

Infrastructure approval

Section 115ZB of the *Environmental Planning and Assessment Act 1979*

I grant approval to the State significant infrastructure application referred to in schedule 1, subject to the conditions in schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the SSI.

The Hon Pru Goward MP
Minister for Planning

Sydney

2014

SCHEDULE 1

Application No.:	SSI-4963
Applicant:	Roads and Maritime Services
Approval Authority:	Minister for Planning
Land:	The Pacific Highway between Woolgoolga and Ballina, from about six kilometres north of Woolgoolga at Arrawarra Beach Road to Pimlico Road about six kilometres to the south of Ballina, excluding the Glenugie and Devils Pulpit upgrades but including the tie-ins to those projects.
State Significant Infrastructure:	The construction and operation of a four-lane motorway standard highway (two lanes in each direction) approximately 155 kilometres in length between Woolgoolga and Ballina, known as the Pacific Highway Upgrade – Woolgoolga to Ballina project.

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DEFINITIONS

Act, the	<i>Environmental Planning and Assessment Act, 1979.</i>
Ancillary Facility	<p>Temporary facility for construction, including for example an office and amenities compound, construction compound, batch plant (concrete or bitumen), material crushing and screening, materials storage compound, maintenance workshop, testing laboratory or material stockpile area.</p> <p><i>Note:</i> <i>Where a stockpile management protocol has been approved by the Secretary for the SSI, material stockpile areas are not considered to be ancillary facilities.</i></p>
Applicant	Roads and Maritime Services (RMS).
CEMP	Construction Environmental Management Plan.
Conditions of approval	The Minister's conditions of approval for the SSI.
Construction	<p>Includes all work in respect of the SSI other than:</p> <ul style="list-style-type: none"> (a) survey works including general alignment survey and survey controls (including installation of global positioning system (GPS), repeater stations, survey of existing and future utilities or building/road dilapidation surveys). (b) further investigations including investigative drilling, excavation or salvage; treatment of contaminated sites or work undertaken in accordance with a strategy or salvage operation required by the conditions of this approval. (c) establishing ancillary facilities/construction work sites (in locations meeting the criteria identified in the conditions of approval), or where criteria are not fully satisfied, those ancillary facility sites which have been fully assessed against all criteria, with mitigation to manage and minimise impacts identified in the documents referred to in condition A2 and approved by the Environmental Representative or Secretary. This includes the establishment of ancillary facilities access roads and the provision of services to the facility and installation of erosion and sedimentation controls. (d) installation of environmental impact mitigation measures (including erosion and sedimentation control, temporary exclusion fencing for sensitive areas, and at-house acoustic treatment) and measures identified in approved strategies, plans, programs and other documents required by the conditions of this approval (including works associated with the construction of connectivity structures (including boundary and exclusion fencing and vegetation planting)). (e) property acquisition adjustment works including the installation of property fencing, demolition and removal of buildings, relocation of utilities to property (including water supply and electricity). (f) utilities adjustments within sections 1, 4, 5, 6 and 11 of the SSI, as specified in the documents referred to in condition A2(f), where an Environment Work Method Statement has been approved by the Secretary in consultation with EPA and DoE. (g) existing road network adjustments including minor upgrades to existing local roads and the existing Pacific Highway network, upgrade of existing intersections to cater for

	<p>construction traffic and installation of temporary project signage.</p> <p>(h) minor clearing or translocation of native vegetation associated with (a) to (g) above.</p> <p>(i) other activities determined by the Environmental Representative to have minimal environmental impact (e.g. minor access roads, minor adjustments to services/utilities, etc.).</p>
	<p>Note:</p> <p><i>Work where heritage, threatened species or suitable habitat, populations or endangered ecological communities would be affected is classified as construction, unless otherwise approved by the Secretary in consultation with the Environment Protection Authority or in accordance with an approved strategy, plan or program required by this approval.</i></p>
Secretary's approval, agreement or satisfaction	<p>A written approval from the Secretary (or delegate).</p> <p>Where the Secretary's approval, agreement or satisfaction is required under a condition of this approval, the Secretary will endeavour to provide a response within one month of receiving an approval, agreement or satisfaction request. The Secretary may ask for additional information if the approval, agreement or satisfaction request is considered incomplete. When further information is requested, the time taken for the Applicant to respond in writing will be added to the one month period.</p>
DoE	Commonwealth Department of the Environment
DPI	Department of Primary Industries.
EEC	Endangered Ecological Communities.
EIS	Environmental Impact Statement. The EIS for the SSI is the document referred to in condition A2(b).
EPA	Environment Protection Authority.
EPL	Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> .
Feasible and Reasonable	<p>Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account mitigation benefits and cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.</p> <p>Where requested by the Secretary, the Applicant shall provide evidence as to how feasible and reasonable measures were considered and taken into account.</p>
Heritage	Encompasses both Aboriginal and non-Aboriginal heritage including sites that predate European settlement, and a shared history since European settlement such as a shared associations in pastoral landscapes as well as associations linked with the mission period.
Heritage Item	An item as defined under the <i>Heritage Act 1977</i> , and assessed as being of local, State and/or National heritage

	significance, and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i> .
High-noise impact activities and work	Jack hammering, rock breaking or hammering, pile driving, dynamic compaction, vibratory rolling, cutting of pavement, concrete or steel or other work occurring on the surface that generates noise with impulsive, intermittent, tonal or low frequency characteristics.
High risk activities in known Oxleyan Pygmy Perch habitat	Includes but is not limited to the following construction activities adjacent to or in known Oxleyan Pygmy Perch habitat: <ul style="list-style-type: none"> • Piling in the waterway and within the bed and banks; • Construction of temporary work platforms within the waterway; • Installation and removal of temporary waterway crossings; • Concreting of bridge abutments, deck, and parapets; • Vegetation clearing within 50 metres of Oxleyan Pygmy Perch habitat waterways; • Placing fill (bulk earthworks) on the floodplain within 50 metres of Oxleyan Pygmy Perch habitat waterways; • Lime stabilisation work within 50 metres of Oxleyan Pygmy Perch habitat waterways; and • Underboring of Oxleyan Pygmy Perch habitat waterways.
Incident	A set of circumstances that: <ul style="list-style-type: none"> • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/ criteria in this approval.
Low-noise impact activities and work	Deliveries, site access, equipment pre-start, refuelling, office works, foot-based and manual activities using hand tools, work in ancillary activities, finishing works and clean-up and activities that generate noise that is no more than 5 dB(A) above rating background level at any residence.
Minister, the	Minister for Planning.
NOW	NSW Office of Water.
NSW Heritage Council	Heritage Council of NSW or its delegate.
OEH	Office of Environment and Heritage.
Operation	Means the operation of the SSI, but does not include commissioning trials of equipment or temporary use of parts of the SSI during construction, or maintenance.
Oxleyan Pygmy Perch spawning period	The spawning period for the Oxleyan Pygmy Perch is October to April.
PIR	Preferred Infrastructure Report. The PIR for the SSI is the document referred to in condition A2(c).
Publicly available	Available for inspection by a member of the general public (for example available on an internet website).
Relevant council(s)	Ballina Council, Clarence Valley Council, Coffs Harbour City Council and Richmond Valley Council, as applicable.
Secretary	Secretary of the Department of Planning and Environment
Section of the SSI	Means a section of the SSI as described in the documents referred to in condition A2.

Sensitive receiver	Residence, educational institution (e.g. school, university, TAFE college), health care facility (e.g. nursing home, hospital), religious facility (e.g. church) and children's day care facility.
SEPP14	State Environmental Planning Policy No.14 – Coastal Wetlands.
Sparingly populated areas	Areas where sensitive receivers are located greater than 200 metres from the SSI boundary.
SSI	Means the State significant infrastructure approved under this approval and as generally described in Schedule 1 (SSI-4963)
SSI boundary	The boundary of the SSI as defined in the documents referred to in condition A2.
SSI footprint	That area within the SSI boundary physically impacted by construction activities.
Standard Construction Hours	<p>The standard construction hours are:</p> <ul style="list-style-type: none"> • 7.00am to 6.00pm Monday to Friday; • 8.00am to 5.00pm Saturdays; and • at no time on Sundays or public holidays.

SCHEDULE 2

PART A ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

A1. In addition to meeting the specific performance criteria established under this approval, the Applicant shall implement all feasible and reasonable measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the SSI.

TERMS OF APPROVAL

A2. The Applicant shall carry out the SSI generally in accordance with the:

- (a) State significant infrastructure application SSI-4963;
- (b) *Pacific Highway Upgrade Woolgoolga to Ballina Environmental Impact Statement Volumes 1A, 1B, 2, 3, 4A, 4B, 5, 6A, 6B, 6C, 7A, 7B and 8*, prepared by Roads and Maritime Services, dated December 2012;
- (c) *Pacific Highway Upgrade Woolgoolga to Ballina Submissions/Preferred Infrastructure Report Main Volume and Appendices*, prepared by Roads and Maritime Services, dated November 2013;
- (d) Ancillary facility sites listed in *Woolgoolga to Ballina Pacific Highway Upgrade - Ancillary descriptions and impact assessment*, prepared by Roads and Maritime Services, dated 13 December 2013;
- (e) Connectivity structures listed in *Woolgoolga to Ballina Alliance Update 20 Feb 2014 Structures Inventory* (except Sections 1 and 2) and *Woolgoolga to Glenugie Fauna Connectivity Tracking Register 11/02/2014*, prepared by Roads and Maritime Services, and email correspondence from Roads and Maritime Services dated 14 March 2014;
- (f) *Pacific Highway Upgrade Woolgoolga to Ballina: Utilities impact native vegetation (D00395_0102_Utilities Clearing Vegetation_v9)*, prepared by Roads and Maritime Services, dated 21 May 2014;
- (g) *Modification request and letter dated 17 November 2014 to modify the definition of construction under subclause f in relation to section 4 utility adjustments and replacement of all references to OEH with EPA*; and
- (h) conditions of this approval.

A3. If there is any inconsistency between the above documents, the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

A4. The Applicant shall comply with any reasonable requirement(s) of the Secretary arising from the Department of Planning and Environment's assessment of:

- (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this approval; and
- (b) the implementation of any actions or measures contained in these documents.

LIMITS OF APPROVAL

A5. This approval shall lapse 10 years after the date on which it is granted, unless the works the subject of this SSI approval are physically commenced on or before that date.

STATUTORY REQUIREMENTS

A6. The Applicant shall ensure that all licences, permits and approvals are obtained as required by law and maintained as required throughout the life of the SSI. No condition of this approval removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals.

STAGING

A7. The Applicant may elect to construct and/or operate the SSI in stages. Where staging is proposed, the Applicant shall submit a Staging Report to the Secretary prior to the commencement of each proposed stage. The Staging Report shall provide details of:

- (a) how the SSI would be staged, including general details of work activities associated with each stage and the general timing of when each stage would commence; and
- (b) details of the relevant conditions of approval, which would apply to each stage and how these shall be complied with across and between the stages of the SSI.

Where staging of the SSI is proposed, these conditions of approval are only required to be complied with at the relevant time and to the extent that they are relevant to the specific stage(s).

SUBMISSION OF ANY STRATEGY, PLAN OR PROGRAM

A8. The Applicant shall ensure that any strategy, plan, program or other document required by the conditions of this approval and relevant to each stage (as identified in the Staging Report) is submitted to the Secretary no later than one month prior to the commencement of the relevant stage(s), unless otherwise agreed by the Secretary.

Notes:

- *While any strategy, plan or program may be submitted on a progressive basis, the Applicant will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program shall clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

COMPLIANCE

A9. The Applicant shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.

A10. The Applicant shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the site, including contractors, sub-contractors and visitors.

A11. In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this approval or relevant matter relating to the SSI, either party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.

