

WOOLGOOLGA TO BALLINA UPGRADE

HAULAGE STRATEGY FOR RICHMOND RIVER TO PIMLICO (SECTION 10 – 11)

Document Number - W2B-PC0-D-EX-RPT-00007

REV	DATE	DESCRIPTION	ORIGINATOR	REVIEWER	APPROVER
Α	28/9/20147	Final	J Bruin	S Lawrence	

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Document approval

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1. INTRODUCTION AND PURPOSE

This strategy has been in accordance with DP&E Letter 2017 09 11 Jali and Gibsons Borrow Sites CoA D22, DPE Letter 2017 09 08 Lumley Hill Borrow Site CoA D22 (Attachment 3) and addresses the SPIR mitigation T2 - A strategy will be prepared for bulk earthworks haulage between the crossing of the Richmond River and the interchange at Wardell. The strategy will seek to maximise the extent of haulage within the project boundary and limit the need to haul material through the town of Wardell.

The above documents require submission of the bulk earthworks haulage strategy associated with both the Gibsons/Jali and Lumleys Hill Borrow Sites, including forecasting of any material haulage along local roads and through Wardell township in Section 10 and Section 11 of the Woolgoolga to Ballina Pacific Highway upgrade. The project acknowledges all conditions outlined in the respective documents and these conditions will be satisfied for works associated with the borrow sites.

The haulage strategy for Richmond River to Pimlico seeks to maximise the extent of haulage within the project boundary and limit the need to haul material through the town of Wardell.

2. BORROW SITE HAULAGE STRATEGY

The borrow site haulage strategy has been prepared in consultation with the Richmond River to Pimlico Civils and Earthworks contractor, which reflects the approvals and conditions detailed in the respective Borrow Site Management Plans. The general intent of the strategy is to minimise haulage along local roads where possible to reduce impacts to the local community, traffic, road condition and risk to fauna. However, it is noted that there will be a requirement for some local road usage for material haulage from the borrow sites, particularly in periods where movement along the corridor is unavailable, unsafe or impractical. These haulage movements will be managed in accordance with the Minister's Conditions of Approval for the approved project.

The haulage strategy has been developed to effectively manage haulage movements from the borrow sites directly onto the project corridor wherever possible within the project's constraints, which include the prioritisation of building an internally accessed haul road along the project corridor to allow efficient haulage and safety of the workforce. An estimated total of 1.1 million cubic metres (m³) of material will be extracted from the Gibsons/Jali and Lumley Hill borrow sites for use as earth and rock fill and selected material on Sections 10 and 11 of the Woolgoolga to Ballina Pacific Highway upgrade. Of this, 943,000m³ is expected to be hauled internally through the project corridor haulage access, limiting movements along local roads or the existing Pacific Highway. The remaining 164,000m³ is expected to be hauled out of Gibsons/Jali. borrow site, along Old Bagotville Road to Carlisle Street. Material will then move either along Wardell Road to the project corridor or onto the existing Pacific Highway for placement in the works in the northern section of work, near Coolgardie Road and Whytes Lane.

During the first six months, haulage movements from the borrow sites using local roads will be required due to internal corridor access constraints. During the period the internal haulage corridor is being built and has constraints, the majority of material from Gibsons/Jali borrow site to the Coolgardie interchange area will be required for program critical soft soil treatments and surcharge.

The figure below shows the haulage routes of borrow site material travelling by road.



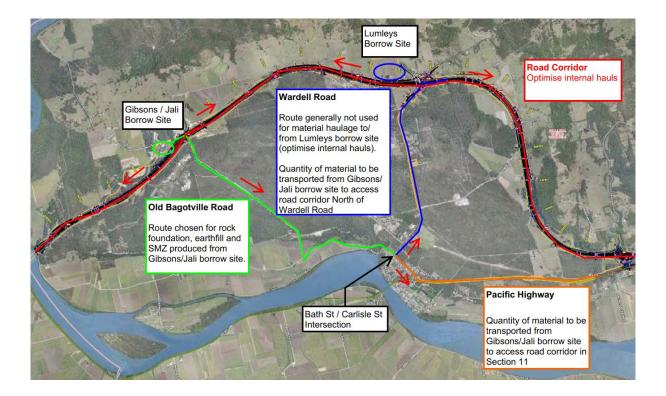
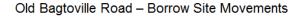


Figure 1 – Borrow site haulage routes

Given that there are minimal sources of cuttings available within the project corridor due to the generally low-lying terrain, the Gibsons/Jali and Lumleys Hill borrow sites offer approximately two thirds of the total fill material to construct the highway formation. The Gibsons/Jali borrow site is also the only source of gravel and rock for this section of the project, reducing the impact on the local road network from otherwise importing materials from various offsite quarries and therefore providing substantial financial savings for the project.

