Appendix I

Submissions
23 June 2014

Reference: SF2013/157878

Damian Bonser
Project Coordinator
Network Integrity team
Telstra
Locked Bag 5035
Parramatta NSW 2124

Cc: F1102490@team.telstra.com

Dear Mr Bonser

RE: Upgrade of the Pacific Highway - HW10 Ourimbah Street to Parsons Road, Lisarow

Roads and Maritime Services (Roads and Maritime) are proposing to upgrade the Pacific Highway - HW10 Ourimbah Street to Parsons Road at Lisarow, as shown in Appendix A. A project Review of Environmental Factors (REF) is currently being prepared by Jacobs on behalf of Roads and Maritime.

Roads and Maritime is carrying out formal consultation with Telstra as part of the REF. As such, this letter seeks to provide Telstra with an opportunity to provide comment on the proposal, and to discuss any requirements regarding potential impacts to or relocation of Telstra’s infrastructure. A brief outline of the proposal is attached below and shown graphically in Appendix B.

It would be appreciated if you could provide any comments regarding this proposal by 14 July 2014, 21 days from the date of this letter.

We would be pleased to provide further information if required. In this regard our Project Development Manager Ms Teresa Ting may be contacted on 02 4379 7037 or by email Teresa.TING@rms.nsw.gov.au.

Yours sincerely

Craig Leckie
Senior Project Development Manager
Central Coast

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Roads & Maritime Services
Level 1, The Pavilion Building 29-37, George Street, Woy Woy NSW 2256 | PO Box 766 Woy Woy NSW 2265
T 02 4379 7001 | F 02 4379 7032 | E Central.Coast.Office@rms.nsw.gov.au www.rms.nsw.gov.au
Background

The Pacific Highway north of Gosford is the urban arterial road providing access to Gosford’s northern suburbs and the Pacific Motorway (M1) at Ourimbah. This section of the Pacific Highway currently carries around 30,000 vehicles per day from regional and local areas.

Roads and Maritime Services (Roads and Maritime) are upgrading the Pacific Highway between Lisarow and the M1 Pacific Motorway in four stages. The first stage, which involved upgrading the Dog Trap Road intersection, was completed in July 2007. The second stage, which involved widening the highway between Glen Road and Burns Road at Ourimbah, was completed in January 2010. The design for stage 3 between Glen Road and Ourimbah Street has been completed and is awaiting construction funding.

Roads and Maritime propose to upgrade the Pacific Highway between Ourimbah Street and Parsons Road, Lisarow (the proposal), refer to Appendix A. The existing highway is comprised of a single lane in each direction between Manns Road, Wyoming, to Glen Road, at Pacific Highway. This road currently experiences congestion during peak traffic periods. Stage 3 involves upgrading the Pacific Highway to a four lane road between Ourimbah Street and Parsons Road, Lisarow, over a distance of about 1.6 kilometres. The proposal is located in the Gosford Local Government Area.

Proposal description

Currently Roads and Maritime have developed a 20% concept design, refer to figures included in Appendix B. The main features of the proposal include:

- Widening to include two additional 3.3 metre wide lanes (one northbound and one southbound)
- Widening of shoulders by up to 2 metres, for consistent widths along the length of the proposal
- Maintaining a 60 km/h design and posted speed limit
- A new rail over bridge replacing the existing bridge over the Main North Rail Line at Railway Crescent on the Pacific Highway
- Intersection upgrades at:
  - Railway Crescent and Pacific Highway intersection: Providing a wider radius of the curve approaching the Pacific Highway, and traffic lights at the intersection
  - Dora Street and Railway Crescent intersection: Adjusting the intersection to the south-west by about 30 metres, and enforcing a no right turn from Dora Street to Railway Crescent
  - MacDonalds Road intersection: Installing new traffic lights at the intersection
  - Rail maintenance access road: Relocation of the access road about 100 metres to the east, with all vehicle movements permitted at the intersection
  - Chamberlain Road intersection: Line work and relocation of traffic lights.
- Raised concrete median along the length of the proposal, and at the approaches to intersections at Railway Crescent, MacDonalds Road and Chamberlain Road
- Seven retaining walls at:
  - Pacific Highway, south west of Taylor Road, next to the southbound lane
  - Pacific Highway, south west of MacDonalds Road, next to the southbound lane
  - Pacific Highway, south of the rail over bridge, on both sides of the road
  - Corner Pacific Highway and Railway Crescent, directly north of the rail over bridge
  - Pacific Highway, north of Railway Crescent, on both sides of the road.
- New pavement for the length of the proposal and tie ins to existing road
- Shared pedestrian cycleways and footpaths throughout the proposal area. Safety fencing will be provided for pedestrians in steep areas
• Retaining existing bus bays
• Kerb and guttering along the length of the proposal
• Up to two water quality basins, located near Lisarow railway station
• About nine property acquisitions and about 11 partial acquisitions. These will be confirmed during detailed design
• Compound and stockpile sites, which will be identified during concept design.

Program

The proposal is expected to take about 24 months to build. Work would commence once funding is secured.

Working hours

It is anticipated that most of the construction activities would take place during standard working hours (outlined in Table 1). Some work, however, would occur outside of standard working hours to avoid impacts to road traffic, including night works. The rail over bridge would also be built during rail possessions.

All work outside of standard working hours would be minimised. Stakeholders potentially impacted by the proposal, including local residents and businesses, would be contacted before work begins. Approval from the Office of Environment and Heritage would also be sought regarding the work that would occur outside of the standard working hours.

Table 1 Standard working hours

<table>
<thead>
<tr>
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<th>Times</th>
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<tr>
<td>Monday – Friday</td>
<td>7.00 am to 6.00 pm</td>
</tr>
<tr>
<td>Saturday</td>
<td>8.00 am to 1.00 pm</td>
</tr>
<tr>
<td>Sunday and Public Holiday</td>
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</tr>
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APPENDIX A Regional locality map
Upgrade of the Pacific Highway, Ourimbah Street to Parsons Road, Lisarow

 Jacobs does not warrant that this document is definitive nor free of error and does not accept liability for any loss caused or arising from reliance upon information provided herein.
APPENDIX B The Proposal
Upgrade of the Pacific Highway, Ourimbah Street to Parsons Road, Lisarow
Dear Craig

Thank you for providing Gosford City Council with the November 2013 Community Update detailing the Preferred Option for the section of the Pacific Highway Upgrade (between Ourimbah Street and Parsons Road, Lisarow).

Please find summarised below, review comments on this proposal from key staff within Gosford City Council, for your consideration.

<table>
<thead>
<tr>
<th>Item</th>
<th>GCC Reviewer</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ed Sukesh</td>
<td>1. Provide adequate capacity for drainage pipes to enable a resolution or partial solution to the flooding of &quot;Noble's&quot; land, between the highway and that railway.</td>
</tr>
<tr>
<td></td>
<td>Manager Infrastructure Planning 18/11/13</td>
<td>2. Address the requirements of the Cutrock Creek Floodplain Management Plan which requires any proposed works to prepare a detailed flood study to show that the proposed works will not significantly affect flood levels or flows to adjoining properties or elsewhere in the catchment in all floods up to PMF. This includes any cumulative affect. More information is provided in DCP 115 Building in Flood Liable Areas.</td>
</tr>
<tr>
<td>2</td>
<td>Vic Tysoe</td>
<td>3. Prepare a detailed drainage and flood study to show that there will be no stormwater drainage or overland flow impacts that would adversely affect adjoining properties.</td>
</tr>
<tr>
<td></td>
<td>Advisor Flooding and Drainage Planning 27/11/2013</td>
<td>4. Upgrade or construct new drainage so that culverts under the roads cater for flows up to the 1% AEP flood.</td>
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<tr>
<td></td>
<td></td>
<td>4. Aim to make the Pacific Hwy flood free in at least the 1% AEP flood event and preferable up to the PMF so as to act as an major road for emergency access during severe flood</td>
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<tr>
<td></td>
<td>Steven Green</td>
<td>David Medcalf</td>
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<td>--------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Steven Green Advisor Transport Planning 22/11/13</td>
<td>David Medcalf Coordinator Project Implementation 28/11/2013</td>
</tr>
</tbody>
</table>

5 Address Water Cycle Manage and provide measures that will alleviate the impacts created by increased run-off from permanent surfaces.

6 Allow for future connection to a proposed footpath/cycleway that will run from the NE side of the intersection of McDonalds Rd and Pacific Hwy and extend northerly along the western side of the railway adjacent to Pluim Park (refer to Scott Burton who is preparing draft designs for more detail).