INCIDENT REPORTING

A12. The Applicant shall notify the Secretary and relevant public authorities of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 24 hours of becoming aware of the incident. The Applicant shall provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred.

Note:

- *Where an incident also requires reporting to the EPA and/or OEH, the incident report prepared for the purposes of notifying the EPA and/or OEH would meet this requirement.*

A13. The Applicant shall meet the requirements of the Secretary or relevant public authority (as determined by the Secretary) to address the cause or impact of any incident, as it relates to this approval, reported in accordance with condition A12, within such period as the Secretary may require.

PART B

ENVIRONMENTAL PERFORMANCE

BIODIVERSITY

B1. The clearing of native vegetation shall be minimised with the objective of reducing impacts to any threatened species or EECs where feasible and reasonable, consistent with the following:

- (a) clearing of native vegetation shall be limited to a total area of 931.7 hectares, within the SSI boundary defined in the document referred to in condition A2(c), subject to condition B1(b);
- (b) clearing of native vegetation for ancillary facilities specified in the document referred to in condition A2(d) and outside the SSI boundary defined in the document referred to in condition A2(c) shall be limited to 4.75 hectares;
- (c) clearing of threatened ecological communities shall be limited to the areas specified in Table 6-1 (under the column titled: Revised—direct impact (hectares)) of Appendix J of the document referred to in condition A2(c), subject to condition B1(d);
- (d) clearing of the Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions shall be limited to a total area of 0.5 hectares; and
- (a) clearing of Koala (*Phascolarctos cinereus*) primary and secondary habitat shall be limited to a total area of 375 hectares.

B2. Where feasible and reasonable, remnant vegetation shall be retained between the SSI boundary and the SSI footprint.

B3. Native vegetation shall be established in or adjacent to disturbed areas within the SSI boundary to provide habitat for wildlife following the completion of construction in the vicinity of the disturbed area, consistent with the Urban Design and Landscape Plan required under condition D20.

B4. Light spill from the SSI shall be avoided on Pink Underwing Moth and Atlas Rainforest Ground Beetle habitat, where feasible and reasonable.

Pre clearing

B5. Prior to construction, pre clearing surveys and inspections for endangered and threatened species shall be undertaken. The surveys and inspections, and any subsequent relocation of species, shall be undertaken under the guidance of a suitably qualified ecologist and shall be in accordance with the methodology incorporated into the approved Construction Flora and Fauna Management Plan.

All clearing of Koala habitat trees shall be undertaken in the presence of a Koala spotter.

B6. Incidental or unanticipated threatened flora and fauna finds shall be immediately reported and clearing work stopped in the vicinity of the find to allow for an evaluation of an appropriate response in accordance with the Construction Flora and Fauna Management Plan.

Oxleyan Pygmy Perch Habitat

B7. High risk construction activities in known Oxleyan Pygmy Perch habitat shall not be undertaken during the Oxleyan Pygmy Perch spawning period, or on days when the relevant Bureau of Meteorology site predicts a 90% chance of 10mm of rain or more, unless otherwise agreed by DPI (Fisheries).

B8. Temporary bridge or arch structures in known Oxleyan Pygmy Perch habitat shall be used if the crossing is intended to be in place for more than 3 months.

B9. Where temporary crossings in known Oxleyan Pygmy Perch habitat are proposed with culverts or pipes, the Applicant shall, in consultation with DPI (Fisheries):

- (a) determine the size of the culverts or pipes to facilitate fish passage; and
- (b) identify the minimum size of clean rock to be used to ensure that rock material will not wash into the waterway in periods of high flows.

Temporary culvert or pipe crossings shall be removed prior to the start of the Oxleyan Pygmy Perch spawning period.

Connectivity

B10. Subject to conditions B11 and B12, the Applicant shall revise the Connectivity Strategy identified in the documents listed in condition A2(e), based on the outcomes of the Mitigation Framework required by condition D1.

Note:

- *The requirements for the Connectivity Strategy are contained in condition D2.*

B11. As part of detailed design, the Applicant shall further investigate design refinements for fauna crossings and associated exclusionary measures, between station 41.500 and station 80.000 to improve connectivity for the Coastal Emu, and in the proximity of station 96.000 and between station 137.800 and station 159.700 to improve connectivity for the Koala. Any changes to fauna crossings and exclusionary measures shall be included in the Connectivity Strategy required under condition D2.

B12. Investigations into the location and design of connectivity structures, including but not limited to those identified in the documents listed under conditions A2(c) and A2(e), shall be undertaken during detailed design with the input of a suitably qualified and experienced ecologist. The investigations shall be undertaken in consultation with the **EPA**, DPI (Fisheries) and DoE and include workshops and on-site ground verification. The results of these investigations shall be detailed in the Connectivity Strategy required under condition D2.

B13. The Applicant shall minimise riparian vegetation clearing during construction and undertake a targeted rehabilitation program post construction to restore in-stream and riparian habitat to at least the pre-construction condition or better, unless otherwise agreed by DPI (Fisheries). All areas disturbed by the SSI that are in the vicinity of known Oxleyan Pygmy Perch habitat waterways shall be stabilised prior to the Oxleyan Pygmy Perch spawning period.

NOISE AND VIBRATION

Construction Noise

B14. The SSI shall be constructed with the aim of achieving the construction noise management levels detailed in the *Interim Construction Noise Guideline* (DECC, 2009). All feasible and reasonable noise mitigation measures shall be implemented and any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the Construction Noise and Vibration Management Plan.

Note:

- *The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5dB(A) to the predicted level before comparing to the construction Noise Management Level.*

B15. Construction activities associated with the SSI shall be undertaken during the following standard construction hours:

- (a) 7:00am to 6:00pm Monday to Friday, inclusive; and
- (b) 8:00am to 5:00pm Saturday; and
- (c) at no time on Sunday or public holidays.

B16. Construction works outside the standard construction hours may be undertaken in the following circumstances:

- (a) construction works that generate noise that is:
 - (i) no more than 5 dB(A) above rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009); and
 - (ii) no more than the noise management levels specified in Table 3 of the *Interim Construction Noise Guideline* (DECC 2009) at other sensitive receivers; or
- (b) for the delivery of materials required outside the standard construction hours by the NSW Police Force or other authorities for safety reasons; or
- (c) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or
- (d) between 6.00am and 7.00am and 6.00pm and 7.00pm Monday to Friday (except public holidays) in sparsely populated areas (these construction hours may be reviewed and/or revoked by the Secretary in consultation with the EPA in the case of unresolved noise complaints); or
- (e) low noise impact activities and work between:
 - (i) 6.00am and 7.00am Monday to Friday; and/or
 - (ii) 6.00pm and 7.00pm Monday to Friday; or
- (f) works approved through an EPL; or
- (g) works approved by a Construction Environment Management Plan or Construction Noise and Vibration Management Plan for the SSI.

B17. Construction activities which cannot be undertaken during the standard construction hours for technical or other justifiable reasons (Out of Hours work) may be permitted outside the standard construction hours with the approval of the Environmental Representative. Out of Hours work shall be undertaken in accordance with an approved Construction Environment Management Plan or Construction Noise and Vibration Management Plan for the SSI, where that plan provides a process for the consideration of Out of Hours work. This consideration includes:

- (a) process for obtaining the Environmental Representative's approval for Out of Hours work;
- (b) details of the nature and need for activities to be conducted during the varied construction hours;
- (c) justifies the varied construction hours in accordance with the *Interim Construction Noise Guideline* (DECC, 2009);
- (d) provides evidence that consultation with potentially affected receivers and notification of the relevant council has been undertaken, that the issues raised have been addressed and all feasible and reasonable mitigation measures have been put in place; and
- (e) provides evidence of consultation with the EPA on the proposed variation in standard construction hours.

B18. Construction activities resulting in impulsive or tonal noise emission (such as rock breaking, rock hammering, pile driving) shall only be undertaken:

- (a) between the hours of 8:00am to 5:00pm Monday to Friday;
- (b) between the hours of 8:00am to 1:00pm Saturday; and
- (c) in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.

For the purposes of this condition 'continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.

The works subject to this condition may be undertaken in sparsely populated areas within the standard construction hours.

B19. The Applicant shall, where feasible and reasonable, limit high noise impact activities and work to the mid-morning and mid-afternoon periods, except in sparsely populated areas.

Construction Vibration

B20. The SSI shall be constructed with the aim of achieving the following construction vibration goals:

- (a) for structural damage to heritage structures, the vibration limits set out in the German Standard *DIN 4150-3: Structural Vibration – Part 3 Effects of vibration on structures*;
- (b) for damage to other buildings and/or structures, the vibration limits set out in the British Standard *BS 7385-1:1990 – Evaluation and measurement of vibration in buildings—Guide for measurement of vibration and evaluation of their effects on buildings* (and referenced in Australian Standard 2187.2 – 2006 *Explosives – Storage and use – Use of explosives*); and
- (c) for human exposure, the acceptable vibration values set out in *Assessing Vibration: A Technical Guideline* (Department of Environment and Conservation, 2006).

B21. Blasting associated with the SSI shall only be undertaken during the following hours:

- (a) 9:00am to 5:00pm, Monday to Friday, inclusive;
- (b) 9:00am to 1:00pm on Saturday; and
- (c) at no time on Sunday or public holidays.

Blasting outside the above hours and in accordance with the standard construction hours where:

- (i) no sensitive receivers in sparsely populated areas would be impacted by blasting; or
- (ii) an agreement has been made with receivers within 200 metres of the blast zone to permit blasting in accordance with the standard construction hours.

This condition does not apply in the event of a direction from the NSW Police Force or other relevant authority for safety or emergency reasons to avoid loss of life, property loss and/or to prevent environmental harm.

B22. The Applicant shall ensure that Airblast overpressure generated by blasting associated with the SSI shall not exceed the criteria specified in Table 1 when measured at the most affected residence or other sensitive receiver.

Table 1 - Airblast overpressure limits for human comfort

Receiver	Type of blasting operations	Airblast Overpressure Limit
Sensitive site	Blasting operations lasting more than 12 months or more than 20 blasts	115 dBL for 95% of blasts per year
		120 dBL maximum limit
Sensitive site	Blasting operations lasting less than 12 months or less than 20 blasts in total	120 dBL for 95% of blasts per year
		125 dBL maximum limit

Receiver	Type of blasting operations	Airblast Overpressure Limit
Occupied non-sensitive sites, such as factories and commercial premises	All blasting	125 dBL maximum limit. For sites containing equipment sensitive to vibration, the vibration level should be kept below manufacturer's specifications or levels that can be shown to adversely affect the equipment operation

Note

- a sensitive site includes houses and low rise residential buildings, theatres, schools and other similar buildings occupied by people.

Source – Table J5.4(A) – AS 2187.2 – 2006

B23. The Applicant shall ensure that Ground vibration generated by blasting associated with the SSI shall not exceed the criteria specified in Table 2 and Table 3 when measured at the most affected residence or other sensitive receiver.

Table 2 – Ground vibration limits for human comfort

Receiver	Type of blasting operations	Peak component particle velocity (mm/s)
Sensitive site	Blasting operations lasting more than 12 months or more than 20 blasts	5 mm/s for 95% of blasts per year
		10 mm/s maximum limit
Sensitive site	Blasting operations lasting less than 12 months or less than 20 blasts in total	10 mm/s maximum limit
Occupied non-sensitive sites, such as factories and commercial premises	All blasting	25 mm/s maximum limit. For sites containing equipment sensitive to vibration, the vibration level should be kept below manufacturer's specifications or levels that can be shown to adversely affect the equipment operation

Note

- a sensitive site includes houses and low rise residential buildings, theatres, schools and other similar buildings occupied by people.

Source – Table J4.5(A) – AS 2187.2 – 2006.

