rules Act 2008*

3.2. Standards and Guidelines

- *Guide to Traffic Generating Developments (RMS, 2002)*
- Boral's Road Transport Code of Conduct

3.3. Approval Requirements

- Approval under the *Roads Act 1993* for any upgrade of Martin Road.
- Project Approval (under Sec 75J of the EP&A Act 1979), in particular the following conditions of approval:

Road Haulage

24. Prior to recommencing quarrying operations, the Proponent shall:
- (a) erect signage on Elizabeth Drive advising of "trucks turning";
 - (b) install a wheel wash on the quarry access road to prevent material being deposited in Martins Road; and
 - (c) ensure the access driveway from Martin Road is capable of catering for all heavy vehicles associated with the project in accordance with AS2890.2, to the satisfaction of Council.

Transport Management Plan

25. By the end of August 2013, the Proponent shall prepare and implement a Transport Management Plan, to the satisfaction of Council. The plan must include:
- (a) a safety audit of project-related truck transport on local roads;
 - (b) a drivers' code of conduct to minimise the impacts of project-related trucks on local residents; and
 - (c) the measures that would be put in place to ensure compliance with the drivers' code of conduct.

Monitoring of Brick Transport

26. The Proponent shall:
- (a) keep accurate records of the:
 - number and weight of bricks transported from the site (on a monthly basis); and
 - the date and time of loaded truck movements from the site; and
 - (b) provide the Director-General with a summary of these truck movements on request.

Operating Conditions

27. The Proponent shall ensure that:
- (a) bricks are only transported from the site by road;

- (b) a maximum of 60 laden brick trucks (i.e. 120 movements) exit the site per day, Monday to Friday; and
- (c) a maximum of 20 laden brick trucks (i.e. 40 movements) exit the site per day on Saturdays.

Road Upgrade and Maintenance Contribution

28. The Proponent shall:

- (a) repair Martin Road to the satisfaction of Council by 30 June 2013 and in accordance with the agreement dated 9 April 2013 attached as Appendix 7; and
- (b) prior to recommencing quarrying operations, enter into a formal agreement with Council for the:
 - i. upgrade and widening of Martin Road from the site entrance to the entrance of Australian Native
 - ii. Landscape; and
 - iii. annual road maintenance contributions to be paid to Council, based on the weight of brick
 - iv. products and associated materials transported from and to the site, for the life of the project, to the satisfaction of the Director-General.

If there is any dispute between the Proponent and Council, then either of the parties may refer the matter to the Director-General for resolution.

4. Training and Resource Requirements

4.1. Training

Personnel operating trucks and vehicles to and from the Project Site would be required to undertake a site-specific health and safety induction, specifying operating hours, avoidance of the AM and PM peak periods, and vehicle speed limits on Martin Road. The Boral Extractive Materials Road Transport Code of Conduct (November 2011), which spells out actions aimed at minimising the impacts of haulage and delivery trucks on local residents and other road users, will be adopted for the project and will be included in the induction.

A heavy vehicle protocol would be developed for the Project Site and distributed to relevant staff and contractors during induction. The protocol would deal with such issues as timing of vehicle movements, idling of vehicles, speed limits on Martin Road and parking.

4.2. Resource Requirements

Boral is required by the project conditions of approval to negotiate with Liverpool City Council an agreement relating to road upgrade and maintenance contributions. Evidence of this agreement will need to be provided to the Director-General. Details of this agreement relevant to transport management will be included in future updates of this Transport Management Plan.

During the shutdown period, Boral has sought a deferral of negotiations with Council until the future of the Badgerys Creek facility becomes more certain.

On recommencement of operations, Boral would need to erect signage on Elizabeth Drive advising of “trucks turning”, install a wheel wash on the quarry access road to prevent material being deposited in Martin Road and ensure the access driveway from Martin Road is capable of catering for all heavy vehicles associated with the project in accordance with AS2890.2, to the satisfaction of Council.

Prior to recommencing quarrying operations, Boral would need to enter into a formal agreement with Council for the upgrade and widening of Martin Road from the site entrance to the entrance of Australian Native Landscape and annual road maintenance contributions to be paid to Council based on the weight of brick products and associated materials transported from and to the site, for the life of the project, to the satisfaction of the Director-General.

5. Traffic and Transport Management

5.1. Shutdown Period Management Measures

In April 2012, the proponent, Boral Clay and Concrete (NSW) announced the temporary shutdown of the quarry and brick making facility with effect from 30 March 2012. As at April 2013, the facility remained shut down. Boral will review its operations at a future stage, considering market conditions and business needs to determine when operations will recommence. During the shutdown period, activities at the facility will be limited. Hence, the opportunity for interactions with the environment during this period is limited.

Traffic during the shutdown period will comprise light vehicles (display centre customers and Boral office staff) and occasional truck movements despatching product (maximum 10 truck movements per day). This level of traffic will not impose any significant burden on the local traffic network.

During the shutdown period, the site's Health Safety and Environment Manager will be based at Badgerys Creek and will maintain a weekly environmental inspection regime including:

- Property boundary integrity, internal dam levels and neighbouring creeks;
- Raw material quarry pits and access roads;
- Internal access roads (paved and unsealed);
- Water tanks - water recycling (empty) and fire fighting supply tanks;
- Waste material areas and sewage treatment plant;
- Oil store, diesel tank and chemical store;
- Internal drainage from hardstands and access roads; and
- Factory buildings (internal and external).