The figures below show the expected timing and number of daily truck movements to and from the borrow sites using the local road network. These are based on average wet weather assumptions and the current construction program. The figures give an indication of how the haulage strategy will demonstrate compliance with the borrow site approval requirements.





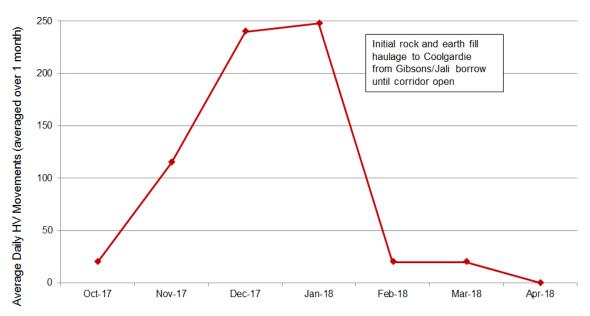


Figure 2 – Predicted borrow site material haulage on Old Bagotville Road

Pacific Highway - Borrow Site Movements

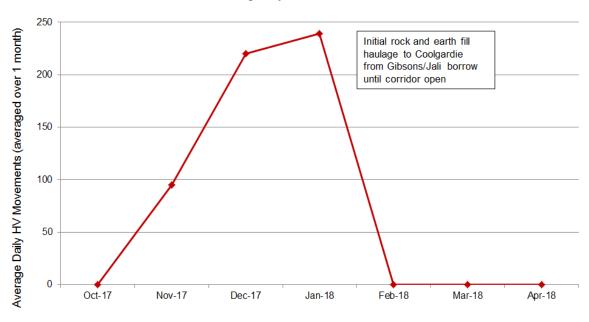
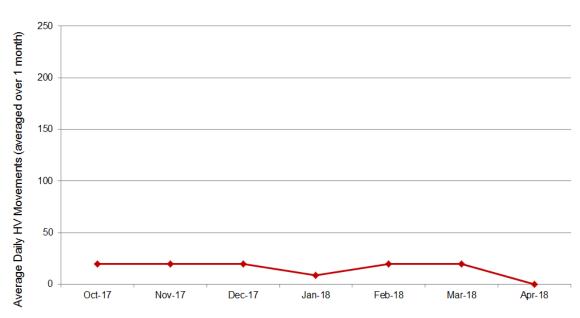


Figure 3-Predicted borrow site material haulage on Pacific Highway





Wardell Road - Borrow Site Movements

Figure 4 - Predicted borrow site material haulage on Wardell Road

It should be noted that assumptions have been made in preparation of the data shown within this memorandum for the purpose of informing the current haulage strategy. The haulage strategy and heavy vehicle movements from the borrow sites are subject to change, however in regards to truck numbers, the project will ultimately be bound by condition 9 of the Gibsons and Jali DP&E letter (dated 11/09/17), i.e. heavy vehicle movements for material haulage to and from the Gibsons/Jali borrow site on Old Bagotville Road shall not exceed maximum 350 per day, or 250 per day averaged over one month, operating with project approved construction hours (Monday to Friday 7.00am to 6.00pm, inclusive and Saturday 8.00am to 5.00pm and at no time on Sunday or public holidays).

The strategy outlined here is provided for information only and several assumptions have been made, namely:

- The haulage strategy is based on current construction program with averaged Northern NSW wet weather allowance, and may be subject to change with differences in actual weather observed (e.g. drier conditions may mean increase to daily HV movements shown noting though that compliance with DP&E approval of haulage vehicle movements
- The haulage strategy is based on the current estimate of material types/quantities won from cuttings and material types/quantities required in embankments, which may be subject to change depending on actual ground conditions observed and actual foundation treatments chosen
- Haulage strategy is based on current estimates of material types/quantities able to be produced from each borrow site, which may be subject to change depending on actual nature of materials in the borrow sites
- Heavy vehicle movements shown are only those associated with material haulage to/from the borrow sites
- Daily truck movements shown are averaged over the calendar month. At times, there will be peaks in haulage production that are close to the maximum 350 movements per day/ averaged 250 movements per month
- One haulage truck movement is equal to one-way travel, i.e. to and from borrow site equals two
 movements