7 Use the information provided in the recently completed Flood Study for Ourimbah Creek 2013 to assist in addressing the impacts. A Data Sharing Agreement may be set up for this purpose.

3 Steven Green

1 The proposed shared ped/cycle path be extended from the western side of Pacific Hwy into northern side of Macdonalds Road where it intersects Pacific Highway and into Tuggerah Street to at least access into Pluim Park. This is because there is a large generation of cyclists, especially young who would use this facility for training and games if it were available, similarly, as is the case for safe access at Adcock Park West Gosford.

4 David Medcalf

1 The RMS preferred option utilises existing local roads. It is considered appropriate for the RMS to bear the full cost of these roads being upgraded to be fit for the purpose intended and to include these roads in the State funded State Road network including continuing responsibility for funding future maintenance work in these roads.

2 The current Apportionment of Cost Guidelines for the RMS (November 2008) advise that the Roads Authority funds meet the cost of an agreed basic level of service to cater for traffic conditions for the life of the project whilst Council meets the costs of development of works in excess of that agreed standard. Council considers that this upgrade is of regionally significance and the full cost of the project should be funded by the State Government.

3 Access by Council's Waste Collection Contractor to all residential and commercial properties should be considered during the planning and construction staging. Consultation with Council staff in regard to this matter is requested. Please liaise with Glen
| 4 | Pestell, Manager Waste and Emergency Services.  
Gateway signage for south bound motorists (advising them of entry into the Gosford LGA) should be designed in consultation with Council staff. |
|---|---|
| 5 | Mark Stables  
Senior Environmental Assessment Officer  
28/11/2013 |
| 1 | The preferred Ourimbah Street and Parsons Road Lisarow option has the potential to result in direct and indirect impacts on the threatened flora species Melaleuca biconvexa and the endangered ecological communities Freshwater Wetlands on Coastal Floodplains and Swamp Sclerophyll Forest on Coastal Floodplains. These wetland communities also provide potential habitat for a range of threatened and non threatened fauna species. Given this, ecological assessments undertaken as part of the Review of Environmental Factors (REF) should explore mitigation and offset measures that maintain or improve existing wetland and high biodiversity areas within the Narara, Lisarow and Ourimbah floodplains. |
| 2 | The REF should also give consideration to the aims and objectives of State Environmental Planning Policy 19 – Bushland in Urban Areas, with particular focus on works adjacent to Council reserves R0219 – Lisarow Wetland Reserve and R0034 Pacific / Chamberlain Road Reserve. |
| 6 | Mark Smith  
Maintenance Coordinator  
20/11/13 |
| 1 | Please ensure that the design is to consider future maintenance issues, specifically drainage maintenance relating to proposed culverts and drainage lines. |
| 7 | Cathy Newton / Water and Sewer Engineering Assessment Officer |
| **Gosford to Wyong Trunk Main (GWTM):**- impacted by proposals west of the rail corridor. |
| The RMS report identifies the trunk main route, its change in size from DN900 to DN750 and a DN600 trunk main branch at Narara Valley Drive; however emphasis of the main’s criticality in the security of the region’s water supply – Gosford and Wyong LGAs – requires redress within the report. The main is required for regular transfers between Gosford and Wyong water supply systems, and is not limited to supply during drought or water treatment plant shutdown. |
| The report’s has included reference to proposed swabbing works where the main reduces from DN900 to DN750 within Railway Crescent. The insertion of valve at the location was performed and with no future works proposed works on the trunk main been |
completed. It should be noted while the trunk main has a degree of cover the subject valve will be impacted by proposals requiring reduction in finished levels.

Road design incorporating a finished location of the trunk main within the road pavement will not be considered.

**Narara Gravity Main (NGM):**- impacted by proposals west of the rail corridor.

Within the area of proposed road impact the NGM ranges in size and material type from DN525 and DN600 VC at the north to DN750 HOBAS and VC in vicinity of the rail crossing and southern boundary of the nursery at No.4 Manns Rd to the south. The main carries significant flows from the Lisarow, Niagara Park and Narara and is considered a major main critical to the operation of the sewer system. Works to the main shall require submission of Plan of Management incorporating a Work Method Statement, a Risk Management Plan and an Emergency Plan should a failure of the sewer carrier main occur during the course of works to the main.

Council’s Water and Sewer Engineer Technical support recommends risk assessment be undertaken to identify risks and consequence of damage to critical items of infrastructure i.e. GWTM and the NGM. The risk assessment should encompass construction and operating risk, road damage in the event of critical items fail, the capability of the relevant authorities to repair damaged infrastructure including road and other services and associated contingencies.

The balance of water and sewer assets impacted by the proposed options include water and sewer reticulation, water distribution, sewer carrier, major water trunk and sewer rising (pressure) mains.

Minimum finished cover, minimum horizontal and vertical clearances to all water and sewer assets shall be to Sydney Water Editions of WSAA Water Supply Code and Sewerage Code of Australia and GCC addendums and GCC’s Minimum Clearance Standard, whichever is the greater. Considered impacts include the finished locations of utility services and road construction techniques / methods and as such details are to be provided to enable full assessment of option(s). Increased minimum horizontal and vertical clearance apply on large major trunk mains including the Gosford Wyong Trunk Main,
sewer rising mains and larger gravity mains eg. the Narara Gravity Main critical to the operation of the water and sewer systems. While the crossings of roadways may be inevitable the location of water and sewer mains within roadways is not considered acceptable.

Where required, water and sewer assets shall be relocated to the Water Authority’s defined street allocation services corridor. Water and/or sewer relocation design plans to Council’s accepted design standards for water supply and sewerage shall be submitted to Council’s Water and Sewer Section for approval. The RMS will be responsible for the full cost of design and construction of main relocations.

The pipe material of Council’s existing asset may present additional considerations for any proposed construction. Clearances may need to be increased to ensure disturbance doesn't incur damage to existing water and sewer assets. Compaction for trenching or road sub-base work within close proximity to asbestos (AC) and cast iron (CICL) assets is restricted to methods not incorporating mechanical vibration.

The finished locations of water and sewer assets are to remain accessible at all times (24 hours unobstructed / unrestricted access).

Additional comment shall be provided upon provision of detailed design.

The route of RMS’s preferred highway upgrade option impacts various water and sewer assets ranging in size from 100mm mains to 900mm mains. Council’s 900mm water supply trunk main located at the northern end of this proposal, as well as large sewer pressure and gravity mains in the area of the Chamberlain Rd / Pacific Hwy intersection, along the eastern side of the Pacific Hwy between McDonalds and Chamberlain Roads, will be affected by the proposed route and may require relocation to Council’s satisfaction. Early consultation is encouraged to establish locations and design options to minimize impacts on these assets. A full assessment of the extent to which water and sewer assets are impacted will be carried out upon submission of concept road infrastructure designs.

Designs for the relocation of water and sewer assets shall comply with relevant standards, including the Water Services of Australia (WSAA) Water Supply and Sewerage Codes. Assets not identified as
requiring relocation shall be afforded minimum clearances to the subject WSAA codes and Gosford Council's Minimum Clearance Standard. Should protection of water and / or sewer mains be specified by the Water Authority conformance with Gosford Council's guidelines for “Building Over or Near Council Water and Sewer Mains” will be required. The proponents are advised to arrange a meeting with Council’s W&S Development Group once a preliminary route and mains affected have been identified. Please contact Council’s Water & Sewer Asset Development Officer on Tel.4325 8821 to arrange a meeting.

Should you have any further queries regarding this matter please contact myself on 4325 8237 during normal business hours.

Yours faithfully

David Medcalf
Coordinator Project Implementation
Dear Craig

Thank you for providing Gosford City Council with the 20% Concept Design for the section of the Pacific Highway Upgrade (between Ourimbah Street and Parsons Road, Lisarow).

Please find summarised below, review comments on this proposal from key staff within Gosford City Council, for your consideration. Please note there are some references to the previous review comments that Council staff provided to the RMS on the proposal on 6 December 2013.