Table 3 – Ground vibration limits for control of damage to structures

Receiver	Type of blasting operations	Peak component particle velocity (mm/s)
Other structures or architectural elements that include masonry, plaster and plasterboard in their construction ¹		15 mm/s 4 Hz to 15 Hz, except for heritage structures where a frequency dependent vibration criteria would be determined in accordance with AS 2187.2 – 2006.

Receiver	Type of blasting operations	Peak component particle velocity (mm/s)	
Reinforced or framed structures. Industrial and heavy commercial buildings ²	All blasting	50 mm/s at 4 Hz and above	
Unreinforced or light framed structure. Residential or light commercial type building ²	All blasting	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above
Unoccupied structures of reinforced concrete or steel construction	All blasting	100 mm/s maximum, where agreed with the structure owner.	
Infrastructure service structures, such as pipelines, powerlines, cables and reservoirs.	All blasting	Limits to be determined by structural design methodology in consultation with the infrastructure service provider.	

Source:

- *Table J4.5(B) – AS 2187.2 – 2006.*
- *Table J4.4.2.1 – AS 2187.2 – 2006 (BS 7385-2).*

B24. The blasting criteria specified in conditions B22 and/or B23 may be increased where the Applicant has obtained the written agreement of the relevant landowner to increase the criteria. In obtaining the agreement the Applicant shall make available to the landowner:

- details of the proposed blasting program and justification for the proposed increase to blasting criteria including alternatives considered (where relevant);
- the environmental impacts of the increased blast limits on the surrounding environment and most affected residences or other sensitive receivers including, but not limited to noise, vibration and air quality and any risk to surrounding utilities, services or other structures; and
- the blast management and mitigation measures, and the procedures to be implemented to monitor blasting impacts.

The Applicant shall provide a copy of the written agreement to the Secretary and the EPA, including details of the consultation undertaken (with clear identification of proposed blast limits and potential property impacts) prior to commencing blasting at the increased limits.

Unless otherwise agreed by the Secretary, the following exclusions apply to the application of this condition:

- Any agreements reached may be terminated by the landowner at any time should concerns about the increased blasting limits be unresolved. Should an agreement be terminated by a landowner, the Applicant shall not exceed the criteria specified in conditions B22 and/or B23 for future blasting at that receiver.
- The blasting limit agreed to under any agreement for an occupied residential building can at no time exceed a maximum Peak Particle Velocity vibration level of 25 mm/s or maximum Airblast Overpressure level of 125 dBL.

B25. Wherever feasible and reasonable, piling activities shall be undertaken using quieter construction methods, such as bored piles or vibrated piles rather than impact or percussion piling methods.

B26. Prior to the use of the dynamic compaction construction method, the Applicant shall undertake an assessment of vibration generated by dynamic compaction on nearby sensitive receivers. Feasible and reasonable mitigation measures shall be implemented to minimise vibration impacts.

B27. During construction, affected educational institutions shall be consulted and reasonable steps taken to ensure that noise generating construction works in the vicinity of affected buildings are not timetabled during examination periods where practicable, unless other reasonable arrangements to the affected institutions are made at no cost to the affected institution.

Operational Noise

B28. The SSI shall be designed and operated with the objective of not exceeding the road noise criteria outlined in the *NSW Road Noise Policy* (DECCW, 2011).

B29. Where feasible and reasonable, operational noise mitigation measures shall be implemented at the start of construction (or at other times during construction) to minimise construction noise impacts.

SOIL, WATER QUALITY AND HYDROLOGY

Water Quality

B30. Except as may be expressly provided by an EPL, the Applicant shall comply with section 120 of the *Protection of the Environment Operations Act 1997*.

Hydrology and Flooding

B31. The hydrological and flooding impacts resulting from the SSI are to be assessed during detailed design against the 'Design Objectives for Flood Management' described in Section 2.1 of the EIS Working Paper – Hydrology and Flooding. This shall include assessment against the 'Flood Management Objectives' and the 'Other Flood Impact Considerations' as well as the other requirements of this section of the EIS. The hydrology assessment shall include the refinement of or development of new flood models (where required) for the 14 catchments investigated during the EIS. These models shall be operated for the same design floods considered in the EIS, as well as the 2000 year ARI and the probable maximum flood (PMF) design events.

B32. For the Corindi, Shark Creek and Farlows Flat areas, flooding and hydrological impacts resulting from existing highway infrastructure shall be assessed. As part of this assessment, flood models shall assess the impacts of recent highway upgrades in this area. Where the existing highway in these areas has resulted in adverse flooding and/or hydrological impacts, opportunities to reduce the quantum of these impacts shall be considered during the detailed design of the SSI, where feasible and reasonable.

B33. Where the objectives and considerations referred to in condition B31 cannot be complied with, the Applicant shall:

- achieve compliance through modified embankment or drainage design. This might include new or duplicated drainage structures designed to minimise afflux and other impacts to waterways that traverse the road alignment, to the greatest extent practicable; or
- achieve an acceptable level of mitigation of impacts through alternative design measures (e.g. raised access tracks) in consultation with the affected land-owner; or
- reach agreement with affected landowners on impacts to property.

Construction Soil and Water Management

B34. Soil and water management measures consistent with *Managing Urban Stormwater - Soils and Construction Vols 1 and 2, 4th Edition* (Landcom, 2004) and *Managing*

Urban Stormwater Soil and Construction Vols 2A and 2D Main Road Construction (Department of Environment and Climate Change, 2008) shall be employed during the construction of the SSI to minimise soil erosion and the discharge of sediment and other pollutants to land and/or water.

B35. Where available, and of appropriate chemical and biological quality, stormwater, recycled water or other water sources shall be used, where feasible and reasonable, in preference to potable water for construction activities, including concrete mixing and dust control.

B36. All surface water and groundwater shall be adequately treated as far as is practicable, prior to entering the stormwater system to protect the receiving water source quality.

Land Contamination

B37. Prior to the commencement of site preparation and excavation activities, or as otherwise agreed by the Secretary, in areas identified as having a moderate to high risk of contamination, a site audit shall be carried out by a suitably accredited contaminated site auditor. A **Site Audit Report** is to be prepared by the site auditor detailing the outcomes of Phase 2 contamination investigations within these areas. The Site Audit Report shall detail, where relevant, whether the land is suitable (for the intended land use) or can be made suitable through remediation.

Where the investigations identify that the site is suitable for the intended operations and that there is no need for a specific remediation strategy, measures to identify, handle and manage potential contaminated soils, materials and groundwater shall be identified in the Site Audit Report and incorporated into the Construction Environmental Management Plan. Where the investigations identify that the site is suitable for the intended operations and that a remediation strategy is required, the Site Audit Report shall include a remediation strategy for addressing the site contamination, and how the environmental and human health risks will be managed during the disturbance, remediation and/or removal of contaminated soil or groundwater, and be incorporated into the Construction Environmental Management Plan.

Where remediation is required, a **Site Audit Statement(s)** shall be prepared verifying that the site has been remediated to a standard consistent with the intended land use.

Note

- *Terms used in this condition have the same meaning as in the Contaminated Land Management Act 1997.*

WATERCOURSE CROSSINGS

B38. Watercourse crossings shall be designed and constructed in consultation with the DPI (Fisheries), **EPA**, NOW and DoE, and where feasible and reasonable, be consistent with the *Guidelines for Controlled Activities Watercourse Crossings* (Department of Water and Energy, February 2008), *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (Fairfull and Witheridge, 2003), *Policy and Guidelines for Fish Friendly Waterway Crossings* (NSW Fisheries, February 2004), and *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI Fisheries, 2013). Where multiple cell culverts are proposed for crossings of fish habitat streams, at least one cell shall be provided for fish passage, with an invert or bed level that mimics watercourse flows.

B39. All crossings of known Giant Barred Frog habitat or waterways with the confirmed presence of the species shall be designed and constructed with bridges. Should the Applicant construct a crossing structure other than a bridge, the Applicant shall demonstrate maintained connectivity for the Giant Barred Frog upstream and

downstream of that crossing for a monitoring period of three consecutive years, or such other period agreed by the Secretary in consultation with the **EPA**.

Demonstration of maintained habitat connectivity shall:

- (a) be based on baseline data that confirms the presence, nature and distribution of Giant Barred Frog population using a survey methodology that has been endorsed by the **EPA**, and detailed in the Mitigation Framework required in condition D1, and an assessment of the connectivity of the crossing site prior to commencement; or, if adequate baseline data is not provided to the satisfaction of the Secretary, be based on the assumption of occurrence of a population on either side of the crossing site; and
- (b) be based on evidence that the Giant Barred Frog has remained present upstream and downstream of the crossing site for the monitoring period, with periodic monitoring to occur at least biannually. Should the results of any instance of periodic monitoring record an absence of the Giant Barred Frog, the Applicant shall be required to demonstrate that this change is not as a result of the SSI within one month of the completion of that instance of periodic monitoring, to the satisfaction of the Secretary. Should the Secretary not be satisfied that the change is not a result of the SSI, the SSI will be deemed as the cause of the impact and the Applicant shall offset the loss of the habitat in accordance with this approval.

B40. Unless otherwise agreed by DPI (Fisheries), all crossings of Class 1 watercourses in known Oxleyan Pygmy Perch habitat shall be designed and constructed with a bridge or arch structure and, where feasible and reasonable, no supporting structures shall be installed within affected waterways.

B41. Where an Oxleyan Pygmy Perch habitat waterway is realigned or its stream profile is changed, or an in-stream structure is installed in the waterway (both permanent and temporary construction structures), the Applicant shall ensure that the final design of that waterway does not result in water velocities exceeding 0.4 metres per second under normal flow conditions. The Applicant shall determine normal flow conditions to the satisfaction of DPI (Fisheries) through baseline monitoring of known Oxleyan Pygmy Perch habitat waterways.

B42. The Applicant shall ensure that the SSI does not increase the afflux of waterways with known Oxleyan Pygmy Perch habitat by more than the relevant flood management objective in the documents referred to in condition A2 for flood events up to the 1 in 100 year event.

B43. The Applicant shall investigate the removal of the proposed embankment at station 145.2 and its replacement with an extension of the Richmond River bridge. The investigation shall consider issues around hydrology and flooding (including meeting the flooding objectives for bridges), constructability, cost, funding arrangements and visual impacts. The investigation shall include consideration of other relevant environmental impacts (noise, heritage, biodiversity, traffic etc.) and consider any alternative options. A copy of the investigation shall be submitted to the Secretary prior to the commencement of any bridge approach or embankment works in the vicinity.

HERITAGE

Aboriginal Heritage

B44. Prior to the commencement of construction affecting PAD site WWC Dirty Creek 1 and ancillary facilities at Section 4, Site 1; Section 4, Site 3; Section 7, Site 1; Section 10, Site 1a; and Section 11, Site 1a , the Applicant shall:

- (a) undertake field investigation, and where required, an archaeological investigation of the site(s) using a methodology generally consistent with testing undertaken for the Environmental Impact Statement, and prepared in

consultation with the **EPA** (Aboriginal heritage) and the Registered Aboriginal Parties; and

(b) prepare a report on the results of the archaeological investigation, including recommendations (such as further archaeological work) in consultation with the **EPA** and to the satisfaction of the Secretary, and shall include, but not necessarily be limited to:

- (i) consideration of measures to avoid or minimise disturbance to Aboriginal objects where objects of moderate to high significance are found to be present;
- (ii) recommendations for further investigations under condition B45 where impacts cannot be avoided; and
- (iii) details of management and mitigation measures to ensure there are no additional impacts due to pre-construction and construction activities; and

(c) submit the report to the Registered Aboriginal Parties, the **EPA** (Aboriginal heritage) and the Secretary.