- The understanding of Condition 4 of the Gibsons and Jali DP&E letter is that construction vehicles are not to be queued on Old Bagotville Road before gates open or 7.00am, whichever is the later time. As such, construction vehicles for the Gibsons/Jali borrow sites are to be parked within the borrow site or on the alignment to avoid queuing on the local road and allow safety checks and pre-start meetings to occur prior to the approved starting time. Out of Hours Approvals will be dealt with under the project's out of hours works procedure if required to start work prior to 7.00am
- Based on the current construction program it is assumed that the heavy vehicle movements associated with the Lumleys Hill Batch Plant operations will not occur concurrently with the haulage strategy shown in this memorandum
- The heavy vehicle movements associated with the ancillary site at the Lumleys Hill borrow site have been included in the strategy outlined in this memorandum.

3. COMMUNITY AND STAKEHOLDER ENGAGEMENT APPROACH

The consultation approach that accompanies the haulage strategy has been designed to be implemented in a staged manner, providing neighbours and the community with timely and accurate information about haulage progress, estimated haulage movements and routes throughout the nominated period.

Initially, a notification outlining the outcomes of community consultation and Department advice, as well as start of work details has been prepared to manage resident and road user expectation and sentiment. A similar notification will also be prepared regarding the use of the Lumleys Hill borrow site. These will be distributed in accordance with the *Communications and Stakeholder Engagement Strategy* and the Minister's Conditions of Approval for the approved project.

The engagement approach will include:

- Regular notifications incorporating project progress, timelines and maps, highlighting the haulage
 routes, and information about traffic movements and how they are being managed and monitored to
 be distributed to Woolgoolga to Ballina upgrade email distribution list, letterbox dropped to neighbours,
 key stakeholder groups and local community meeting places, including those identified outside of the
 immediately impacted area commencing immediately and continuing throughout the work activity
- During high volume haul periods, VMS boards will be installed in various locations and utilised as part
 of the traffic management plan to alert local road users to the increase in heavy vehicle movements
 around key areas along the road network commencing at least 5 days in advance of identified peak
 periods
- Detailed messages about anticipated higher heavy vehicle movement periods will be included in Roads and Maritime Woolgoolga to Ballina Pacific Highway upgrade traffic alerts, which are widely distributed to local and regional media outlets – commencing immediately
- Notifications and information sharing at regular and opportunistic stakeholder meetings and local community markets during the period – commencing immediately
- Progress updates for the work activity will be included in upcoming quarterly Community Updates for the Richmond River to Ballina Bypass section of the upgrade – commencing December 2017.

These activities will be delivered in addition to the regular engagement that Pacific Complete and Lendlease representatives will continue to provide to immediate and impacted neighbours, as well as key stakeholders as part of project delivery.

In addition to providing project notifications as part of general distribution, Ballina Shire Council will be informed in advance through regular Communications team meetings to ensure that local roads issues around Council's work schedule (eg. Diversions/delays) and external community events can be factored into the project team's planning. These meetings also provide a regular avenue to capture community feedback received by Council that may not have been received directly by the project and to periodically review community sentiment about the project.



All communications material related to the work will include project contact details to facilitate any enquiries that the work may create, eg. Community Relations email address and the project 1800 number.

4. ADDITIONAL MITIGATION MEASURES RELEVANT TO HAULAGE STRATEGY

In addition to maximising the haulage of excavated material within the construction alignment the project will undertake the following measures relating to heavy vehicle haulage:

- Installation of rumble grids on the exit points to shake of lose rocks and minimise mud tracking on local roads
- Precondition road surveys of local road haulage routes prior to haulage occurring
- Upgrade of intersections at Bath and Carlisle Street commenced on 26 September 20178, to ensure safe vehicle movements. These intersection upgrades and been developed in consultation with Ballina Shire Council
- Regular inspection of local haulage roads to ensure pavement in safe working condition and limit operational noise impacts
- Drivers of haulage vehicles to go through induction program which will include focus on appropriate
 driver behaviour and cover such matter as; avoiding the use compression brakes where possible on
 local roads, strict adherence to speed limits, hours of operation and risks to fauna
- Implementation of construction vehicle related signage on local roads covering speed limits and limit
 use of compression brakes.
- Implementation of Pacific Complete's In vehicle Management System (IVMS) that will monitor all
 haulage vehicles from the borrow sites allow project to track and record vehicle location, speed and
 brake usage.
- Structural condition reports of residents' houses that live adjacent to the haul path within the Wardell township, have been undertaken.
- We have undertaken a joint dilapidation study with the Ballina Shire Council and formally issued this to them. LendLease will also undertake dilapidation surveys of the road network next week.
- A survey pickup of the road surface has been undertaken, along Old Bagotville Road, at Ballina Shire Councils request, to ensure the road surface is returned in the same surface level once complete.