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<td>1</td>
<td>Vic Tysoe</td>
<td>1. Any loss in flood storage needs to be made up elsewhere.</td>
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<td></td>
<td>Advisor</td>
<td>2. 2D flood model needs to extend down to Teralba Street as Railway line acts as a barrier to flood impacts.</td>
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<td></td>
<td>Flooding and Drainage Planning</td>
<td>3. Provide On Site Detention for all flood events up to 1% AEP to compensate for increased stormwater run-off from road.</td>
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<td>11/07/2014</td>
<td>4. Adopt 50% blockage to hydraulic structures less than 6 m wide.</td>
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<td>5. Provide debris traps at entrance to road culverts to alleviate blockage.</td>
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<td>6. Raised concrete mediums along highway should not affect road overflows from existing or future 1% AEP floodplains so as not to adversely affect adjoining properties, particularly between Parsons Rd and Chamberlain Rd.</td>
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<td>7. Stockpile sites to be located outside of 1% AEP floodplains where possible.</td>
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<td>8. Raise MacDonald Rd from Pacific Hwy to Tuggerah St or provide elevated footpath/cycleway to improve emergency flood access to Lisarow Primary School.</td>
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<td>9. Maximum 0.01mm increase in flood levels for 2.5, 20 and 100 year flood events. There is to be no increase in flood flows which will worsen the flood hazard or flood impact to any properties upstream or downstream of the works.</td>
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<td>No.</td>
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<td>2</td>
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<td>Advisor</td>
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<td>Peter Starkey</td>
<td>State Roads Overseer</td>
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<td>Mark Stables</td>
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<tr>
<td>5</td>
<td>Peter Sproll</td>
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</tr>
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<td>6</td>
<td>Mark Smith</td>
<td>Maintenance Coordinator</td>
</tr>
<tr>
<td>7</td>
<td>Keith Dawson</td>
<td>Road Safety and Traffic Coordinator</td>
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<tr>
<td>8</td>
<td>Tiffany Spee</td>
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</tr>
<tr>
<td>9</td>
<td>Anna Deegan</td>
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</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>10</td>
<td>Graham Jeffes</td>
<td>11/07/14</td>
</tr>
<tr>
<td>11</td>
<td>Mark Wasson</td>
<td>14/07/14</td>
</tr>
<tr>
<td>12</td>
<td>Cathy Newton</td>
<td>15/07/14</td>
</tr>
</tbody>
</table>

Should you have any further queries regarding this matter please contact myself on 4325 8237 during normal business hours.

Yours faithfully

David Medcalf  
Coordinator Project Implementation
Dear Craig,

Re: Upgrade of Pacific Highway, HW10 – Ourimbah St to Parsons Rd, Lisarow

Thank you for your letter dated 23 June 2014 requesting comment from NSW Department of Primary Industries (Fisheries) on the above proposal.

Fisheries NSW is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, Fisheries NSW ensures that developments comply with the requirements of the Fisheries Management Act 1994 (namely the aquatic habitat protection and threatened species provisions in Parts 7 and 7A of the Act, respectively), and the associated Policy and Guidelines for Fish Habitat Conservation and Management (2013). In addition, NSW DPI is responsible for ensuring the sustainable management of commercial and recreational fishing in NSW.

The proposal does not include any dredging, reclamation, harm to marine vegetation, or blockage of fish passage.

NSW DPI has reviewed this proposal in light of these provisions and has no objections.

The water bodies identified on the proposal are part of an internal drainage set at Lisarow and are not considered Key Fish Habitat by the Department, however care should be taken to minimise impacts on these water bodies as they function as wetlands with a number of ecological benefits for a range of aquatic and terrestrial communities.

If you require any further information please contact me on (02) 4916 3931.

Yours sincerely,

Scott Carter
Regional Manager Central/Metro
Aquatic Ecosystems

22 July 2014
Hi Teresa,

Thank you for the opportunity to make comment on your proposed upgrade to the above section of road. Ausgrid would require any relocation of its assets to be completed via a customer funded, contestable project. If you wish to initiate a contestable project then please email contestability@ausgrid.com.au

At this stage Ausgrid has no further comment to make regarding the proposal.

If you have any questions then please don’t hesitate to contact me.

Kind regards

This e-mail may contain confidential or privileged information. If you have received it in error, please notify the sender immediately via return e-mail and then delete the original e-mail.

If you are the intended recipient, please note the change of sender email address to @ausgrid.com.au.

Ausgrid has collected your business contact details for dealing with you in your business capacity. More information about how we handle your personal information, including your right of access is contained at http://www.ausgrid.com.au/
Hi Tony/ Rachel,

Please find below correspondence from Jemena with regards to the ISEPP letter we issued.

Regards

Teresa

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From: George Apostopoulos [mailto:George.Apostopoulos@jemena.com.au]
Sent: Thursday, 26 June 2014 9:30 AM
To: TING Teresa S
Cc: Rajesh Gohel; Danny Guerrera
Subject: Upgrade of the Pacific Highway - HW10 Ourimbah Street to Parsons Road Lisarow.

Attn: M/s Teresa Ting.

Re: Upgrade of the Pacific Highway - HW10 Ourimbah Street to Parsons Road Lisarow.

Jemena Asset Management Pty Ltd on behalf of Jemena Gas Networks would like to advise in reference to your proposed works as detailed above and based on the information provided by you, Jemena currently have a high pressure secondary main located in the vicinity of the proposed development area.

Please note, a duty of care exists to ensure this gas main is not compromised or damaged during any future development or construction work.

Details of Jemena’s affected assets are as follows:

100mm High Pressure Secondary Main

Jemena’s comments to your proposal are as follows:

- A Jemena Pipeline Patrol Officer will be required on site during any site works. To book a pipeline patrol officer please ring 1300 665 380. (48 hour notice is required).
- Care is required when operating machinery over the gas mains it is advised no heavy machinery be used directly over the main.
- The existing pipe cover level shall not be reduced on completion of any work.
- The current position, depth and cover of the gas main shall be positively identified by a Jemena patrol officer.
- Work method statements to be provided to Jemena for review and acceptance prior to the commencement of any work.

Finally, attached please find for your review a copy of Jemena’s "Guidelines for Other Services and Construction Activities Near & Over Jemena's Gas Network's Assets."
If you would like to discuss further please do not hesitate in contacting me by return email or on the numbers listed below.

Regards

George Apostopoulos
Land Services Department

Jemena
100 Bennelong Parkway, Sydney Olympic Park, 2127
PO Box 6507, Silverwater, NSW 2128
T: (02) 9397 9437 | M: 0402 060 301 | F: (02) 9397 9997
E: george.apostopoulos@jemena.com.au | W: www.jemena.com.au
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Guidelines to Third Party for construction activities over Jemena Gas Networks Assets & ActewAGL Assets

GUIDELINES TO THIRD PARTY FOR CONSTRUCTION ACTIVITIES NEAR & OVER JEMENA GAS NETWORKS & ACTEWAGL ASSETS

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<th>Date</th>
<th>Rev</th>
<th>Description</th>
<th>Prepared By</th>
<th>Title</th>
<th>Signature</th>
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<td>Integrity Engineer – Pipeline</td>
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<td>15/07/2010</td>
<td>4</td>
<td>Specify additional documents to be provided by Applicant</td>
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<td>Integrity Engineer – Pipeline</td>
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<td>Rami Osman</td>
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<td>30/01/2012</td>
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<td>Additional information</td>
<td>Rami Osman</td>
<td>Integrity Engineer – Pipeline</td>
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Reviewer

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<tr>
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<tbody>
<tr>
<td>Mustafa Karacanta</td>
<td>Senior Integrity Engineer – Pipeline</td>
<td>2/8/12</td>
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<td>Alberto Paludetto</td>
<td>Senior Integrity Engineer – Environmental</td>
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<tr>
<td>Danny Guerrera</td>
<td>Land Services Manager</td>
<td>1/8/12</td>
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Approver

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<tbody>
<tr>
<td>Meng Cheng</td>
<td>Principal Engineer – Pipelines</td>
<td>9/8/2012</td>
<td></td>
</tr>
</tbody>
</table>
1. PURPOSE OF THIS DOCUMENT: This document has been developed to provide general guidelines to assist the Applicants in their design/construction proposal for crossing of Jemena High Pressure Gas Infrastructure prior to submission to Jemena for review.

This document does NOT authorise the Applicant to carry out any construction activities unless design and or construction proposals are reviewed, assessed and accepted by Jemena.

It is an offence under section 66 of the Gas Supply Act 1996 section 64 to interfere with a Network Operator’s Gas Works unless authorised to do so by the Network Operator.

2. PRECONSTRUCTION:

2.1. Dial Before You Dig
Dial before you dig (DBYD) maps must be obtained and reviewed by the Applicant prior to commencement of any construction/works to check if a gas pipeline is in the vicinity of the proposed works. DBYD can be contacted by phone (1100) or via internet www.1100.com.au.