B45. Prior to the commencement of construction activities affecting Aboriginal sites WWC39, WWC46, Tyndale 2 site, IR2W4, Site 11, E2/2, WWC37, Dubaljeen site (New Italy 1), The Gap Road 1, WX21 Site 8, Site 1, Site 2, Site 3 and Site 4 and sites recommended by condition B44 for further investigation, the Applicant shall:

- (a) develop a detailed salvage strategy, prepared in consultation with the **EPA** (Aboriginal heritage) and the Registered Aboriginal Parties. The salvage strategy shall be prepared to the satisfaction of the Secretary; and
- (b) undertake any further archaeological excavation works recommended by the results of the detailed salvage strategy.

Within twelve months of completing the above work, unless otherwise agreed by the Secretary, the Applicant shall prepare a report containing the findings of the excavations, including artefact analysis and Aboriginal Site Impacts Recording Forms (ASIR), and the identification of final storage location for all Aboriginal objects recovered (testing and salvage), in consultation with the Registered Aboriginal Parties, the **EPA** (Aboriginal heritage) and to the satisfaction of the Secretary.

The report shall be submitted to the Registered Aboriginal Parties, the **EPA** (Aboriginal heritage) and the Secretary.

Note:

- *Where archaeological testing has occurred as part of the environmental assessment and the results are included in the documents listed in condition A2, the sites tested shall be included in the final report prepared under condition B45.*

B46. Identified impacts to Aboriginal heritage, shall be minimised to the greatest extent practicable through both detailed design and construction, particularly with regard to the Aboriginal sites Gittoes Jali and the Melino site, and the Aboriginal culturally significant places identified as Corindi Massacres (section 1), Burials (section 1), Halfway Creek Ceremonial Site, Birrugaran and Mindi spiritual sites (sections 1, 2, 5 and 10), Pillar Valley men's and women's sites, Place H, Place I and Place J. Where impacts are unavoidable, works shall be undertaken in accordance with the strategy outlined in the Construction Heritage Management Plan.

B47. The Applicant shall not destroy, modify or otherwise physically affect Aboriginal sites WWC5, WWC7, WWC26, WWC92, WWC115, WWC139, Tyndale 1, Scarred/engraved Tree (section 7), C3/2/2, Saw Pit Creek / New Italy, Gittoes Jali 2, Cooks Hill, Broadwater, Law PAD, Law Scarred Tree, MST 3, C21, Melino Scarred Tree 4, MST 2, MST1, Rudgley Scarred Tree or Saezza 1.

Non-Aboriginal Heritage

B48. Prior to the commencement of construction affecting the Convent (12-14 Rivers Street), Harwood (item 21), the Applicant shall carry out further historical research and investigate the options for relocation of the convent building, in consultation with the Department of Planning and Environment and the OEH (Heritage Division), to the satisfaction of the Secretary.

B49. Prior to the commencement of construction in proximity to the following heritage items: 21; 23 (Roder's well and orchard); 26; 28; 29; and 43, the Applicant shall complete all archival recordings, including photographic recording of these heritage items, unless otherwise agreed by the Secretary.

The archival recording shall be undertaken by an experienced heritage consultant, in accordance with the Guidelines issued by the Heritage Council of NSW. The areas containing these items shall be clearly identified and/or fenced until the completion of the archival recordings. Within 6 months of completing the archival recording, the Applicant shall submit a report containing the archival and photographic recordings and the historical research, where required, to the Department of Planning and Environment, the Heritage Council of NSW, and the local library and the local Historical Society in the relevant local government area(s).

B50. Prior to construction affecting the following heritage items: 7; 23 (Roder's well and orchard) and 28, the Applicant shall carry out further historical and physical archaeological investigations of these heritage items, in consultation with the Department of Planning and Environment and the OEH (Heritage Division), to the satisfaction of the Secretary. These investigations shall:

- (a) include archaeological investigations and excavation in accordance with the Heritage Council's *Archaeological Assessments Guideline* (1996) using a methodology prepared, in consultation with the OEH (Heritage Division), and to the satisfaction of the Secretary. The archaeological investigation shall be undertaken by an archaeological heritage consultant, whose appointment has been endorsed by the Secretary. The nomination for the Excavation Director shall demonstrate ability to comply with the Heritage Council's *Criteria for the Assessment of Excavation Directors* (July 2011);
- (b) provide for the detailed analysis of any heritage items discovered during the investigations;
- (c) include management options for these heritage items (including options for relocation and display); and
- (d) if the findings of the investigations are significant, provide for the preparation and implementation of a heritage interpretation plan.

Within 12 months of completing the above work, unless otherwise agreed by the Secretary, the Applicant shall prepare a report containing the findings of the excavations, including artefact analysis, and the identification of a final repository for finds, prepared in consultation with the OEH (Heritage Division) and to the satisfaction of the Secretary. The report shall be submitted to the Department of Planning and Environment, the Heritage Council of NSW, and the local library and the local Historical Society in the relevant local government area(s).

Note:

- *Where archaeological testing has occurred as part of the environmental impact assessment for the SSI and the results are included in the documents listed in condition A2, the sites tested shall still form part of the methodology and final report prepared for the non-Aboriginal archaeological investigation program.*

B51. The Applicant shall not destroy, modify or otherwise physically affect the heritage items listed in Table 5-1, *Historic (non-Aboriginal) Heritage Assessment Working*

Heritage - General

B52. Identified impacts to heritage sites shall be minimised where feasible and reasonable through both detailed design and construction, particularly with regard to the historic site known as the North Coast Railway Branch Tramway, Glenugie.

Where impacts are unavoidable, works shall be undertaken in accordance with the actions to manage heritage construction impacts required by condition D26(d) and under the guidance of an appropriately qualified heritage specialist.

B53. This approval does not allow the Applicant to destroy, modify or otherwise physically affect human remains as part of the SSI.

B1. B54. The Applicant shall not destroy, modify or otherwise physically affect any heritage items outside the SSI footprint, unless otherwise agreed by the Secretary in accordance with condition **B54A**.

B54A. The Applicant may undertake archaeological investigations at sites outside the SSI boundary where the following works associated with the construction of the highway are proposed:

- i. Ancillary sites that do not meet the criterion set out in condition B73; or
- ii. Utilities or services, or
- iii. access and service roads and driveways; or
- iv. or similar works required for the project that are located within 5 metres of the SSI boundary (with the exception of drainage works in flood prone areas where such activities can be investigated within 20 metres of the SSI boundary).

These investigations are permitted where this is required to assess the potential Aboriginal and non-Aboriginal archaeological impacts of the ancillary facility or other works on previously unidentified heritage sites, provided:

- (a) any archaeological investigations undertaken under this condition shall be consistent with the requirements in condition B44 for Aboriginal heritage and condition B50 for non-Aboriginal heritage and with the Construction Heritage Management Plan or a methodology prepared to the satisfaction of the Secretary in consultation with OEH; and
- (b) the results of any relevant archaeological investigations undertaken under this condition shall be consistent with the reporting requirements of condition B45 for Aboriginal heritage and condition B50 for non-Aboriginal heritage and be described in the assessment of the ancillary facility required under conditions B74 and B75.

B55. The measures to protect heritage sites near or adjacent to the SSI during construction shall be detailed in the Construction Heritage Management Plan.

TRANSPORT AND ACCESS

B56. The SSI shall be designed with the objective of minimising adverse changes to existing access arrangements and services for other transport modes and, where feasible and reasonable, facilitate an improved level of access and service to other transport modes comparable to or better than the existing situation.

Access

B57. Safe pedestrian and cyclist access through or around worksites shall be maintained during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, a satisfactory alternate route shall be provided and signposted.

B58. Construction vehicles (including staff vehicles) associated with the SSI shall be managed to:

- (a) minimise parking or queuing on public roads;
- (b) minimise idling and queuing in local residential streets where practicable;
- (c) minimise the use of local roads (through residential streets and town centres) to gain access to construction sites and compounds; and
- (d) adhere to the nominated haulage routes identified in the Construction Traffic Management Plan.

B59. In relation to new or modified local road, parking, pedestrian and cycle infrastructure, the SSI shall, where feasible and reasonable, be designed:

- (a) in consultation with the relevant council;
- (b) take into consideration existing and future demand, road safety and traffic network impacts;
- (c) to meet relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Engineering Practice; and
- (d) be certified by an appropriately qualified person that has considered the above matters.

PROPERTY AND LANDUSE

B60. The Applicant shall ensure that the SSI is designed to minimise land take impacts to surrounding properties (including agricultural properties) as far as feasible and reasonable, in consultation with the affected landowners.

B61. Where the viability of existing agricultural operations are identified to be impacted by the land requirements of the SSI, the Applicant shall, at the request of these landowners, employ a suitably qualified and experienced independent agricultural expert, whose appointment has been endorsed by the Secretary, to assist in identifying alternative farming opportunities for the land, including purchase of other residual land to enable existing agricultural activities to continue.

B62. Unencumbered access to private property shall be maintained during construction unless otherwise agreed with the landowner in advance. A landowner's access that is physically affected by the SSI shall be reinstated to at least an equivalent standard, in consultation with the landowner.

B63. The Applicant shall, in consultation with relevant landowners, construct the SSI in a manner that minimises intrusion and disruption to agricultural operations/activities in surrounding properties (e.g. stock access, access to farm dams, etc.), unless otherwise agreed by the landowner.

B64. Any damage caused to property as a result of the SSI shall be rectified or the landowner compensated, within a reasonable timeframe, with the costs borne by the Applicant. This condition is not intended to limit any claims that the landowner may have against the Applicant.

Forestry Impacts

B65. Where the SSI traverses a state forest, the Applicant shall, in consultation with the NSW Forestry Corporation, ensure that construction does not unduly disrupt existing forestry activities, access for firefighting and access for other activities within state forests, unless otherwise agreed by the NSW Forestry Corporation.

AIR QUALITY

B66. The SSI shall be constructed in a manner that minimises dust emissions from the site, including wind-blown and traffic-generated dust and tracking of material onto public roads. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Applicant shall identify and implement all feasible and reasonable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.

HAZARDS AND RISK

B67. Dangerous goods, as defined by the Australian Dangerous Goods Code, shall be stored and handled strictly in accordance with:

- (a) all relevant Australian Standards;
- (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume, within the bund; and
- (c) the *Environment Protection Manual for Authorised Officers: Bunding and Spill Management*, technical bulletin (Environment Protection Authority, 1997).

In the event of an inconsistency between the requirements listed from (a) to (c) above, the most stringent requirement shall prevail to the extent of the inconsistency.

WASTE MANAGEMENT

B68. Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.

B69. The reuse and/or recycling of waste materials generated on site shall be maximised as far as practicable, to minimise the need for treatment or disposal of those materials off site.

B70. All liquid and/or non-liquid waste generated on the site shall be assessed and classified in accordance with *Waste Classification Guidelines* (Department of Environment, Climate Change and Water, 2009).

B71. All waste materials removed from the site shall only be directed to a waste management facility or premises lawfully permitted to accept the materials.

UTILITIES AND SERVICES

B72. Utilities, services and other infrastructure potentially affected by construction and operation shall be identified prior to construction to determine requirements for access to, diversion, protection, and/or support. Consultation with the relevant owner and/or provider of services that are likely to be affected by the SSI shall be undertaken to make suitable arrangements for access to, diversion, protection, and/or support of the affected infrastructure as required. The cost of any such arrangements shall be borne by the Applicant.