5. AGENCY CONSULTATION

The DP&E letters also outline that the bulk earthworks strategy for the borrow sites be prepared in consultation with the Department (i.e. this document), the project Environmental Representative and Ballina Shire Council. Consultation has been undertaken with the Environmental Representative on 21 September 2017 and with Ballina Council on 22 September 2017.

6. FURTHER APPROVALS

The project team notes its intention to review progress with the Secretary with regards to a potential application for an extension to the period beyond six months. Separate communication and consultation will be carried out for a potential application which will discuss an updated construction program at that time and future anticipated requirements with regard to project progress.



Appendix 1: Record of Ballina Shire Council Consultation – Borrow Site Haulage Strategy

MINUTES OF MEETING



MEETING SUBJECT: Pacific Highway Upgrade - Woolgoolga to Ballina - Project Update

DATE AND TIME: 22 September 2017 | 10.30am

Paul Busmanis (PB), Engineering Works Manager, Ballina Shire Council

Alex Dalrymple (AD), Operations/Maintenance Coordinator, Ballina Shire Council

Debbie Brown (DB), Portion D Senior Communications and Stakeholder Engagement Officer.

Pacific Complete

Matthew Wilkinson (MW), Portion D Lead, Pacific Complete

ATTENDEES: Matthew Chesher (MC), Senior Project Engineer, Pacific Complete

Jamie Quartermaine (JQ), Project Manager, Lendlease

Cindy Thomas (CT), Community Engagement Officer, Lendlease

John Bruin (JB), Environmental Lead, Pacific Complete

Daryl Faithfull (DF), Senior Superintendent, Lendlease

Danny Palhares (DP), Quarry Manager, Pacific Complete

LOCATION: Portion D Site McAndrews Lane Pimlico

DOCUMENT NO. W2B-PC0-D-AX-MOM-00166 A IFI

	SUBJECT/NOTES .	RESPONSIBLE PARTY	DATE RAISED	ACTION DATE
1.	Project Status Update	5 - 5 5 - 4 5 - 4 5 - 5 - 5 - 5 - 5 - 5		
1.1.	Planning to hand over possession of site to LLE on 26/9. Pac Hwy fencing ongoing, due to finish end Sept. Wardell intersection work commences this week.	MW	10/8	Note
1.2.	P2T3 underway. Currently 22% complete. Piling works about to commence.	MW	10/8	Note
1.3.	Koala phased resource reduction etc should be done by early Oct 2017.	MVV	10/8	Note
1.4.	Community consultation update. LLE & PC been meeting with individuals prior to LLE commencing work, to provide an understanding of what to expect and to create an interaction interface with stakeholders.	DB	10/8	Note
2.	Construction			-
2.1.	Borrow Site Haulage strategy. Aim to minimise impact around township of Wardell & minimise effect on traffic flow.	MC/JB	22/9	Note
2.2.	DP&E conditions (relating to haulage) Gibson's/Jali: Specific EWMS Speed restrictions on OBR (70kph, 10kph between fauna grids). IVMS record Induction & training – awareness of Long-nosed Potoroos and driver behaviour along OBR. No truck queueing on OBR at borrow site entrances to the borrows before gates open of 7am (whichever is the later).	SW	23/6	Note