2.2. High pressure gas pipeline confirmation by pot holing or Metrotech Methods:
When high pressure gas pipeline exists in the area, the Applicant must contact Jemena on 1300 665 380 to book for Patrol Officer to identify the exact location and depth of cover of the high pressure gas pipeline. A 48 hours notice must be given.

2.3. Documents required from Applicant prior to commence construction:
The Applicant shall develop and provide Jemena the proposed works package for assessment. The package shall consist of the following:
- Scope of work including the address;
- Construction Methodology: To specify the construction activities and all related risks against the high pressure gas pipeline;
- Plant and Equipment Specifications:
  - Size of the plant, equipment or machinery;
  - Load per axle;
  - Wheel configuration or track dimensions.
- Construction Drawings:
  - Plan drawing;
  - Cross sectional drawing.
- Construction Alignment Sheet (if applicable);
- Aerial photos of works area if available;
- Description of materials to be used, such as backfill and nature of materials to be installed e.g. materials carried in 3rd party pipeline;
- Restoration plan(s) for work area to reinstate final natural or carriageway surfaces, to previous condition.
**2.4. Document required from applicant prior to commence Directional Drill (Underbore):**

If a directional drill activity is proposed to be carried out near high pressure gas pipelines, the following documents shall be provided by the Applicant to Jemena for review:

Horizontal directional drilling (HDD) construction details including:

- Scope of work;
- Construction Methodology: Specify the construction activities, related risks and mitigation that can be provided against the high pressure gas pipeline ONLY;
- Plant and Equipment Specifications:
  - Size of the plant, equipment or machinery;
  - Load per axle;
  - Wheel configuration.
- Plan drawing showing the launch and receiving pits location, distance from the high pressure gas pipeline and dimensions of the pits including depth;
- Aerial photos of works area if available;
- Drill path profile;
- Separation distance between the new service and the existing high pressure gas pipeline;
- Drill head control and monitoring methodology;
- Detailed drill location;
- Geotechnical assessment of formation being drilled to determine if ground settlement/heaving is likely and monitoring methodology to be used during works.

**2.5. Document required from applicant prior to commence blasting**

The applicant must submit information to Jemena for review and final acceptance prior to commencement.

The information required for the blasting are as follows:

- Scope of work;
- Construction Methodology: Specify the construction activities, related risks and mitigation that can be provided against the high pressure gas pipeline ONLY;
- Plant and Equipment Specifications:
  - Size of the plant, equipment or machinery;
  - Load per axle;
  - Wheel configuration.
- Plan drawing showing the locations of the blast and distance from the high pressure gas pipeline;
- Aerial photos of works area if available;
- Depth of blast;
- Shot size (kg);
- Peak Particle Velocity
- Shot sequence and delay;
- Shot strength.

Upon receipt of all above documents, Jemena will provide the applicant with a reference number for future correspondence and follow up.

Jemena will perform a risk assessment to assess the construction activities and related risks to determine if they are consistent with the safety design of the pipeline.
3. CONSTRUCTION

3.1. Supervision of Work Subsequent to the acceptance to commence construction:
The Applicant must contact Jemena on 1300 665 380 to book Jemena Permit Issuing Officer prior to commencement of works. At least 48 hours notice must be given.

3.2. Permit to Work:
All earthwork and associated construction activities affecting the High Pressure Secondary Mains shall be performed under the guidance of a Jemena Pipeline Technician. All earthwork and associated construction activities affecting the High Pressure Trunk or Primary Pipelines shall require a PTW (Permit to Work) to be issued by Jemena Control Centre and signed by all workers who are engaged on site.

3.3. Other services crossing the Jemena high pressure gas pipeline:
The minimum separation distance shall be maintained between a high pressure gas pipeline and other services as 0.5m. If these requirements can not be met, each requirement can be assessed and approved individually by Jemena Land Services.

3.4. Concrete Pipeline Protection:
All existing high pressure gas pipeline protection including concrete slabs shall be retained. Concrete protection slabs shall not be disturbed unless approved by Jemena Engineering Services. Third party assets shall not be located beneath the protection slab.

3.5. Pipeline Markers:
All existing high pressure gas pipeline markers shall be retained. Where these are affected by the road alignment, these pipeline markers shall be re-located and the offset position from the actual gas pipeline shall be noted on the marker. Additional pipeline markers shall be installed at crossings of all services and roads.

3.6. Cathodic Protection (CP) Test Points:
All existing CP test points and associated equipment shall be retained or repositioned by Jemena and the costs shall be paid by the Applicant. Any electrical (earthing) works, which may affect the cathodic protection must comply with AS4853 and shall be approved by Jemena.

3.7. Excavation within 3m from a High Pressure Gas Pipeline:
Excavation MUST be carried out under Jemena PIO (Permit Issuing Officer) supervision (Refer to sections 2.2). If excavation works are proposed to be carried out, the excavation machinery shall not be parked directly over the high pressure gas pipeline. If this requirement can not be met, each requirement can be assessed and approved individually by Jemena Land Services. Where excavation will reduce the pipeline cover, Jemena is to determine what the acceptable depth of cover shall be. Where the excavation is carried out near the pipeline, the excavator shall use a toothless or mud bucket. Machine excavation is not permitted within 300mm of the high pressure gas pipeline. Where the distance is less than 300mm, ONLY hand excavation is allowed.

3.8. Backfill material
The general backfilling material around the pipeline shall be clean river sand 2mm passing with a neutral pH 7 where necessary adjacent existing pipeline.
3.9. Pipeline Cover in Carriageway
The minimum cover of the gas pipeline shall be 1200mm under a carriageway. Where the cover is less than 1200mm, the Applicant shall provide design of a reinforced concrete slab over the gas pipeline to shield it from the traffic loadings. Jemena will review and determine acceptance of the design before its installation. The maximum allowable depth of cover is 3 meters.

3.10. Construction Loadings on Gas Pipeline for High Pressure Gas Pipelines:
Additional protection structure is not required if the existing pipeline cover is over 1200mm and the construction vehicle weight is limited to 8 tonnes per axle. Where the pipeline cover is less than 1200mm OR construction vehicle weight exceeds the 8 tonne per axle, Jemena shall be advised of the equipment type including its weight, wheel configuration and size to determine its impact on the gas pipeline integrity. Jemena will determine if protection measures are required for the gas pipeline following the vehicle loading evaluation.

3.11. Construction Vehicle Crossing the Gas Pipeline - High Pressure Gas Pipelines:
Construction vehicles and plant crossing the gas pipeline shall be restricted to a designated area only. This designated crossing area may require appropriate protection measures where pipeline cover is deemed inadequate by Jemena to protect the gas pipeline from vehicle loading. Road plates and/or earth mound placed over the gas pipeline may be required by the Applicant before any vehicle crossing the pipeline. The Applicant shall provide details of such protection measures to Jemena for approval.

3.12. Compaction over the gas pipeline - High Pressure Gas Pipelines:
Compaction over high pressure gas pipelines is limited to static rollers only. Where pipe cover exceeds 1200mm, compactors weighing up to 10 tonnes may be used over the gas pipeline. Between 600mm and 1200mm cover, compactor weight is limited to 6 tonnes. Below 600mm cover, only a handheld mechanical tamper is allowed to be used.

3.13. Stockpiling
The Applicant shall not stockpile any heavy material directly over the existing high pressure gas pipeline and or within the easement without obtaining Jemena approval.

3.14. Warning Barriers
Suitable warning signage, barriers with beacons and protection against vehicular ingress shall be erected around any unattended excavation that exposes the pipeline.