The HSE Manager will also maintain regular contact with neighbouring residents to resolve any issues.

Prior to 30 June 2013, Boral will repair Martin Road to the satisfaction of Liverpool City Council. Traffic and environmental management of these works will be in accordance with Council requirements.

5.2. Traffic and Transport Management Measures

The following management measures will be implemented to manage the potential impacts of the proposal on traffic and transport.

Item	Actions	Responsible Staff	When
1	Personnel operating trucks and vehicles to and from the Project Site would be required to undertake a site-specific health and safety induction, specifying operating hours, avoidance of the AM and PM peak periods and vehicle speed limits on Martin Road.	HSE Manager	At all times

Item	Actions	Responsible Staff	When
2	A heavy vehicle protocol would be developed for the Project Site and distributed to relevant staff and contractors during induction procedures. The protocol would deal with such issues as timing of vehicle movements, idling of vehicles, speed limits on Martin Road and parking.	HSE Manager	At all times
3	Unnecessary vehicle movements would be minimised where possible.	Operations Manager	At all times
4	Deliveries would be scheduled on larger capacity 'Truck and Trailer' vehicles rather than 'Truck Only' vehicles where possible to minimise truck movements.	Operations Manager	At all times
5	Where non-routine vehicular movements are required, such as for the transport of oversized loads, where practical and subject to appropriate standards, Boral would undertake these tasks outside of normal working hours and/or the peak AM and PM periods.	Operations Manager	At all times
6	Keep accurate records of the number and weight of bricks transported from the site (on a monthly basis); and the date and time of loaded truck movements from the site; and Records of truck movements will be compiled and provided to the Director-General on request.	Operations Manager	At all times
7	Signage will be erected on Elizabeth Drive as agreed with RMS.	Operations Manager	Prior to recommencement of recommencement of quarrying and brickmaking operations
8	A wheel wash will be installed on the quarry access road to prevent material being deposited in Martins road	Maintenance Manager	Prior to recommencement of recommencement of quarrying and brickmaking operations

Item	Actions	Responsible Staff	When
9	A Transport Management Plan will be prepared and implemented to the satisfaction of Liverpool City Council.	HSE Manager	Within three months of recommencement of quarrying and brickmaking operations
10	A summary of truck movements will be provided to the Director-general on request. Monitoring of brick transport will continue to be undertaken during the Shutdown Period even though there the level of transport activities will be significantly lower.	HSE Manager	During quarrying and brickmaking operations.

5.3. Drivers' Code of Conduct

Boral will implement its Extractive Materials Road Transport Code of Conduct (November 2011) aimed at minimising the impacts of project-related trucks on local residents and other road users.

The main objectives of Boral's Road Transport Code of Conduct include the following:

- Maximising safety in all aspects of road haulage of extractive materials.
- Minimising the impact of Boral's trucks hauling to and from Boral sites on other road users and the community.
- Compliance with Local and State Government rules and regulations

Driver responsibilities are spelled out under the Code. Among these responsibilities are the following:

- holding a current appropriate licence for the truck they are operating;
- complying with all traffic rules and regulations;
- ensuring loads are appropriately covered/secured as and when required;
- ensuring all drawbars, tailgates and side combing rails are cleaned of all material;
- driving in a manner at all times that is in accordance with road and load conditions;
- ensuring correct load tipping procedures are used at all times;
- complying with all environmental guidelines and/or legislation whilst undertaking duties;
- using horn as a warning device only;
- yielding "right of way" whenever appropriate to ensure safe passage of other road users;
- at all times leaving adequate distance between trucks to allow safe passing by other road users;
- decreasing truck speeds to minimise dust and noise around private dwellings, road works and stationary vehicles;
- not using engine brakes in built-up areas or where signs are posted;

Measures to enforce the Code of Conduct include the following:

- application of standard procedure for addressing transport issues and incidents that is consistent across all Boral Construction Materials operations.
- recording and investigation of transport issues & incidents via an incident and complaint reporting system
- implementing appropriate actions for all recorded incidents and complaints.
- taking disciplinary action in the event that investigations reveal non-compliance with the Code of Conduct.

6. Monitoring and Improvement

6.1. Monitoring of Brick Transport

In accordance with the project conditions of approval, Boral will keep accurate records of the following:

- number and weight of bricks transported from the site (on a monthly basis); and
- the date and time of loaded truck movements from the site.

Boral will provide a summary of these truck movements on request to the Director-General.

6.2. Safety Audit

Boral will engage a qualified road safety auditor to carry out a safety audit of project-related truck transport on local roads. The scope of the safety audit would be the length of Martin Road between the brickworks site and Elizabeth Drive, a distance of approximately 2.1km.

6.3. Truck Movement Recording during the Shutdown Period

Boral will continue to keep accurate records of the number and weight of bricks transported from the site (on a monthly basis), and the date and time of loaded truck movements from the site, and provide the Director-General with a summary of these truck movements on request.

7. Reporting and Record Keeping

7.1. Truck Movement Monitoring Records

Truck movement monitoring records will be compiled and maintained. Monitoring records will be kept by the HSE Officer.

7.2. Recording Transport Issues

Transport issues and incidents will be recorded and investigated using Boral's incident and complaint recording systems called "Sitesafe."

8. TMP Forms and Procedures

8.1. Driver Code of Conduct

The Boral Extractive Materials Road Transport Code of Conduct (November 2011).