MINUTES OF MEETING

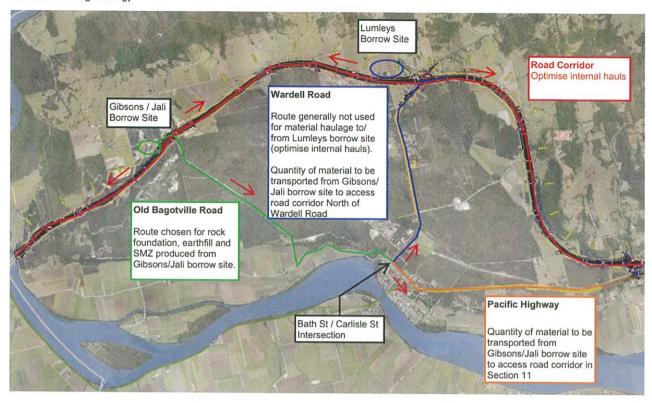


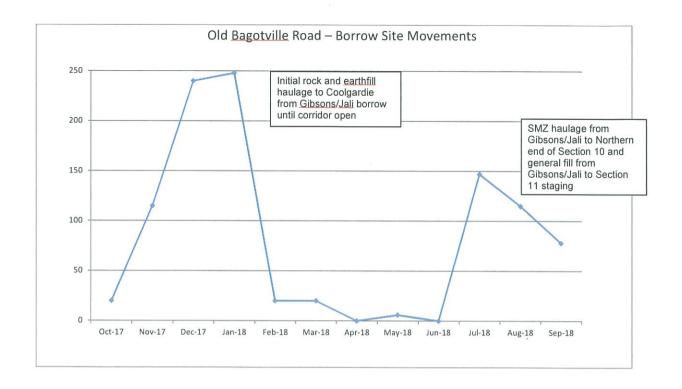
	SUBJECT/NOTES	RESPONSIBLE PARTY	DATE RAISED	ACTION DATE
	Daily inspections of fencing & grids on OBR prior to hauling.			
	Monthly monitoring of animal movements.			
	 Extend predator control in the Wardell Heath to Dec 2017. 			
	Heavy vehicle movements for material haulage not exceed max 350 per day, or 250 per day averaged over one month.			
	 Material haulage to/from the borrow site on OBR shall cease when the haulage track within the construction corridor is complete, unless otherwise agreed 			
	Preparation of haulage strategy for the borrow site, including use of local roads			
	Lumley's Borrow Site:			
	 Preparation of haulage strategy for the borrow site, including use of local roads. 			
	Specific EWMS.	4		
2.3.	Material haulage to/from borrow site on OBR shall cease when haulage track is complete.	МС	22/9	Note
	Haulage strategy numbers:			
2.4.	Up to 250 movements Nov 17 to Feb 18 at which time will reapply for new strategy.	MC	22/9	Note
	Next spike will be June 2018.			
2.5.	Compression braking strategy will be implemented.	MC	22/9	Note
	Assumptions			
	 Secretary approval would be required to allow haulage along Old Bagotville Road after first 6 months. 			
	Strategy based on current program with contract wet weather allowance – subject to change with differences in actual weather observed (e.g. drier conditions may mean increase to daily HV movements shown).			
	Haulage strategy is based on the current estimate of material types won from cuttings and material types/quantities required in embankments, which may be subject to change depending on actual ground conditions observed and actual foundation treatments chosen.			
2.6.	 Haulage strategy is based on current estimate of material types/quantities able to be produced from each borrow site, which may be subject to change depending on actual nature of materials in the borrows. 	MC	22/9	Note
	HV movements shown are only those associated with material haulage to/from the borrow sites.			
	Daily truck movements shown are averaged over calendar month (1 month for graphs, 3 months for haulage diagrams). At times, there will be peaks in haulage production that are close to the 350 movements per day / 250 movements per month.			
	1 movement = one way, i.e. to and from borrow site is 2 movements.			