ANCILLARY FACILITIES

B73. The sites for ancillary facilities that are associated with the construction of the SSI and that have not been identified and assessed in the documents listed in condition A2 shall:

- (a) be located more than 50 metres from a waterway (100 metres for a *State Environmental Planning Policy No. 14* wetland or known Oxleyan Pygmy Perch habitat waterway);
- (b) not impact on connectivity structures or vegetation leading to a connectivity structure;
- (c) be located within or adjacent to the SSI boundary;
- (d) have ready access to the road network;
- (e) be located in areas of low ecological significance and require no clearing of native vegetation;
- (f) be located more than 50 metres from threatened species and endangered ecological communities and their habitats;
- (g) be located on relatively level land;
- (h) be separated from the nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant) and comply with construction noise management levels at sensitive receivers;
- (i) be above the 20 year ARI flood level unless a contingency plan to manage flooding is prepared and implemented;
- (j) have minor impacts on flood storage and not result in obstruction of floodplain flow or blockage of culverts and drains;
- (k) not unreasonably affect the land use of adjacent properties;
- (l) operate in accordance with the construction hours set out in conditions B15 and B16;
- (m) provide sufficient area for the storage of material to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours; and

(n) be located in areas of low heritage conservation significance (including areas identified as being of Aboriginal cultural value) and not impact on heritage sites beyond those already impacted by the SSI.

The Applicant shall undertake an assessment of the facility against the above criteria in consultation with the relevant public authority(s) and the relevant council. The assessment shall be approved by the Environmental Representative and included in the Ancillary Facilities Management Plan required under condition D21.

B74. Ancillary facilities that have not been previously identified and assessed in the documents listed in condition A2, and do not meet the criteria set out under condition B73, shall be approved by the Environmental Representative prior to its establishment. In obtaining this approval, the Applicant shall consult with the relevant public authority(s) and the relevant council, and demonstrate to the satisfaction of the Environmental Representative, how the potential environmental impacts can be mitigated and managed to acceptable standards. The outcomes of the assessment shall be documented in a report and include, but not necessarily be limited to:

- (a) details on the site location and access arrangements;
- (b) a description of the activities to be undertaken;
- (c) outcomes of the assessment of the site against the locational criteria set out in condition B73;
- (d) an assessment of the environmental impacts on the site and the surrounding environment, including, but not limited to noise, vibration, air quality, traffic and access during site establishment and operation, flora and fauna, heritage, erosion and sedimentation, water quality and light spill;
- (e) details of the mitigation, monitoring and management procedures specific to the ancillary facility that would be implemented to minimise environmental impacts; and
- (f) demonstrated overall consistency with the approved SSI (including impacts identified in the documents listed in condition A2).

A copy of the report shall be included in the Ancillary Facilities Management Plan.

B75. Notwithstanding condition B74, ancillary facilities that have not been previously identified and assessed in the documents listed in condition A2 and result in additional impacts to biodiversity, heritage, flooding and noise beyond those approved for the SSI, shall be approved by the Secretary prior to their establishment. In order to obtain this approval, the Applicant shall undertake an assessment of the ancillary facility in accordance with condition B74 and forward a copy of the assessment report to the Secretary, as part of the approval submission, at least one month prior to the establishment of the facility.

B76. The land on which ancillary facilities are located shall be rehabilitated to at least their pre-construction condition or better, unless otherwise agreed by the landowner.

B77. Where changes are made to the boundary or use of an ancillary facility, including facilities identified in the documents listed in condition A2, the Applicant shall assess the facility against the criteria set out in condition B73. If the ancillary facility site:

- (a) does not meet the criteria set out under condition B73 the Applicant shall seek the approval of the Environmental Representative in accordance with condition B74; or
- (b) results in impacts to biodiversity, heritage, flooding and noise beyond those approved for the SSI, the Applicant shall seek the approval of the Secretary in accordance with condition B75.

The relevant approval shall be obtained prior to the establishment of the ancillary facility.

B78. The Applicant may undertake archaeological investigations at ancillary sites that do not meet the criterion set out in condition B73, where this is required to assess the potential Aboriginal and non-Aboriginal archaeological impacts of the ancillary facility on previously unidentified heritage sites, provided:

- (a) any archaeological investigations undertaken under this condition shall be consistent with the requirements in condition B44 for Aboriginal heritage and condition B50 for non-Aboriginal heritage and with the Construction Heritage Management Plan or a methodology prepared to the satisfaction of the Secretary in consultation with ~~EPA~~; and
- (b) the results of any relevant archaeological investigations undertaken under this condition shall be consistent with the reporting requirements of condition B45 for Aboriginal heritage and condition B50 for non-Aboriginal heritage and be described in the assessment of the ancillary facility required under conditions B74 and B75.

BORROW SITES

B79. The Applicant shall ensure that material extracted from the borrow sites established for the SSI, is only used for the construction of the SSI subject to this approval, and no other sections of the Pacific Highway or other works.

CONSTRUCTION ACTIVITIES

B80. The Applicant shall ensure that all plant and equipment used at the site is:

- (a) maintained in a proper and efficient condition; and
- (b) operated in a proper and efficient manner.

OPERATIONAL PERFORMANCE

B81. The Applicant shall ensure that during the operation of the SSI, water quality risks to the Woodburn Borefield drinking water catchment are minimised to the satisfaction of Rous Water.

PART C

COMMUNITY INFORMATION AND REPORTING

COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

C1. Prior to the commencement of construction or as otherwise agreed by the Secretary, the Applicant shall prepare and implement a **Community Communication Strategy** to the satisfaction of the Secretary. The Strategy shall provide mechanisms to facilitate communication between the Applicant (and its contractor(s)), the Environmental Representative (see condition D22), the relevant council and community stakeholders (particularly adjoining landowners) on the construction environmental management of the SSI. The Strategy shall include, but not be limited to:

- (a) identification of stakeholders to be consulted as part of the Strategy, including affected and adjoining landowners;
- (b) procedures and mechanisms for the regular distribution of information to community stakeholders on construction progress and matters associated with environmental management;
- (c) the formation of community-based focus groups for key environmental management issues for the SSI. The Strategy shall provide detail on the structure, scope, objectives and frequency of the community-based focus groups;
- (d) procedures and mechanisms through which the community stakeholders can discuss or provide feedback to the Applicant and/or Environmental Representative in relation to the environmental management and delivery of the SSI;
- (e) procedures and mechanisms through which the Applicant can respond to enquiries or feedback from the community stakeholders in relation to the environmental management and delivery of the SSI; and
- (f) procedures and mechanisms that would be implemented to resolve issues/disputes that may arise between parties on the matters relating to environmental management and the delivery of the SSI. This may include the use of an appropriately qualified and experienced independent mediator.

Issues that shall be addressed through the Community Communication Strategy include (but are not necessarily limited to):

- (i) traffic management (including property access, pedestrian access);
- (ii) heritage matters;
- (iii) landscaping and urban design matters;
- (iv) construction staging, hours and activities;
- (v) noise and vibration mitigation and management;
- (vi) air quality and dust;
- (vii) water quality, hydrology and flooding matters; and
- (viii) biodiversity matters.

The Applicant shall maintain and implement the Strategy throughout construction of the SSI.

Complaints and Enquiries Procedure

C2. Prior to the commencement of pre-construction and construction, or as otherwise agreed by the Secretary, the Applicant shall ensure that the following are available for community enquiries and complaints for the duration of construction:

- (a) a 24 hour telephone number(s) on which complaints and enquiries about the SSI may be registered;
- (b) a postal address to which written complaints and enquiries may be sent;
- (c) an email address to which electronic complaints and enquiries may be transmitted; and

(d) a mediation system for complaints unable to be resolved.

The telephone number, the postal address and the email address shall be published in newspaper(s) circulating in the local area prior to the commencement of construction and prior to the commencement of operation. This information shall also be provided on the website (or dedicated pages) required by this approval.

C3. Prior to the commencement of pre-construction and construction, or as otherwise agreed by the Secretary, the Applicant shall prepare and implement a **Construction Complaints Management System** consistent with AS 4269: *Complaints Handling* and maintain the System for the duration of construction and up to 12 months following completion of the SSI.

Information on all complaints received, including the means by which they were addressed and whether resolution was reached, with or without mediation, shall be maintained in a complaints register and included in the construction compliance reports required by this approval. The information contained within the System shall be made available to the Secretary on request.

Provision of Electronic Information

C4. Prior to the commencement of pre-construction and construction, or as otherwise agreed by the Secretary, the Applicant shall establish and maintain a new website, or dedicated pages within an existing website, for the provision of electronic information associated with the SSI, for the duration of construction and for 12 months following completion of the SSI. The Applicant shall, subject to confidentiality, publish and maintain up-to-date information on the website or dedicated pages including, but not necessarily limited to:

- (a) information on the current implementation status of the SSI;
- (b) a copy of the documents listed in condition A2, and any documentation supporting modifications to this approval that may be granted from time to time;
- (c) a copy of this approval and any future modification to this approval;
- (d) a copy of each relevant environmental approval, licence or permit required and obtained in relation to the SSI;
- (e) a copy of each current strategy, plan, program or other document required under this approval;
- (f) the outcomes of compliance tracking in accordance with condition D27 of this approval; and
- (g) details of contact point(s) to which community complaints and enquiries may be directed, including a telephone number, a postal address and an email address.

PART D

ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

BIODIVERSITY

Mitigation Framework

D1. The Applicant shall develop a framework for finalising mitigation measures for threatened species. This **Mitigation Framework** shall be developed by a suitably qualified and experienced ecologist in consultation with DPI (Fisheries), **EPA** and DoE, and submitted to the satisfaction of the Secretary prior to commencement of detailed design of the relevant stage, unless otherwise agreed by the Secretary. The Mitigation Framework shall detail the process for finalising the biodiversity strategies, plans and programs required under this approval. The Mitigation Framework shall include:

- (a) a description of the methodology of all proposed pre-construction species and habitat surveys, including surveys undertaken in the 2013-2014 spring and summer seasons and as otherwise required under this project approval, and with reference where relevant to compliance with relevant NSW and Commonwealth field survey methods and guidelines;
- (b) a summary of potential changes to the avoidance, mitigation and/or offset measures specified in the documents listed in condition A2, as justified by the results of surveys described in condition D1(a);
- (c) a summary of the potential avoidance, mitigation and/or offset measures for all species for which the proposed level of impact or mitigation required differs from that assessed in the documents listed in condition A2, including evidence that those measures would achieve the same or an improved biodiversity outcome;
- (d) provision for updating the relevant Threatened Species Management Plans required under condition D8; and
- (e) a schedule for submission of all biodiversity strategies, plans and programs required under this approval in accordance with the requirements for submission in the conditions below.

D2. The Applicant shall prepare and implement a **Connectivity Strategy**, to be submitted and approved by the Secretary prior to the commencement of construction. The strategy shall describe the rationale for, and final design and location of, fauna connectivity structures for the SSI and shall demonstrate the effectiveness of connectivity measures for the species targeted for the crossing. The Strategy shall be developed from the draft Connectivity Strategy in the documents listed in condition A2 in consultation with the **EPA**, DPI (Fisheries) and DoE, to the satisfaction of the Secretary. The Strategy shall include:

- (a) details of all crossings for terrestrial and aquatic fauna, including but not limited to land bridges, bridge, arch and culvert crossings, and crossings for arboreal fauna;
- (b) justification for the location and design, and spacing of the connectivity structures, with reference to relevant State and Commonwealth threatened species guidelines and the results of on-ground surveys as required by D2(d);
- (c) demonstration of the effectiveness of the connectivity structures (including exclusionary fencing) in terms of location, design and number of connectivity structures to mitigate impacts to the relevant threatened species, and that the crossings:
 - (i) maintain or improve connectivity and movement pathways;
 - (ii) reduce the risk of mortality for threatened species;
 - (iii) are located at locations, at sufficient frequency along the alignment, based on the ecological requirements of the targeted species, including but not limited to home range size, movement patterns, and habitat use;

- (d) the results of surveys undertaken to determine the habitat, species movement patterns, distribution of species to confirm the design and location;
- (e) consideration of connectivity under the existing highway, service roads and local roads (servicing over 100 vehicles per day);
- (f) commitment that pathways to connectivity structures are not to be impeded by ancillary facilities, rest areas or service roads, or local roads (servicing over 100 vehicles per day) that are realigned as part of the SSI or experience an increase in traffic volumes during operation of the SSI;
- (g) commitment to implement the landscaping of vegetation leading to connectivity structures;
- (h) a **fencing strategy**, describing the location, design and length of fencing, which must extend beyond the edges of habitat for threatened species;
- (i) the maintenance of connectivity measures and fencing for the life of the impact of the action, including the timing and frequency;
- (j) an assessment of the flooding risk for proposed structures, and measures to confirm and provide for flood immunity of those structures in light of this assessment. The agreement of the **EPA** on flood immunity levels shall be obtained prior to the commencement of construction of the relevant stage;
- (k) commitment that all bridges in identified wildlife corridors, or adjacent to threatened species habitat, or are likely to provide connectivity for threatened species based on surveys undertaken in accordance with the Mitigation Framework required in condition D1, shall provide a minimum three metre wide dry passage from toe of the scour protection to the top of the bank, with natural substrate and refuge features. Where this criteria cannot be achieved and with the agreement of the **EPA**, consideration shall be given to the use of suitable materials in, and the final form of, the scour protection to provide for the safe and effective passage of fauna;
- (l) detailed consideration of the effects of connectivity structures on the maintenance or improvement of population viability and gene flow; and
- (m) incorporate the outcomes of the Mitigation Framework required under condition D1.