4. POST CONSTRUCTION:

4.1. As Built Drawings:
The Applicant shall submit As Built Drawings to Jemena post construction showing the following details:
- Survey Data (MGA94) of the encroachment (such as new service, new road, new transport infrastructure) submitted in AutoCAD format with all XREF’s bound and a Drawing Layer index.
- The location of the 3rd part crossing including X,Y,Z coordinates and Depth of Cover
- The location of the HP gas pipeline including X,Y,Z coordinates and Depth of Cover
- The separation distance between the new service and the HP gas pipeline if applicable
- Metadata outlining the source, accuracy and currency of the As Built drawing.
From: Grant, Richard [mailto:RICHARD.GRANT@transport.nsw.gov.au]
Sent: Tuesday, 26 August 2014 12:54 PM
To: TING Teresa S
Subject: Lisarow - Upgrade of Pacific Higway

Hi Teresa
Not sure if you have this information
Can you please review and send to the appropriate consultant for comment

Regards

Richard Grant

Project Co-ordinator Metro North
Rail Corridor Management Group (RCMG)

Sydney Trains as agent for RailCorp

T (02) 8575 0262 | M 0407 948390
Level 2 No 36-48 George St. Burwood
Richard.Grant@Transport.nsw.gov.au

Track your train on real-time apps... go to Transport Info 131500.com.au

---

From: Sunil Joshi [mailto:Sunil.Joshi@projects.transport.nsw.gov.au]
Sent: Thursday, 24 July 2014 12:06 PM
To: Grant, Richard
Cc: Boyden, Peter
Subject: RE: Lisarow - Upgrade of Pacific Higway

Richard,

This is to inform you that a couple of Assurance Managers have reviewed the letter and made the following comments

- The scope should include the items discussed during the presentation on back in April 2014. I have attached the minutes of this meeting which details the scope of works contain within the Rail Corridor.
- From observation of the proposed road alignment it appears to impact of maintenance access to rail corridor on south side of station while the set back for new cycle way shall require relocation of one or more 11kV poles. The relocation towards station may impact on blowout clearances to station footbridge and OHW portals within station. The OLTB with increased height should potentially require the UG of a short 500m length of 11kV to eliminate excessive pole heights nominally above 18.5m

Please note that these are not exclusive comments from TPD as I am waiting for other to comment.

Regards,
Kate/Sunil,

The attached letter arrived this week for Richard and I note that RMS have requested a response (in general terms I would imagine) by 14 July 2014. It would be appreciated if you could provide any comments you deem appropriate for a response back to RMS preferably by the end of next week.

Regards,

Peter Boydén
Executive Manager, Rail Corridor Management Group (Property Division)
Sydney Trains

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit http://www.symanteccloud.com

Consider the environment. Please don't print this e-mail unless really necessary.
Hi Rachel,

Please find below email to Busways confirming the removal of the northbound bus stop near the Lisarow Cemetery for your record.

Regards

Teresa

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Hi Jaron,

Thanks for providing your comments on the Pacific Highway upgrade projects. This email is to confirm the discussion at the meeting on 25 June 2014. The following are the points we discussed on the day.

**Pacific Highway and Manns Road upgrade, between Narara Creek Road at Narara and Parsons Road at Lisarow**

- Busways advised there are guidelines for them to serve a certain amount of people for each suburb. If Route 37 is removed, the resident at the Wyoming area will not be served with a bus.
- Busways advised Route 37 are serving local resident such as school student and elderly. Busway has no intention to remove or reroute Route 37 in the near future.
- If there is a need to remove Route 37, Busways will provide advice to TfNSW and this will base on TfNSW approval.
- It is Busway's preference for the new propose connection between Wyoming Road and Berrys Head Road to go ahead.
- Busways advised if Roads and Maritime Services decided the new propose connection to be removed, Route 37 will need to go along the Pacific Highway. This will force the resident to walk up to the highway in order to catch the bus.
- It is Busway's preference to have an in-lane bus stop to avoid safety issue.

**Pacific Highway upgrade, between Ourimbah St and Parsons Road, Lisarow**

- Busways was advised the bus stop near the Lisarow Cemetery (southbound) was not provided in the concept design and the bus stops proposed in the Ourimbah to Lisarow upgrade superceded the above bus stop. Roads and Maritimes advised it is our preference to remove the northbound bus stop adjacent to the cemetery. Busways advised they have no objection to remove the northbound bus stop near the Lisarow Cemetery as it is an old bus stop which is currently not in use.
- Busways was advised with the upcoming geotechnical investigation for the project and noted minor delays are expected due to change of traffic conditions.
Many responses have been received for the display and currently we are reviewing all the submissions. I will keep you up to date with the issues addressed and if you have any question, please feel free to give me a call.

Kind Regards

Teresa Ting
Project Manager
Project Development | Infrastructure Development
T 02 4379 7037 M 0457 520 753
www.rms.nsw.gov.au
Every journey matters

Roads and Maritime Services
Level 1 29-37 George St Woy Woy NSW 2256
Hi Jaron,

Thanks for your advice, I will incorporate your comments into our latest design.

Cheers

Teresa Ting
Project Manager
Project Development | Infrastructure Development
T 02 4379 7037 M 0457 520 753
www.rms.nsw.gov.au
Every journey matters

Roads and Maritime Services
Level 1 29-37 George St Woy Woy NSW 2256

---

Hi Teresa,

Sorry I have got back to you yet. I have had a look at it.

I have no objection to the removal of the bus stops in McDonalds Rd.

Cheers

Jaron Gawne
Planning & Infrastructure Officer – CC & BNC
Busways Group Pty Ltd

M 0408 958 146
T 02 4368 2277
F 02 4368 2077
www.busways.com.au

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Hi Jaron,

Just following this up, haven't heard from you, any update on the below enquiry?

Thanks

Teresa
Good afternoon Teresa,

RE: Pacific Highway Between Ourimbah Street And Parsons Road, Lisarow, 2250, NSW

The requested project has been created and assigned to Gavin Auld

Your project number for the works requested is SR156512-1

Gavin Auld will contact you within the next seven working days to arrange a site visit.

Please don’t hesitate to forward any site plans and or order numbers/references, and I will have them attached to the project for the Field Operative.

If you have any further questions or concerns, please contact us on 1800 810 443 or email f1102490@team.telstra.com

Kind Regards

Ryan Hanwright
FOH Coordinator
Network Integrity -Newcastle
Program Services I Customer Service Delivery I Telstra Operations
Phone: 1800 810 443
Email: f1102490@team.telstra.com

From: Daley, Tony [mailto:TDaley@globalskm.com]
Sent: Friday, 20 June 2014 3:52 PM
To: ! NI Non Standard Works - New Requests
Cc: TING Teresa S (Teresa.TING@rms.nsw.gov.au); Vazey, Rachel; Cadungog, Vivira
Subject: Upgrade of the Pacific Highway - HW10 Ourimbah Street to Parsons Road at Lisarow

Hi

Please find attached a letter notifying Telstra of a proposal by RMS to upgrade the Pacific Highway - HW10 Ourimbah Street to Parsons Road at Lisarow.

A signed copy of this letter will be arriving by post.

Kind regards

Tony Daley
Design Manager
Teresa,

I have reviewed the outline of the proposed upgrade of the Pacific Highway - HW10 Ourimbah Street to Parsons Road, Lisarow.

The Department of Planning and Environment does not wish to make any comments regarding this proposal.

Happy to discuss further, if required.

Regards

Robert Hodgkins
Senior Planner
Planning & Environment | PO Box 1148 | Gosford NSW 2250
T 02 4348 5004 M 0421 052 053 E Robert.Hodgkins@planning.nsw.gov.au

Department of Planning and Environment
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**Minutes**

**Purpose of Meeting**  
**Optus Meeting 1**

**Project**  
Pacific Highway, Lisarow - Concept Design

**Project No**  
NB98077

**Prepared By**  
Darren Horwood

**Phone No**  
+61 2 9032 1094

**Place of Meeting**  
Optus Office  
Baulkham Hills

**Date**  
21 July 2014

**Present**  
Darren Horwood  
Road Designer / Utilities Coordinator  
– Jacobs

Robert George  
Project Engineer - Optus

Sue Devenyns  
Infrastructure Services Records – Optus

**Apologies**  
None

**Distribution**  
Darren Horwood, Robert George,  
Sue Devenyns

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<tr>
<th>Item</th>
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<td>1</td>
<td>Darren Horwood gave an overview of the road project and then outlined the current state of the concept design. Then he gave his understanding of the existing utility location and the impact of the utility with the current concept design.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Sue Devenyns to provide Jacobs with Optus base drawings in cad format and Leighton drawings in pdf form of the site.</td>
<td>Sue Devenyns</td>
<td>22 July</td>
</tr>
<tr>
<td>3</td>
<td>Darren Horwood to provide pdf’s to Optus of hardcopy drawings taken to the meeting ie. Telecommunications potholing location plans.</td>
<td>Darren Horwood</td>
<td>21 July</td>
</tr>
<tr>
<td>4</td>
<td>The Optus cable through the project is the main Sydney to Brisbane line. The cable will be required to be relocated with the proposed new works. Darren Horwood suggested the new cable be placed in the western footway along Railway Crescent travelling north then along the highway footway towards Ourimbah Street.</td>
<td>Note</td>
<td></td>
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<tr>
<td>5</td>
<td>Robert George indicated the relocated cable can be positioned in the same trench as the Telstra cable if necessary. The cable becomes active a minimum of 6-8 weeks after being placed in final location.</td>
<td>Note</td>
<td></td>
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<tr>
<td>6</td>
<td>Robert George indicated that the relocated cable be placed 1m under road and 600mm under the footpath. Pits to be placed either side of road crossing and at 200m intervals.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Darren Horwood showed an example of a Jacobs Utility Coordination Plan being an example of the type of information Optus would receive from the outcome of the concept design.</td>
<td>Note</td>
<td></td>
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Meeting Closed
Minutes