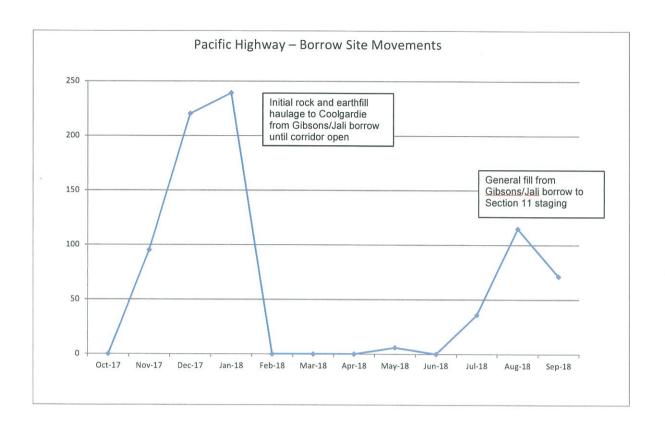
MINUTES OF MEETING

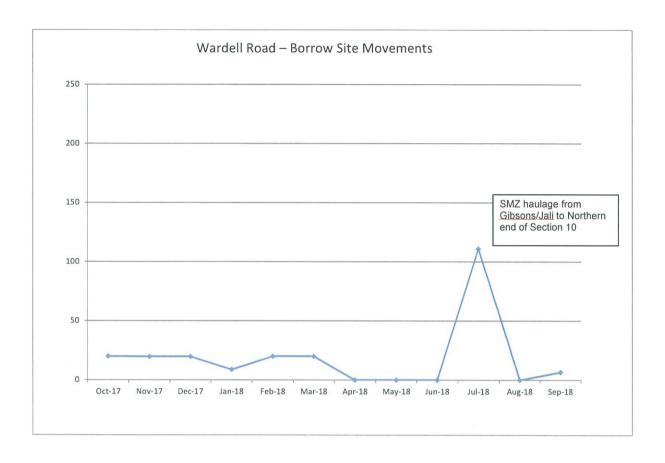


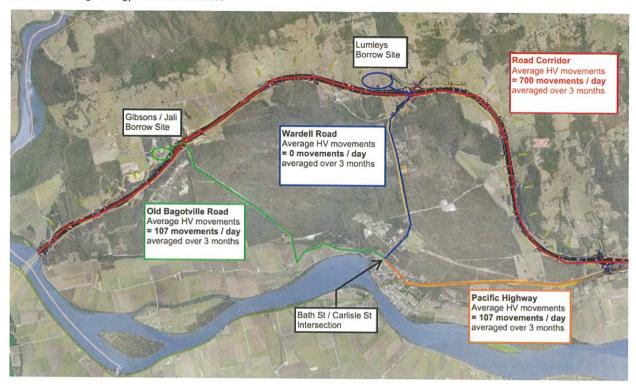
	SUBJECT/NOTES	RESPONSIBLE PARTY	DATE RAISED	ACTION DATE
2.7.	If necessary, vibration monitoring can be implemented.	MW	22/9	Note
2.8.	Dilapidation surveys of road pavements have been done. Upgrade & maintenance of current road pavements and haul roads will need to be implemented for duration of project. BCC raised issue re road deterioration due to increased truck movements and heavy haulage which creates more stress on road, therefore it may be up to project to ensure road is maintained. Needs to be managed. PC/LLE to agree ongoing maintenance strategy.	MVV	22/9	Note
2.9.	BCC - Back Channel Road access for RRB - concerns re condition & width of road. Need to discuss with Portion F. Alignment will be cleared prior to RRB works commencing.	AD	22/9	For Portion F
2.10.	 LLE 2 week look ahead: Contractor to start mobilising from 24/9. Clearing works. Heavy machinery to mobilise in next month mainly to borrow sites (not regular movements, mostly 1-offs). 	JQ	22/9	Note
2.11.	Teven Stockpile plan to be outlined at next usual meeting. Flood modelling plan has been shared.		22/9	Note
2.12.	Intersection upgrades - should be complete in a 7-10 days. Documentation can be provided in any preferred format.	MVV	22/9	Note
2.13.	Signage update: RMS (Irwin Perring) has consulted re new signage on highway. RMS rep wants to attend next BCC meeting to discuss. BCC are welcome to invite any interested parties to next meeting.	DB	22/9	Note
2.14.	Road sealing progress: Price has been provided, for sealing on Back Channel Road. BCC has provided a breakdown - \$38k of which BCC provides \$3k (estimate only).	МС	22/9	Note
3.	Community Engagement Update			
3.1.	Gibsons Jali borrow site plans - notifications will go out to community outlining haulage strategy following this meeting. Most of residents on affected streets have already been consulted re commencement of heavy machinery movements etc.	DB	22/9	Ongoing
3.2.	Discussions with community will be held re vibration monitoring etc.	DB	22/9	Note
4.	Upcoming Meetings			
4.1.	Next project update meeting - 12 October 12.30pm on site at Pimlico (Boulder Room)			Note