Unless connectivity measures can be demonstrated to be effective at successfully mitigating the barrier and fragmentation impact to relevant species, in accordance with the requirements of the construction flora and fauna management plan required under condition D26(e), and threatened species management plans required under conditions D8 and D9, the residual impact to connectivity shall be offset.

Where the location and/or design of connectivity structures has changed from that identified in the documents listed under conditions A2(c) and A2(e), the Strategy shall demonstrate how the new location and/or design would result in an improved biodiversity outcome. The Strategy shall clearly identify how the connectivity structures will work in conjunction with other biodiversity measures, such as complementary fauna exclusion fencing measures and the regeneration/replanting of native vegetation, to be implemented for the SSI.

The Applicant shall demonstrate to the satisfaction of the Secretary how public authority comments on the Strategy have been addressed.

The Strategy may be submitted in stages to suit the staging of the SSI.

Biodiversity Offset Strategy

D3. The Applicant shall prepare and implement a **Biodiversity Offset Strategy** to outline how the ecological values lost as a result of the SSI will be offset in perpetuity. The Strategy shall be developed from the draft Biodiversity Offset Strategy in the

documents listed in condition A2, in consultation with the **EPA**, DPI (Fisheries) and DoE, to the satisfaction of the Secretary.

Unless otherwise agreed to by the **EPA**, DPI (Fisheries) and DoE, offsets shall be provided on a like-for-like basis and at a minimum ratio of 4:1 for native vegetation (including salt marsh) impacted by the SSI or as required by the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (Commonwealth of Australia 2012) and *Offsets Assessment Guide* (Commonwealth of Australia 2012), whichever is the greater.

The Strategy shall include, but not necessarily be limited to:

- (a) the objectives and outcomes that would be sought through a biodiversity offset package, including to achieve a neutral or net beneficial outcome for all threatened species and endangered ecological communities likely to be impacted directly or indirectly during both the construction and operation of the SSI;
- (b) confirmation of the vegetation type/habitat (in hectares) to be cleared and their condition, and the size of offsets required (in hectares);
- (c) details of the available offset measures that have been selected to compensate for the loss of existing native vegetation (including mangroves, salt marsh and riparian vegetation), threatened and vulnerable species and Endangered Ecological Communities and their habitats, and identification of potential offset sites;
- (d) consideration of contingency measures for offsets to address potential changes to impacted areas as a result of detailed design changes;
- (e) a process for addressing and incorporating offset measures arising from changes in biodiversity impacts (where these changes are generally consistent with the biodiversity impacts identified for the SSI in documents listed under condition A2), including:
 - (i) changes to the SSI footprint due to detailed design;
 - (ii) changes to predicted impacts as a result of changes to mitigation measures;
 - (iii) the identification of additional species/habitat through pre-clearance surveys and construction; and
 - (iv) additional impact associated with the establishment of ancillary facilities;
- (f) the decision-making framework that would be used to select the final suite of offset measures to achieve the objectives and outcomes established within the Strategy, including the ranking of offset measures; and
- (g) options for securing and management of biodiversity offsets in perpetuity.

The Applicant may elect to satisfy the requirements of this condition by identifying a suitable offset strategy which addresses impacts from multiple Pacific Highway Upgrade projects within the North Coast bioregion. Any such strategy, including an agreement made with **EPA** and DoE, shall be approved by the Secretary within a timeframe agreed to by the Secretary.

The Biodiversity Offset Strategy shall be submitted to, and approved by, the Secretary prior to the commencement of construction work that would result in the disturbance of the relevant existing ecological communities, threatened species, or their habitat, unless otherwise agreed by the Secretary.

D4. Prior to the commencement of construction work that would result in the disturbance of the relevant existing ecological communities, threatened species, or their habitat, unless otherwise agreed by the Secretary, the Applicant shall submit for the approval of the Secretary, the offset sites for the species listed under condition D4(a). The

selection of the offset sites should be undertaken in consultation with the **EPA**, **DPI** (Fisheries) and **DoE**. Submission of the offset sites for approval shall be accompanied by:

- (a) details of offset sites to compensate the impacts on:
 - (i) Koala populations in Coolgardie/Bagotville, Broadwater and Woombah/Iluka;
 - (ii) Moonee Quassia (*Quassia sp. Moonee Creek*);
 - (iii) Sandstone Rough-Barked Apple (*Angophora robur*);
 - (iv) Singleton Mint Bush (*Prostanthera cineolifera*); and
 - (v) Lowland Rainforest in Sub-tropical Australia;
- (b) a map that defines the locations and boundaries of the sites;
- (c) demonstration, through ground truthing survey or an alternative method(s), the adequacy of the site(s), in terms of habitat suitability and presence of the relevant species, to offset the impacts of the SSI;
- (d) consideration of how the offsets achieve the outcomes required by the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* to the satisfaction of **DoE**; and
- (e) details of how the offset sites would be secured and managed in perpetuity.

Biodiversity Offset Package

D5. The Applicant shall prepare and implement (following approval) a **Biodiversity Offset Package**, within twenty-four months of approval of the Biodiversity Offset Strategy, or as otherwise agreed by the Secretary. The package shall detail how the ecological values lost as a result of the SSI will be offset. The Biodiversity Offset Package shall be prepared in consultation with the **EPA**, **DPI** (Fisheries) and **DoE**, for the approval of the Secretary, and shall (unless otherwise agreed by the Secretary) include, but not necessarily be limited to:

- (a) the identification of the extent and types of habitat that would be lost or degraded as a result of the final design of the SSI;
- (b) the objectives and biodiversity outcomes to be achieved;
- (c) details of the final suite of the biodiversity offset measures selected and secured in accordance with the Biodiversity Offset Strategy including the identification of all offset sites, including, offset attributes, shapefiles, textual descriptions and maps that clearly define the location, boundaries of the offset areas;
- (d) an assessment demonstrating how the offset area(s) achieve the outcomes required by the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* and user guide to the written satisfaction of **DoE**;
- (e) the management and monitoring requirements for compensatory habitat works and other biodiversity offset measures proposed to ensure the outcomes of the package are achieved, including:
 - (i) the monitoring of the condition of species and ecological communities at offset locations;
 - (ii) the methodology for the monitoring program(s), including the number and location of offset monitoring sites, and the sampling frequency at these sites;
 - (iii) provisions for the annual reporting of the monitoring results for a set period of time as determined in consultation with the **EPA**, **DPI** (Fisheries) and **DoE**; and
 - (iv) the monitoring and reporting on the effectiveness of these measures, and progress against the performance and completion criteria;
- (f) the results of targeted field surveys within the offset sites (undertaken at any ecologically appropriate time of the year) to assess and describe habitat suitability, presence/absence of threatened species and ecological communities and an assessment of the baseline population;

- (g) a description of the current quality (prior to any management activities) of the offset area(s);
- (h) targeted management actions, regeneration and/or revegetation strategies to be undertaken on the offset area(s) to improve the ecological quality of these areas for the relevant species and communities;
- (i) clear performance objectives for management actions that will enable maintenance and enhancement of habitat within the offset area, as well as contribute to the better protection of individuals and/or populations of the relevant species;
- (j) performance and completion criteria for evaluating the management of the offset area, including contingency actions, criteria for triggering contingency actions and a commitment to the implementation of these actions in the event that performance objectives are not met; a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;
- (k) timing and responsibilities for the implementation of the provisions of the Biodiversity Offset Package and achieving performance objectives;
- (l) details of who would be responsible for monitoring, reviewing, and implementing the Biodiversity Offset Package; and
- (m) a description of funding arrangements or agreements including work programs and responsible entities.

Land offsets shall be consistent with the *Principles for the use of Biodiversity Offsets in NSW*. Any land offset shall be enduring and be secured by a conservation mechanism which protects and manages the land in perpetuity. Where land offsets cannot solely achieve compensation for the loss of habitat, additional measures shall be provided to collectively deliver an improved or maintained biodiversity outcome for the region.

The Biodiversity Offset Package shall include details of the offset sites approved under condition D4, and timeframe for the delivery of the offset sites.

Where monitoring required under conditions D8 and/or D9 indicates that biodiversity outcomes are not being achieved, remedial actions, as approved by the Secretary, shall be undertaken to ensure that the objectives of the Biodiversity Offset Package are achieved.

The requirements of the Biodiversity Offset Package shall be implemented by the responsible parties according to the timeframes set out in the Biodiversity Offset Package, unless otherwise agreed by the Secretary.

Note:

- *If an offset site proposed as a part of the Biodiversity Offset Strategy or Biodiversity Offset Package is already required to be protected as a result of a separate approval, only the management actions which can be demonstrated to be additional to those required for the separate approval, can be considered as an offset for this project in accordance with the EPBC Act Environmental Offsets Policy 2012 (or subsequent published revisions).*

D6. Prior to the commencement of construction of the relevant stage that would result in the disturbance of native vegetation (or as otherwise agreed by the Secretary), the Applicant shall prepare and implement a **Nest Box Plan** to provide replacement hollows for displaced fauna. The Plan shall be prepared in consultation with the **EPA** and to the satisfaction of the Secretary. The Plan shall be prepared by a suitably qualified and experienced ecologist and detail the number and type of nest boxes to be installed, which shall be justified based on the number and type of hollows removed (based on pre clearing surveys), the density of hollows in the area to be cleared and in adjacent areas, and the availability of adjacent food resources. The Plan shall also

provide details of maintenance protocols for the nest boxes installed including responsibilities, timing and duration.

Translocation Strategy

D7. The Applicant shall prepare and implement a **Flora Translocation Strategy** to determine the feasibility and potential efficacy of translocation measures (as identified in the threatened species management plans required under condition D8), prior to the commencement of construction work that would result in the disturbance of threatened flora species for which translocation is proposed. The Strategy shall be prepared by a suitably qualified and experienced ecologist, in consultation with the **EPA** and DoE, and to the satisfaction of the Secretary. The Strategy shall include:

- (a) a feasibility assessment of timeframe and staging requirements, availability of expertise, risk effectiveness analysis and availability/suitability of translocation sites;
- (b) detail of species specific information on the proposed methods of, and discussion of results of past recorded responses to, translocations;
- (c) a framework for the translocation process applicable to each affected species; and
- (d) consideration of appropriate compensatory habitat in the Biodiversity Offsets Package required under condition D5 where translocation is not reasonable or feasible.