Purpose of Meeting | Jemina Meeting 1
---|---
Project | Pacific Highway, Lisarow - Concept Design
Project No | NB98077
Prepared By | Darren Horwood
Phone No | +61 2 9032 1094
Place of Meeting | Jemina Office
Sydney Olympic Park
Date | 22 July 2014
Present | Darren Horwood
Road Designer / Utilities Coordinator – Jacobs
George Apostopoulos
Land Services Coordinator – Jemina
Danny Guerrera
Land Services Manager - Jemina
Rajesh Gohel
Asset Performance Engineer - Jemina
Adrian Gallegos
Asset Manager - Jemina
Apologies | None
Distribution | Darren Horwood
George Apostopoulos

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<td>2</td>
<td>Discussion was based on the existing 50mm nylon gas main which runs from Parsons Road along the eastern side of the existing highway to Chamberlain Road. The main then travels east along the southern side of Chamberlain Road. Darren Horwood indicated that the location of the main as shown on the plans supplied for the meeting was indicative only and further potholing will be required to accurately locate the main.</td>
<td>Note</td>
<td></td>
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<tr>
<td>3</td>
<td>George Apostopoulos indicated that it would be preferable to relocate the 50mm main from under the proposed road. Darren Horwood indicated that the footway on the eastern side of the highway and the southern side of Chamberlain Road has sufficient width for the relocated main.</td>
<td>Note</td>
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<tr>
<td>4</td>
<td>Discussion was based on the existing 150mm main which runs under the railway line at the railway carpark entrance and runs along the eastern edge of the existing highway before turning down the northern side of MacDonalds Road. Rajesh Gohel indicated this was a secondary steel main and approximately 30 years old.</td>
<td>Note</td>
<td></td>
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<tr>
<td>5</td>
<td>George Apostopoulos indicated that it would be preferable to relocate the 150mm main from under the proposed road. Darren Horwood indicated that the footway on the eastern side of the highway and the northern side of MacDonalds Road has sufficient width for the relocated main.</td>
<td>Note</td>
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<tr>
<td>6</td>
<td>Adrian Gallegos indicated that a 6 months lead time is required for the replacement pipe to arrive as it ordered internationally</td>
<td></td>
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<tr>
<td>7</td>
<td>Darren Horwood showed an example of a Jacobs Utility Coordination Plan being an example of the type of information Jemina would receive from the outcome of the concept design.</td>
<td>Note</td>
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<td>Meeting Closed</td>
<td></td>
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### Purpose of Meeting

**Telstra Meeting 1**

**Project**  
Pacific Highway, Lisarow - Concept Design

**Prepared By**  
Darren Horwood

**Place of Meeting**  
Pacific Highway / Railway Crescent Lisarow

**Date**  
23 July 2014

**Present**  
Darren Horwood  
Road Designer / Utilities Coordinator - Jacobs

Stephen Lynch  
Project Specialist - Telstra

**Apologies**  
None

**Distribution**  
Darren Horwood  
Stephen Lynch

### Item Description

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<tr>
<td>2</td>
<td>Discussion was based on the affected Telstra main which runs along the western side of Railway Crescent and continues across Dora Street and travels north towards the back of the cemetery.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Stephen Lynch indicated that it would be preferable to relocate Telstra main from under the proposed road. Darren Horwood suggested the new cable be placed in the western footway along Railway Crescent travelling north, then connecting with the existing main which runs towards the back of the cemetery.</td>
<td>Note</td>
<td></td>
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<tr>
<td>4</td>
<td>It was confirmed on site from detection methods that the service labelled 'Old Telstra Mains' on the supplied RMS drawing for utilities is most likely an active service in use.</td>
<td>Note</td>
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<tr>
<td>5</td>
<td>It was confirmed on site from detection methods that the service labelled 'Optus optic fibre' in Dora Street on the supplied RMS drawing for utilities is a Telstra copper line.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Detection of the local main was determined between the cemetery and the highway travelling north in front of the properties towards Ourimbah Street. A faint signal was picked up in the second parallel main which may be abandoned.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>It would be preferable if proposed works avoided the Telstra optic fibre on the eastern side adjacent to Lisarow Plaza.</td>
<td>Note</td>
<td></td>
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<tr>
<td>8</td>
<td>It was confirmed on site that the copper wire crossing under the highway adjacent to Lisarow Plaza is abandoned.</td>
<td>Note</td>
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<td>10</td>
<td>The Telstra line from the pit at Stn 5660 RHS runs overhead to the pole at Stn 5740 before crossing to the western side of the highway and continuing to the traffic signal box and camera at Chamberlain Road intersection.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
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<td>Darren Horwood showed an example of a Jacobs Utility Coordination Plan being an example of the type of information Telstra would receive from the outcome of the concept design.</td>
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<td>Cathy Newton indicated that consideration during the design be given to access for maintenance vehicles to services that lie away from the formation. An example would be access to the water main and rising sewer main that lie between Chamberlain Road and MacDonalds Road at the toe of the batter and not under the footway.</td>
<td>Note</td>
<td></td>
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<tr>
<td>3</td>
<td>It was confirmed that the water main between Chamberlain Road and MacDonalds Road on the eastern side is a 200mm DICL.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Potholing will be required to establish the location of the sewer rising main and the water main between Chamberlain Road and MacDonalds Road on the eastern side of the existing highway. Potholing will be required for the 100mm CICL water main that lies from the railway station car park and travels north on the western side of the highway before turning to the northern side of MacDonalds Road.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Council has concerns regarding possible relocation of the 900mm water main that currently exists between the railway line and Railway Parade before running north between the highway and the railway line. Based on the current proposed alignment the water main is potentially impacted by the proposed bridge abutments. Continued investigation is required on the final location of the abutments during the concept design phase.</td>
<td>Note</td>
<td></td>
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<td>6</td>
<td>The sewer main that lies from Parsons Road to Chamberlain Road on the eastern side and along the southern side of Chamberlain Road has survey manhole levels supplied, however no invert levels. Invert levels could be obtained from council drawings. Request forwarded to RMS for invert levels.</td>
<td>Note</td>
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<td>7</td>
<td>Darren Horwood indicated there are footway widths of up to 3.5m to accommodate relocated water and sewer utilities for the length of the project including side roads. The exclusion is north of the railway bridge RHS where there is no footway.</td>
<td>Note</td>
<td></td>
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<tr>
<td>8</td>
<td>Darren Horwood showed an example of a Jacobs Utility Coordination Plan being an example of the type of information Gosford City Council would receive from the outcome of the concept design.</td>
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<td></td>
<td>Meeting closed</td>
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**Minutes**

**Purpose of Meeting**  
**Nextgen Meeting 1**

**Project**  
Pacific Highway, Lisarow - Concept Design  
**Project No**  
NB98077

**Prepared By**  
Darren Horwood  
**Phone No**  
+61 2 9032 1094

**Place of Meeting**  
Pacific Highway Lisarow  
**Date**  
25 July 2014

**Present**  
Darren Horwood  
Road Design / Utilities - Jacobs  
Tony King  
Construction Manager - Visionstream

**Apologies**  
None

**Distribution**  
Darren Horwood  
Tony King  
Gary Southwell - Visionstream

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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Darren Horwood gave an overview of the road project and then outlined the current state of the concept design. Then he gave his understanding of the existing utility location and the impact of the utility with the current concept design.</td>
<td>Note</td>
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<td>2</td>
<td>Tony King indicated the Nextgen cable is the main Sydney to Brisbane cable.</td>
<td>Note</td>
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<td>3</td>
<td>The Nextgen cable crosses under the railway line at the southern end of the Lisarow station platform and travels north along the western side of the existing highway before turning down the northern side of MacDonalds Road. There are surface markers near the Lisarow platform and at the MacDonalds Road intersection. Between these markers it is difficult to visually locate the cable.</td>
<td>Note</td>
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<tr>
<td>4</td>
<td>The cable is possibly in a trench of depth 0.6m in front of the Lisarow station to the station carpark entrance. From the carpark entrance to MacDonalds Road the cable possibly bored up to a depth of 3.85m below the existing surface.</td>
<td>Note</td>
<td></td>
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<tr>
<td>5</td>
<td>Darren Horwood indicated that Jacobs are preparing to pothole for geotech investigations on the eastern side of the existing highway and need to cross the Nextgen cable. The intention is to dump crushed rock to provide a driveway at Stn 6380. However the depth of the Nexgen cable on the Leightons drawings does not accurately define the location or depth of the cable at this location. Therefore the location and depth of the cable at the crossing point will need to be identified before work commences. Gary Southwell may be able to provide a locator upon his return from leave to locate the cable.</td>
<td>Note</td>
<td></td>
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<tr>
<td>6</td>
<td>Darren Horwood showed an example of a Jacobs Utility Coordination Plan being an example of the type of information Nextgen would receive from the outcome of the concept design.</td>
<td>Note</td>
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</table>