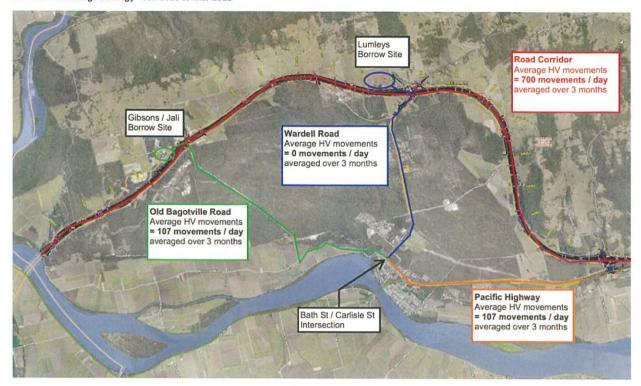


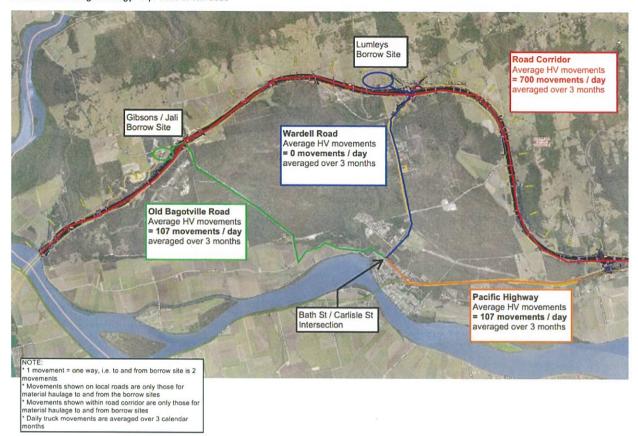


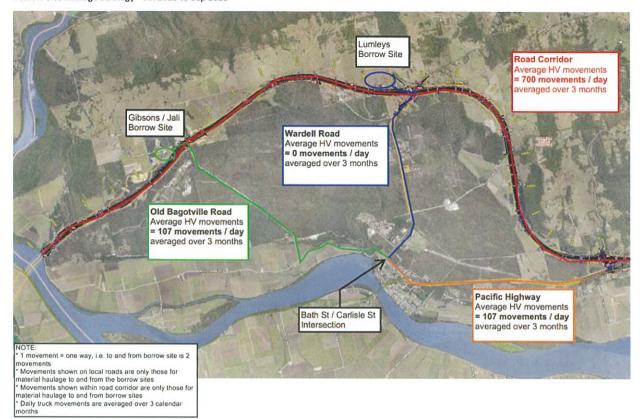






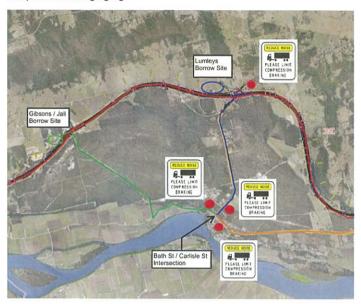








Compression Braking Signage





Appendix 2: DP&E Approval Letter Jali and Gibsons Borrow Sites (11/9/17) and DP&E Approval Letter Lumleys Hill Borrow Site (8/9/17)



Contact: Michael Young Phone: 02 9274 6437

mail: michael.young@planning.nsw.gov.au

Our ref: 14/11502

Mr Bob Higgins General Manager, Pacific Highway Roads and Maritime Services PO Box 546 GRAFTON NSW 2460

Attention Scott Lawrence

Dear Mr Higgins

Pacific Highway Upgrade Woolgoolga to Ballina Project (SSI- 4963) – Jali and Gibsons Borrow Sites

I refer to your letter dated 27 June 2017 submitting the Borrow Site Management Plans for the Jali borrow site and Gibsons borrow site in accordance with condition D22. Following discussions with the Department revised Management Plans were submitted for approval on 16 August 2017. Further discussions occurred on impacts to the Long-nosed Potoroo with Roads and Maritime Services (RMS) advising on 7 September 2017 final agreement to proposed measures.

The Department has reviewed the revised Management Plans for the Jali and Gibsons borrow sites and is satisfied the requirements of condition D22 have been adequately addressed. Material from the borrow sites would be hauled in the construction corridor for use on the project. However, until the construction corridor haulage track is constructed, material will be hauled on public roads. This is expected to be required for a period of four to six months. Although the haulage of material on local roads has been reduced from that originally proposed, the movement of heavy haulage vehicles on local roads through Wardell township is still substantial. Accordingly it is recommended that the bulk earthworks haulage strategy for the Lumleys Hill borrow site include the haulage of material from the Jali and Gibsons borrow sites.

Impacts to the Long-nosed Potoroo was identified, particularly from material haulage along Old Bagotville Road. The Department has worked with the Environment Protection Authority (EPA) and the Commonwealth Department of the Environment and Energy (DOEE) on measures to address potential risks to the Potoroo.