Threatened Species Management Plans

D8. The Applicant shall prepare and implement **Threatened Species Management Plans** to detail how impacts of the SSI will be minimised and managed specifically for each species identified as significantly impacted in the documents listed in condition A2 or in accordance with condition D1. The Plans shall be developed from the draft Threatened Species Management Plans included in the documents listed in condition A2(c) (subject to condition D9), in consultation with **EPA**, DPI (Fisheries) and DoE, and to the satisfaction of the Secretary, and shall include but not necessarily be limited to:

- (a) demonstration that adequate surveys have been undertaken to assess the impacts of the SSI with reference to the Mitigation Framework developed under condition D1, including baseline data collected from surveys, undertaken by a suitably qualified and experienced ecologist on threatened species and ecological communities within all habitat areas to be cleared of vegetation for the SSI, that are likely to contain these species and that are likely to be adversely impacted by the SSI (as determined by a suitably qualified expert). The data shall address the densities, distribution, habitat use and movement patterns of these species;
- (b) identification of potential impacts on each species;
- (c) details of and demonstrated effectiveness of the proposed avoidance and mitigation and management measures to be implemented for each threatened species including measures to at least maintain habitat values of habitat areas compared to baseline data and maintain connectivity for the relevant species;
- (d) an adaptive monitoring program to assess the use of the mitigation measures identified in conditions B10 and D2. The monitoring program shall nominate appropriate and justified monitoring periods, performance parameters and criteria against which effectiveness of the mitigation measures will be measured and include operational road kill and fauna crossing surveys to assess the use of fauna crossings and exclusion fencing implemented as part of the SSI;
- (e) monitoring methodology for threatened flora and fauna adjacent to the SSI footprint;
- (f) goals and performance indicators to measure the success of mitigation measures, which shall be specific, measurable, achievable, realistic and timely (SMART), and be compared against baseline data;

- (g) methodology for the ongoing monitoring of road kill, the species densities, distribution, habitat use and movement patterns, and the use of fauna crossings during construction and operation of the SSI, including the proposed timing, and duration of that monitoring;
- (h) provision for the assessment of monitoring data to identify changes to habitat usage and whether this can be attributed to the SSI;
- (i) details of contingency measures that would be implemented in the event of changes to habitat usage patterns, entities, distribution, and movement patterns attributable to the construction or operation of the SSI, based on adequate baseline data;
- (j) mechanisms for the monitoring, review and amendment of these plans;
- (k) provision for ongoing monitoring during operation of the SSI (for operation/ongoing impacts) until such time as the use and effectiveness of mitigation measures can be demonstrated to have been achieved over a minimum of three successive monitoring periods, unless otherwise agreed by the Secretary in consultation with the **EPA**, DPI (Fisheries) and DoE; and
- (l) provision for annual reporting of monitoring results to the Secretary and the **EPA**, DPI (Fisheries) and DoE, or as otherwise agreed by those agencies.

In developing the Plans, the Applicant shall demonstrate to the satisfaction of the Secretary and DoE, how the public authorities and expert reviewer recommendations provided for each draft plan in the documents listed in condition A2(c) have been addressed, including detailed justification of any variance from the recommendations of the expert reviewer of the management plans, including analysis of potential risk to the threatened species.

The Plans must be submitted and approved by the Secretary prior to commencement of construction of the relevant stages of the action, and implemented prior to commencement of construction of the relevant stages, unless otherwise agreed by the Secretary.

D9. As part of the Threatened Species Management Plans required under condition D8, the Applicant shall prepare and implement a **Koala Management Plan** to demonstrate the ongoing survival of the Koala populations at Coolgardie/Bagotville, Broadwater and Woombah/Iluka. The Plan shall be prepared by a suitably qualified and experienced species expert and shall include, but not necessarily be limited to:

- (a) results of detailed surveys to determine:
 - (i) the population status of the Coolgardie/Bagotville, Broadwater and Woombah/Iluka Koala populations;
 - (ii) habitat use and movement patterns of Koala populations within five kilometres of the proposed upgrade, or such area as determined by the independent ecologist; and
 - (iii) habitat areas likely to be fragmented by the SSI; including the results of SPOT assessment and radio tracking.

The results and adequacy of surveys shall be verified by an independent suitably qualified and experienced ecologist with appropriate qualifications and experience in Koala and road ecology. Where appropriate, the Applicant may vary the required area of survey specified under condition D9(a)(ii) to the satisfaction of the independent ecologist;

- (b) a detailed assessment of the impacts to the Koala populations based on the survey results required by condition D9(a), including population impacts and the identification of habitat likely to be fragmented and/or isolated as a result of the SSI;
- (c) a detailed description, including the location and design, of all proposed avoidance and mitigation measures;

(d) justification that the location and design of mitigation measures:

- (i) have been designed with the objective of no Koala road kill from the commencement of construction of the SSI. In the event that a Koala is injured or killed during construction or operation, this shall be reported on the Applicant's website within 24 hours of this occurring, and the record shall remain available for a period of at least five years, unless otherwise agreed by the Secretary;
- (ii) include permanent fencing of the entire SSI for the length of the distribution of the Coolgardie/Bagotville, Broadwater and Woombah/Iluka populations and for two kilometres beyond the distribution of the Coolgardie/Bagotville, Broadwater and Woombah/Iluka population, following the highway or to the nearest natural barrier to Koala movement (e.g. river), after baseline surveys are complete in accordance with condition D9(a) and prior to operation;
- (iii) result in the complete, safe crossing of fauna crossings by the Koala. Fauna crossings shall be provided at a sufficient frequency to ensure that habitat connectivity is maintained or improved from pre-construction conditions, as determined by the independent ecologist and agreed by **EPA**;
- (iv) provide sufficient opportunities for species dispersal and re-colonisation as determined by the independent ecologist and **EPA**;
- (v) are in areas that, and are at a sufficient frequency to, achieve (i) - (iv), based on site specific information contained in the survey results required by condition D9(a) and the ecological requirements of the Koala, including but not limited to home range size, local movement patterns and habitat use, in accordance with the advice of the independent ecologist and **EPA**;
- (vi) all koala underpass structures shall have a minimum height and width of 2.4 metres and a maximum length of 40 metres, or a minimum height and width of 3 metres and a maximum length of 50 metres. The underpass/culvert entrance shall be located at ground level, and no higher in the fill. Structures that provide passage over the road shall have a minimum width of 30 metres and shall be treated with contiguous habitat features;
- (vii) provide passage for Koalas under or over the existing highway (where the existing highway forms part of the SSI) and service roads or local roads (servicing over 100 vehicles per day);
- (viii) effectively minimise the risk of predation from dogs in both dedicated and combined crossings;
- (ix) provide dry passage for dedicated fauna crossings and for combined fauna crossings to the satisfaction of **EPA** and DoE, at a flood immunity level determined in accordance with condition D2(c)(j);
- (x) provide habitat linkages to crossing structures from adjacent Koala habitat; and
- (xi) ensures that pathways to connectivity structures are not impeded by ancillary facilities, rest areas, service roads or local roads;

(e) if the mitigation measures discussed in condition D9(d) cannot be demonstrated to be effective to the satisfaction of the Secretary, in consultation with **EPA** and DoE, provision for the Plan to be revised to include the design and construction of a minimum of one dedicated underpass or land bridge every 500 metres. Underpass structures shall have a minimum height and width of three metres and a maximum length of 50 metres;

(f) provision for the installation and vegetation planting of fauna overpasses prior to the commencement of construction;

(g) a **revegetation strategy** to be implemented to increase connectivity adjacent to the SSI and leading to crossing locations, and the provision of vegetation

planting on land bridges, to ensure the establishment of the vegetation prior to the commencement of construction;

(h) details of the proposed monitoring methodology to ensure the effectiveness of the mitigation measures and the ongoing survival of the Coolgardie/Bagotville, Broadwater and Woombah/Iluka Koala populations. Monitoring shall:

- (i) include goals that demonstrate the mitigation measures are effective, including clear objectives, milestones, performance measures, corrective actions, and thresholds for corrective actions, and timeframes for completion;
- (ii) occur until such time as the mitigation measures are demonstrated to be effective for three consecutive monitoring periods, or as agreed by the Secretary, to the satisfaction of the independent ecologist and OEH; and
- (iii) for the purposes of the Coolgardie/Bagotville population, consider the results of the surveys undertaken in the *Koala habitat and population assessment: Ballina Shire Council LGA* (Biolink Ecological Consultants Pty Ltd, November 2013) in determining the baseline population;

(i) where the results of monitoring undertaken in accordance with condition D9(h) suggests that the mitigation measures are ineffective or changes to the population have occurred, the Applicant shall provide the Secretary, within one month of recording the changes, the corrective actions that have been implemented and/or proposed to be implemented, or a procedure for demonstrating that this change is not a result of the SSI. Should the Applicant be unable to demonstrate to the satisfaction of the Secretary that any change to the population is not attributable to the SSI, the SSI shall be deemed as the cause of the impact and the Applicant shall, within one month of these findings, provide, to the satisfaction of the Secretary, in consultation with the **EPA** and DoE, the proposed corrective actions to address the impacts of the SSI. Any required corrective actions shall include, but not necessarily be limited to:

- (i) installation of further crossings or modifications to existing crossings and the provision of evidence of the complete, safe crossing of these fauna crossings by the Koala. Any additional crossings shall be provided at a sufficient frequency to ensure that habitat connectivity is maintained or improved from pre-construction conditions, within two years of their installation; and
- (ii) reassessment of all revegetation areas and frequent reporting and maintenance including addressing failures;

(j) if the measures in condition D9(i) cannot be demonstrated to be successful within one year of their implementation, procedure for the submission of further offsets in accordance with conditions D5 and D6(j), to be provided within one year of these findings. Further offsets may include:

- (i) the legal protection and conservation management of additional areas of existing habitat that actively regenerated and secured into conservation management; and/or
- (ii) strategic revegetation of cleared areas to improve connectivity; and/or
- (iii) development of a supplementary feeding program and/or breeding program; and/or
- (iv) development of a long term predator control program; and

(k) evidence of consultation with species experts, **EPA** and DoE in addressing the requirements of this condition, and demonstration of how comments provided by the species experts, **EPA** and DoE, as a result of this consultation, have been addressed.

The Koala Management Plan shall be submitted and approved by the Secretary prior to the commencement of construction of the relevant stages of the SSI. The approved Koala

Management Plan shall be implemented prior to the commencement of construction of the relevant stages.

NOISE AND VIBRATION

Land Use Survey

D10. Prior to the commencement of construction, the Applicant shall undertake a land use survey to identify areas that are sensitive to construction vibration and construction ground-borne noise impacts. The results of the survey shall be incorporated into the Construction Noise and Vibration Management Plan.

Operational Noise Review

D11. The Applicant shall prepare a review of the operational noise mitigation measures proposed to be implemented for the SSI, within six months of commencing construction, unless otherwise agreed by the Secretary. The review shall be prepared in consultation with the EPA, to the satisfaction of the Secretary. The review may be submitted in stages to suit the staged construction of the SSI and shall:

- (a) confirm the operational noise predictions of the SSI based on detailed design. This operational noise assessment shall be based on an appropriately calibrated noise model (which has incorporated additional noise monitoring, where necessary for calibration purposes);
- (b) review the suitability of the operational noise mitigation measures identified in the documents listed in condition A2. The review shall take into account the detailed design of the SSI and, where feasible and reasonable, and where necessary, refine the proposed measures with the objective of meeting the criteria outlined in the *NSW Road Noise Policy* (Department of Environment, Climate Change and Water, 2011), based on the operational noise performance of the SSI predicted under (a) above; and
- (c) where necessary, investigate additional feasible and reasonable noise mitigation measures to achieve the criteria outlined in the *NSW Road Noise Policy* (DECCW, 2011).