Meeting Close
Minutes

Purpose of Meeting

Ausgrid Meeting 1

Project

Pacific Highway, Lisarow - Concept Design

Project No

NB98077

Prepared By

Darren Horwood

Phone No

+61 2 9032 1094

Place of Meeting

Ausgrid Wyong Office

Date

31 July 2014

Present

Darren Horwood
Road Design / Utilities - Jacobs

Scott Short
Project Coordinator - Ausgrid

Apologies

None

Distribution

Darren Horwood
Scott Short

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<tr>
<td>1</td>
<td>Darren Horwood gave an overview of the road project and then outlined the current state of the concept design. Then he gave his understanding of the existing utility location and the impact of the utility with the current concept design.</td>
<td>Note</td>
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<tr>
<td>2</td>
<td>Ausgrid would prefer to have their own trench allocation and not share with other authorities.</td>
<td>Note</td>
<td></td>
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<tr>
<td>3</td>
<td>Scott Short to contact Melissa Daniel from Major Connections in Ausgrid to advise on the impact of sub transmission from the proposed project. There are longer approval times required for the sub transmission relocation process.</td>
<td>Scott Short</td>
<td>Aug 14</td>
</tr>
<tr>
<td>4</td>
<td>Any proposed design should take into account the detailed design that is completed as part of the adjoining upgrade works Lisarow Stage 3A.</td>
<td>Note</td>
<td></td>
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<tr>
<td>5</td>
<td>For clearance requirements including above/below existing surface and between voltages are found on the Ausgrid website under Spec. NS220.</td>
<td>Note</td>
<td></td>
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<tr>
<td>6</td>
<td>Consideration to be given for utilities to be placed underground during the design process. In general for the adjoining Stage 3A, high voltage power ie. 11kv and over was placed underground.</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Darren Horwood showed an example of a Jacobs Utility Coordination Plan being an example of the type of information Ausgrid would receive from the outcome of the concept design.</td>
<td>Note</td>
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<tr>
<td>8</td>
<td>Confirmed that the existing 33kv and optic fibre run overhead from the end of the proposed work on Chamberlain Road travelling north through an easement to the Pacific Highway. Then located along the existing highway running parallel before diverging and heading towards Tuggerah Street.</td>
<td>Note</td>
<td></td>
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<tr>
<td>9</td>
<td>Confirmed that the existing 132kv and optic fibre run overhead along the eastern side of Railway Crescent and continues along the eastern side of the Pacific Highway travelling north.</td>
<td>Note</td>
<td></td>
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<td></td>
<td>Meeting closed</td>
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</table>
Minutes

Purpose of Meeting
Rail Interface Meeting for Pacific Highway Upgrade, Ourimbah St to Parsons Rd, Lisarow

Project
Pacific Highway, Lisarow - Concept Design and REF

Project No NB98077

Prepared By
Robbie Kerr

Phone No +61 2 9032 1203

Place of Meeting
Level 8, 827 Pacific Highway, Chatswood
Transport Projects Zenith Centre B – SWRL Board Room

Date/Time 8 April 2014 13:30 to 15:30

Present
Richard Grant – RG (RailCorp) Email Richard.Grant@transport.nsw.gov.au
Peter Boyden – PB (RailCorp) Email Peter.Boyden@transport.nsw.gov.au
Michael Burke – MB (TfNSW) Email Michael.Burke@projects.transport.nsw.gov.au
Sunil Joshi – SJ (TfNSW) Email Sunil.Joshi@projects.transport.nsw.gov.au
Gareth Jenkins – GJ (TfNSW) Email Gareth.Jenkins@projects.transport.nsw.gov.au
Teresa Ting – TT (RMS) Email Teresa.Ting@rms.nsw.gov.au
Adam Hillard – AH (Hillard Civil) Email Adam.Hillard@optusnet.com.au
Craig Leckie – CL (RMS) Email Craig.Leckie@rms.nsw.gov.au
Robbie Kerr – RK (Jacobs) Email RKerr@globalskm.com
Desmond Tai – DT (Jacobs) Email DTai@globalskm.com
Rob Casimir – RC (Jacobs) Email RCasimir@globalskm.com
Tony Daley – TD (Jacobs) Email TDaley@globalskm.com
Kate Hendrikson – KH (Sydney Trains) Email Kate.Hendrikson@transport.nsw.gov.au

Apologies
Tom McKenna (RMS) Email Richard.Grant@transport.nsw.gov.au
Rex Gunton (TfNSW) Email Peter.Boyden@transport.nsw.gov.au

Distribution
As above

Attachments
1. RMS Strategic Concept Design Extract from DS2013 001314 revC
2. Preliminary Overbridge Options NB98077-ECR-ME-0010_Preliminary Bridge Options_01
4. Preliminary Carpark Layout NB98077-ESR-SK-0012_Preliminary Lisarow Station Carpark Layout_01

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<tbody>
<tr>
<td>1</td>
<td>Introductions</td>
<td></td>
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<tr>
<td>1.1</td>
<td>CL established purpose of the meeting is to establish clear lines of communication and establish a way forward in relation to the road and rail aspects of the project.</td>
<td>Note</td>
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</table>
## Minutes

### Item 2: Project Overview

#### 2.1 TT presented a brief overview of the project strategic concept design, refer Attachment 1:
- Existing road is one lane in each direction which will be upgraded to two lanes in each direction.
- Demolish and replace existing rail overbridge.
- Restructuring the Dora Street alignment and restricting the provisions of right turn out. A seagull intersection will be provided.
- Upgraded Traffic Control Signals (TCS) at Chamberlain Road intersection. New TCS at MacDonalds Road intersection and Railway Crescent intersection.

Previous route selection had investigated the possibility of providing a new alignment to the south of the railway line. This was discounted for various reasons and agreement to proceed with an upgrade of the existing highway was made. CL highlighted that north of the rail overbridge is a very tight corridor between two major project constraints; a cemetery to the west and rail to the east. The upgrade shall not encroach on the cemetery.

#### 2.2 TD outlined the three key areas of rail interface of particular interest to Jacobs at this point in the design development:
1. Rail overbridge.
2. Lisarow railway station and carpark.
3. Embankment encroachment on rail corridor between STN6800 - 7020.

### Item 3: Railway Overbridge

#### 3.1 DT (Jacobs’ structural lead) discussed the existing structure, RailCorp standard requirements and preliminary options for new bridge, refer Attachment 2 for detailed memo including photos.

Existing Structure:
- Three span trestle bridge, approx. 21.5m total span (abut. to abut.).
- Minimum vertical clearance of 5.3m (non-compliant with ESC215).
- Overhead wiring assumed fixed to bridge and forms fixed midpoint (this was confirmed by GJ).
- Eastern abutment located within rail boundary, western abutment located outside rail boundary.
- GJ added that there is an existing 11kV aerial Sydney Trains transmission line adjacent to the Up Main North Line and an aerial Ausgrid transmission line adjacent to the Down Main North Line.