The Department notes that measures to manage and mitigate the establishment, operation and rehabilitation of the borrow sites are contained in Table 6-1 of the respective management plans. It is also noted that RMS has committed to prepare Environmental Work Method Statements for the borrow sites.

I wish to advise you that I have approved the Jali Borrow Site Management Plan (Revision 5, August 2017) and the Gibsons Borrow Site Management Plan (Revision 6, August 2017) in accordance with condition D22, subject to:

- 1. The implementation of the management and mitigation measures outlined in Table 6-1 of the respective Management Plans;
- 2. Maximum speed of 70km/hr along Old Bagotville Road and 10km/hr through the gap between the fauna grids, for all Woolgoolga to Ballina upgrade construction vehicles (Pacific Complete and contractor's vehicles). Construction vehicles must have an In-Vehicle Management System (IVMS) installed. Pacific Complete and contractors must maintain an In-Vehicle Management System Register that records the number and

speed of vehicles that use Old Bagotville Road. The Register shall be established following approval of the borrow site management plans and maintained for the duration of material haulage along Old Bagotville Road. A copy of the Register shall be provided to the Department on request;

3. Update construction personnel induction/training courses to include awareness of Long-

nosed Potoroos and driver behaviour along Old Bagotville Road;

4. No queuing of construction vehicles at the entrances to the Jali and Gibsons borrow sites before gates open or 7.00am, whichever is the later:

 Undertake daily inspections of the fenced section of Old Bagotville Road and the grids, for animals trapped on the road side of the fence, and breaches of the fauna fence, prior to pre-start/vehicle haulage commencing;

6. Incidences of threatened fauna trapped, injured or killed within the fenced section of Old Bagotville Road shall be reported to the Department, EPA and DOEE, and a review of the existing controls undertaken. The results of the review and the need for additional

measures shall be discussed with the Department;

7. Undertake monthly monitoring of animal movements in the gap between the grids, and at the eastern end of the fenced section of Old Bagotville Road for the duration of material haulage on Old Bagotville Road, unless otherwise agreed by the Secretary. The results of the monitoring shall be reported to the Department, EPA and DOEE following the completion of each monitoring period;

8. Extend the predator control program in the Wardell Heath to December 2017. On completion, the program shall be reviewed with the EPA to determine the need for

further predator control activities;

 Heavy vehicle movements shall not exceed 250 heavy vehicle movements per working day (to and from the Jali and Gibsons borrow sites) on Old Bagotville Road averaged over a month. The maximum number of heavy vehicle movements per day shall not exceed 350 (2-way);

10. All material haulage from the Jali and Gibsons borrow sites on Old Bagotville Road shall cease when the haulage track within the construction corridor is completed, unless

otherwise agreed by the Secretary;

- 11. In seeking the Secretary's approval to continue material haulage on Old Bagotville Road beyond 6 months, the review required by requirement 12 shall be submitted with the request;
- 12. The connectivity measures for the Long-nosed Potoroo shall be reviewed by the Secretary six months after the commencement of material haulage and following the cessation of material haulage on Old Bagotville Road. The review shall be prepared with the EPA and DOEE, and include:
 - Details of daily traffic volumes on Old Bagotville Road based on up to date traffic counts;
 - Results of fauna monitoring carried out during material haulage (roadkill and fauna movement);
 - Summary of non-compliances recorded in the In-Vehicle Management System Register;
 - d) Signage and speed limits for the duration of construction; and
 - e) Retention of the temporary fauna fencing and impacts on Koalas;
- 13. If vehicle numbers following the cessation of material haulage on Old Bagotville Road are more than 100 vehicles per day, the temporary fence is required to remain in place for the duration of construction. Additional connectivity and mitigation measures for the Long-nosed Potoroo shall be investigated with the EPA and DOEE, and submitted for the approval of the Secretary.

14. The development of an Environmental Work Method Statement for the establishment, operation and rehabilitation of the borrow sites in consultation with the Department and relevant agencies prior to the commencement of construction; and

15. The inclusion of material haulage on local roads from the Jali and Gibsons borrow sites in the bulk earthworks haulage strategy required for the Lumleys Hill borrow site.

The Department requests RMS update the Threatened Mammal Management Plan to include the above management and mitigation measures for the Long-nosed Potoroo. A copy of the updated plan shall be provided to the Department prior to material haulage on Old Bagotville Road commencing.

Should you have further queries regarding this matter, please contact Michael Young on (02) 9274 6437.

Yours sincerely

Glenn Snow

Director Transport Assessments

As nominee of the Secretary