#### 3.2 SJ to provide Jacobs with drawings of existing electrical wires.

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<tbody>
<tr>
<td>2.1</td>
<td>TT presented a brief overview of the project strategic concept design, refer Attachment 1:</td>
<td>Noote</td>
<td>-</td>
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<tr>
<td>3.1</td>
<td>DT (Jacobs’ structural lead) discussed the existing structure, RailCorp standard requirements and preliminary options for new bridge, refer Attachment 2 for detailed memo including photos.</td>
<td>Note</td>
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<tr>
<td>3.2</td>
<td>SJ to provide Jacobs with drawings of existing electrical wires.</td>
<td>SJ</td>
<td>11/04/2014</td>
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<tr>
<td>3.3</td>
<td>Bridge options to consider future track quadruplication and compliant design criteria ESC320, ESC215 and AS5100-2004 Bridge Design.</td>
<td>Note</td>
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<tr>
<td></td>
<td>• 4000mm track centres between up and down main north lines.</td>
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<td></td>
<td>• 6200mm between up and down main north lines and future lines for curved tracks of 1000m and greater (includes space for 600mm person standing between tracks with 700mm either side to kinematic envelopes).</td>
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<td>• 6200mm minimum horizontal dimension between face of abutment structure closest to the future design track centreline.</td>
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<td>• 5900mm vertical clearance required for wiring attached, 6500mm required for wiring detached.</td>
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<td>AH confirmed the strategic concept design was developed on the basis of 2.0m structure depth and 5.9m vertical clearance.</td>
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<td>3.4</td>
<td>Bridge option 1: Single span, 1.5m deep Super-T:</td>
<td>Note</td>
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<td>• Maximum bearing to bearing span of 33m (green dashed line on plan of Attachment 2).</td>
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<td>• Maximum perpendicular distance between front face of abutment walls is 28.8m.</td>
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<td>• Minimum vertical clearance to Main North Line and future rails of 5.9m.</td>
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<td>• Maximum bridge skew of 25 degrees.</td>
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<td></td>
<td>• Maximum bridge width to be less than 80m to avoid “tunnel” design criteria (i.e. along railway line). Jacobs’ road engineers currently investigating alignment options to square up the abutments.</td>
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<td>Bridge option 2: Single span, 2.3m deep steel box girders with composite concrete deck:</td>
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<td>• Maximum bearing to bearing span of 53m.</td>
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<td></td>
<td>• Maximum perpendicular distance between front face of abutment walls is 28.8m.</td>
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<td></td>
<td>• Minimum vertical clearance to Main North Line and future rails of 5.9m.</td>
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<td>3.5</td>
<td>GJ stated that as the bridge is lifted to provide clearance for the OHW, the clearance to electrical transmission lines reduces. Furthermore, the existing 11kV is currently on very tall poles, close to or at the 16m limit. RC suggested relocation of aerial lines to underground as an option.</td>
<td>Note</td>
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<td>3.6</td>
<td>DT outlined the proposed construction staging for bridge option 1, refer Attachment 3 for sketches. This process would involve construction of the offline section of the new bridge, transfer of traffic, demolition of existing structure, construction of remaining bridge section and stitching of the deck. &lt;br&gt; &lt;br&gt; The staging of the overhead wiring was queried. GJ stated the Work as Executed drawings (not confirmed) of the overhead wiring show a 5.0m contact wire height. DT to investigate the potential for construction of the new bridge over the existing wiring without any temporary wiring transfers. OHW design profile will be required to determine options for OHW structure. &lt;br&gt; &lt;br&gt; If there is suitable justification for attaching contact wires to the underside of the bridge structure, this option should not be discounted on the grounds that it is undesirable to do so.</td>
<td>Note</td>
<td>DT/TD 24/04/2014</td>
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<tr>
<td>3.7</td>
<td>KH queried if there were any additional services crossing the bridge. While no DBYD had been completed to confirm their existence, DT outlined that the new bridge will provide provision for utility crossing (conduits in bridge barriers etc).</td>
<td>Note</td>
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<td>3.8</td>
<td>SJ stated that concession to locate the bridge abutments within the rail boundary is possible. RG suggested keeping them outside the rail boundary. DT raised the issue that this will eliminate the Super-T option, as even the largest 1.8m deep super-T’s cannot span the required 40m clear span that results from abutments located outside the rail boundary. The box girder option will be suitable but has a deeper bridge structure, which will result in higher embankments and increased height of retaining walls. Road geometry and extent of approach will also be affected.</td>
<td>Note</td>
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<tr>
<td>3.9</td>
<td>It was stated by RailCorp that their first preference for the design of the bridge is that the design should proceed under the following design philosophies: &lt;br&gt; &lt;br&gt; 1. The bridge abutments are set on the rail boundary. &lt;br&gt; 2. Contact wiring is not to be attached to bridge structure. &lt;br&gt; 3. 11kV Sydney Trains transmission lines to remain aerial. &lt;br&gt; &lt;br&gt; Justification would be required if the design deviated from the above preferences. TD/DT to progress concept design options under the above assumptions.</td>
<td>Note</td>
<td>TD/DT</td>
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<td>3.10</td>
<td>RC raised the issue of eliminating bridge options by forcing the abutments to be set-out of the rail boundary. If an additional metre acquisition (for example) would allow for conventional Super-T design, would this be a worthwhile endeavour? Note that the rail boundary width is approximately 40m. RG responded that this would require significant consultation with affected stakeholders such as Transport Future Planning etc. which may impact the program. Jacobs to proceed based on design philosophies listed in Item 3.9.</td>
<td>Note</td>
<td>TD/DT TBA</td>
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<tr>
<td>3.11</td>
<td>RG suggested that detailed survey is completed ASAP to accurately establish the levels of contact wiring and aerial Sydney Trains/Ausgrid assets. Once collected, a bridge “envelope” can be established and options fitting within can be considered. CL advised that all necessary survey information has already been obtained. DT/TD to undertake OHW profiling options and present developed concept design options back to this forum.</td>
<td>Note</td>
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<td>DT/TD</td>
<td>TBA</td>
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<td>3.12</td>
<td>CL confirmed that the RMS has completed extensive field investigations including heritage studies and GPR of the cemetery site to confirm the location of graves. The cemetery boundary shall not be encroached upon.</td>
<td>Note</td>
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<td>3.13</td>
<td>The upgrade of TCS at Chamberlain intersection has the potential to interfere with the rail operation. TD to ensure that the TCS designers consider this issue during design development.</td>
<td>TD</td>
<td>TBA</td>
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<td>4</td>
<td><strong>Lisarow Railway Station and Carpark</strong></td>
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<td>4.1</td>
<td>TD summarised the proposed design for the carpark at Lisarow station is to provide a “like for like” replacement. The existing carpark was initially a dirt access road that was developed into a carpark and does not conform to standards. The proposed carpark will have an improved level of services by providing 5.8m aisle width and 5.4m long car parking spaces. The loss of carpark area resulting from the new wider access can be reclaimed through relocating the rail access gates and expanding the carpark to the north. See Attachment 4 for preliminary carpark layout.</td>
<td>Note</td>
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<td>Note</td>
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<td>4.2</td>
<td>It was stated that Jacobs’ design of the carpark will not cater for future rail quadruplication. GJ noted that there are two 11kV Sydney Trains poles impacted by the strategic concept design. TD to investigate options to avoid impact to these assets.</td>
<td>Note</td>
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<td>TD</td>
<td>TBA</td>
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<td>4.3</td>
<td>CL stated that RMS will be purchasing the crescent shaped lot of land adjacent to the carpark between the road and rail which will allow for rectification of existing drainage issues.</td>
<td>Note</td>
<td>-</td>
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<tr>
<td>5</td>
<td><strong>Embankment Encroachment on Rail Corridor Between STN6800 - 7020</strong></td>
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<td>5.1</td>
<td>Between STN6800 – 7020 the road embankment spills into the rail corridor. Jacobs are proposing to maintain the same toe of batter point within the road corridor along this section to eliminate the requirement of a retaining wall. TD to investigate the extent and size of the retaining wall that would be required to retain earthworks outside the rail corridor and develop cross sections for discussion at the next meeting.</td>
<td>Note</td>
<td>-</td>
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<td>6</td>
<td><strong>Lines of Communication</strong></td>
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<td>6.1</td>
<td>CL stressed the need for clear lines of communication.</td>
<td>Note</td>
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<td>Consultants are to coordinate with TT.</td>
<td>Consultants</td>
<td>-</td>
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<td>TT to coordinate with RG</td>
<td>TT</td>
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<td>RG to raise issues requiring stakeholder comment with SJ.</td>
<td>RG</td>
<td>-</td>
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<td>RG to be copied into all offside project communications.</td>
<td>All</td>
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<tr>
<td>6.2</td>
<td>SJ requested any designs affecting TfNSW assets are to be provided to TfNSW</td>
<td>RG</td>
<td>-</td>
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<td>for their comment (i.e. 20%, 80% 100% concept designs and the structures options report).</td>
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<tr>
<td>6.3</td>
<td>RC to forward details of Jacobs’ AEO to SJ.</td>
<td>RC</td>
<td>28/04/2014</td>
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<td>MB suggested that submission of an Engineering Authority Application would</td>
<td>Note</td>
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<td>be preferable to avoid delays during the transition to AEO.</td>
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