SOIL, WATER QUALITY AND HYDROLOGY

Water Quality Monitoring Program

D12. The Applicant shall prepare and implement a **Water Quality Monitoring Program**, to monitor the construction and operation impacts of the SSI on surface and groundwater quality and resources and wetlands, prior to construction. The Program shall be prepared in consultation with the OEH, EPA, DPI (Fisheries), NOW, DoE and Rous Water (in relation to the Woodburn borefields), to the satisfaction of the Secretary, and shall include but not necessarily be limited to:

- (a) identification of surface and groundwater quality monitoring locations (including watercourses, waterbodies and SEPP14 wetlands) which are representative of the potential extent of impacts from the SSI;
- (b) the results of any groundwater modelling undertaken;
- (c) identification of works and activities during construction and operation of the SSI, including emergencies and spill events, that have the potential to impact on surface water quality of potentially affected waterways and known Oxleyan Pygmy Perch habitat;
- (d) development and presentation of parameters and standards against which any changes to water quality will be assessed, having regard to the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000* (Australian and New Zealand Environment Conservation Council, 2000) or relevant baseline data;

- (e) representative background monitoring of surface and groundwater quality parameters for a minimum of twelve months (considering seasonality) prior to the commencement of construction, to establish baseline water conditions, unless otherwise agreed by the Secretary;
- (f) a minimum monitoring period of three years following the completion of construction or until the affected waterways and/or groundwater resources are certified by an independent expert as being rehabilitated to an acceptable condition. The monitoring shall also confirm the establishment of operational water control measures (such as sedimentation basins and vegetation swales);
- (g) contingency and ameliorative measures in the event that adverse impacts to water quality are identified; and
- (h) reporting of the monitoring results to Department of Planning and Environment, OEH, EPA, DPI (Fisheries), NOW, DoE and Rous Water (in relation to the Woodburn borefields).

Hydrological Mitigation Report

D13. The Applicant shall prepare and implement a **Hydrological Mitigation Report** for properties where flooding and/or hydrological impacts are predicted to exceed the relevant flood management objective in the documents listed in condition A2 as a result of the SSI. The Report shall be prepared by a suitably qualified expert and be based on detailed surveys (e.g. floor levels) and associated assessment of potentially flood affected properties in the Corindi, Clarence and Richmond river floodplains. The Report shall:

- (a) identify properties in those areas likely to have an increased/exacerbated impact and detail the predicted impact; The types of impacts to be considered include all those examined in the EIS including but not limited to changes in flood levels and velocities, alteration to drainage, reduction in flood evacuation access or capability, impacts on infrastructure, impacts on stock and agriculture, and impacts to the environment;
- (b) identify mitigation measures to be implemented to address these impacts;
- (c) identify measures to be implemented to minimise scour and dissipate energy at locations where flood velocities are predicted to increase as a result of the SSI and cause localised soil erosion and/or pasture damage;
- (d) be developed in consultation with the relevant council, NSW State Emergency Service and directly-affected landowners;
- (e) identify operational and maintenance responsibilities for items (a) to (c) inclusive; and
- (f) refer to the assessments described in conditions B31 and B32.

The report may be submitted in stages to suit the staged construction of the SSI.

Construction shall not commence within those areas likely to have altered flood conditions until such time as works identified in the hydrological mitigation report have been completed, unless otherwise agreed by the Secretary.

D14. Based on the mitigation measures identified in condition D13, the Applicant shall prepare and implement a final schedule of feasible and reasonable flood mitigation measures proposed at each directly-affected property in consultation with the landowner. The schedule shall be provided to the relevant landowner(s) prior to the implementation/construction of the mitigation works, unless otherwise agreed by the Secretary. A copy of each schedule of flood mitigation measures shall be provided to the Department of Planning and Environment and the relevant council prior to the implementation/construction of the mitigation measures on the property.

D15. The Applicant shall employ a suitably qualified and experienced independent hydrological expert, whose appointment has been endorsed by the Secretary, to deal with all hydrological matters and assist landowners in negotiating feasible and reasonable mitigation measures.

D16. The Applicant shall provide feasible and reasonable assistance to the relevant council and/or NSW State Emergency Service, to prepare any new or necessary update(s) to the relevant plans and documents in relation to flooding, to reflect changes in flooding levels, flows and characteristics as a result of the SSI.

TRANSPORT AND ACCESS

D17. The Applicant shall prepare and implement a **Signage Policy** to addresses the impact of towns (South Grafton, Ulmarra, Tyndale, Woodburn, Broadwater and Wardell) which are bypassed by the SSI, at least six months prior to operation, unless otherwise agreed by the Secretary. The Policy shall be prepared in consultation with the relevant council and to the satisfaction of the Secretary.

The Policy shall be consistent with the *Guide: Signposting* (RTA July 2007), *Tourist Signposting guide* (RMS and Destination NSW 2012) and provide for signage that:

- (a) provides information on the range of services available within the bypassed towns of South Grafton, Ulmarra, Tyndale, Woodburn, Broadwater and Wardell; and
- (b) informs motorists of routes through the bypassed towns that may be taken as an alternative to the highway.

The Policy may be submitted in stages to suit the staged construction of the SSI.

D18. The Applicant shall prepare and implement a **Business Access Strategy** to address changes to access to businesses along the highway, at least six months prior to operation. The Strategy shall be prepared in consultation with the relevant council, business owners and the New Italy Museum and to the satisfaction of the Secretary.

Note

- *The Applicant may incorporate the requirements of this condition into the Signage Policy for the SSI under condition D17.*

Road Dilapidation

D19. Upon determining the haulage route(s) for construction vehicles associated with the SSI, and prior to construction, an independent and qualified expert shall prepare a **Road Dilapidation Report**. The Report shall assess the current condition of the road and describe mechanisms to restore any damage that may result due to its use by traffic and transport related to the construction of the SSI. The Report shall be submitted to the relevant council for review prior to the commencement of haulage.

Following completion of construction, a subsequent Report shall be prepared to assess any damage to the road that may have resulted from the construction of the SSI.

Measures undertaken to restore or reinstate roads affected by the SSI shall be undertaken in a timely manner, in accordance with the reasonable requirements of the relevant council, and at the full expense of the Applicant.

Note:

- *Nothing in this condition restricts the Applicant commencing adjustments and minor upgrades to the existing road network to cater for construction traffic and installation of temporary project signage prior to the commencement of construction.*

URBAN DESIGN AND LANDSCAPING

D20. The Applicant shall prepare and implement an **Urban Design and Landscape Plan** prior to the commencement of permanent built works and/or landscaping, unless otherwise agreed by the Secretary, to present an integrated landscape and design for the SSI. The Plan shall be prepared in accordance with the Roads and Maritime Services urban design and visual guidelines, the design principles outlined in the EIS, and the revegetation principles outlined in the EIS Working Paper—Biodiversity. The Plan shall be prepared by an appropriately qualified expert in consultation with the relevant council and community, to the satisfaction of the Secretary. The Plan shall include, but not necessarily be limited to:

- (a) identification of design principles and standards based on:
 - (i) local environmental values;
 - (ii) heritage values;
 - (iii) urban design context;
 - (iv) sustainable design and maintenance;
 - (v) community amenity and privacy;
 - (vi) relevant design standards and guidelines; and
 - (vii) the urban design objectives outlined in Section 4.2 of the EIS Working Paper—Urban Design Landscape Character and Visual Impact ;
- (b) the location of existing vegetation and proposed landscaping (including use of indigenous and endemic species where possible). Details of species to be replanted/revegetated shall be provided, including their appropriateness to the area and habitat for threatened species;
- (c) a description of locations along the corridor directly or indirectly impacted by the construction of the SSI (e.g. temporary ancillary facilities, access tracks, watercourse crossings, etc.) and details of the strategies to progressively rehabilitate regenerate and/or revegetate the locations with the objective of promoting biodiversity outcomes and visual integration;
- (d) take into account appropriate roadside plantings and landscaping in the vicinity of heritage items and ensure no additional heritage impacts;
- (e) a description of disturbed areas (including borrow sites) and details of the strategies to progressively rehabilitate, regenerate and/or revegetate these areas, including clear objectives and timeframes for rehabilitation works, procedures for monitoring success of regeneration or revegetation, and corrective actions should regeneration or revegetation not conform to the objectives adopted;
- (f) location and design treatments for any associated footpaths and cyclist elements, and other features such as seating, lighting (in accordance with AS 4282-1997 *Control of the Obtrusive Effect of Outdoor Lighting*), fencing, materials and signs;
- (g) an assessment of the visual screening effects of existing vegetation and the proposed landscaping and built elements. Where properties have been identified as likely to experience high visual impact as a result of the SSI and high residual impacts are likely to remain, the Applicant shall, in consultation with affected landowners, identify opportunities for providing at-property landscaping to further screen views of the SSI. Where agreed with the landowner, these measures shall be implemented during the construction of the SSI;
- (h) graphics such as sections, perspective views and sketches for key elements of the SSI, including, but not limited to built elements of the SSI;
- (i) strategies for progressive landscaping and other environmental controls such as erosion and sedimentation controls, drainage and noise mitigation;
- (j) monitoring and maintenance procedures for the built elements, rehabilitated vegetation and landscaping (including weed control). including performance

indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail; and

(k) evidence of consultation with the relevant council and community on the proposed urban design and landscape measures prior to its finalisation.

The Plan may be submitted in stages to suit the staged construction program of the SSI.

ANCILLARY FACILITIES

D21. The Applicant shall prepare and implement an **Ancillary Facilities Management Plan** to detail the management of ancillary facilities associated with the SSI. The Plan shall be prepared in consultation with the EPA, OEH, DPI (Fisheries), DoE, and the relevant council, and to the satisfaction of the Environmental Representative, and shall include, but not necessarily be limited to:

- (a) a description of the ancillary facility (including a site layout plan), its components and details of the existing environment on and in the vicinity of the site;
- (b) details of the activities to be carried out at the facility, including the hours of operation, staging of operation and predicted date of commissioning;
- (c) a description of the plant, equipment and materials to be used and/or stored on the site, including dangerous and hazardous goods;
- (d) details of the light and heavy construction vehicle movements to and from each facility, including site access and route(s) to be used during the establishment and operation of the facility, and an assessment of potential construction traffic impacts on the local road network and access tracks;
- (e) a summary of the potential environmental impacts associated with the construction and operation of the facility;
- (f) demonstrate compliance with the locational and environmental criteria in condition B73(a)—B73(n);
- (g) details of the mitigation, monitoring and management procedures specific to the facility that would be implemented to minimise environmental and amenity impacts or, where this is not possible, feasible and reasonable measures to offset these impacts;
- (h) a description of how the management and mitigation measures set out in the documents listed in condition A2 will be implemented on the site, and if not, justification for such decisions particularly on those sites assessed as having a high risk of flood impacts;
- (i) an assessment of alternative site layouts where either noise management levels are predicted to be exceeded and acoustic treatment of residences is not proposed, or where such treatment is proposed (consequent to the operational impacts of the SSI) but will not be provided prior to establishment of an ancillary facility;
- (j) a cumulative noise impact statement for the ancillary facility addressing the worst-case cumulative noise impacts resulting from the concurrent operation of the site (including construction traffic movements to and from the site), nearby construction works within the SSI corridor and any other nearby construction activities associated with other road upgrade projects;
- (k) identification of the timing for the completion of activities at the facility and how the site will be decommissioned (including any necessary rehabilitation); and
- (l) mechanisms for the monitoring, review and amendment of this plan.

The plan shall be approved by the Environmental Representative prior to the establishment of the ancillary facilities described therein. In considering the approval of the plan, the Environmental Representative shall take into account the Applicant's response to public authority and council comments on the plan.

The Applicant may prepare a separate plan for the facility or include multiple sites within a single or multiple management plans.

BORROW SITES

D22. The Applicant shall prepare and implement a **Borrow Sites Management Plan**, to manage the construction, operation and rehabilitation of the borrow sites used to source construction material for the SSI, prior to the commencement of construction at the borrow sites, or as otherwise agreed by the Secretary. The Plan shall be prepared in consultation with the EPA, OEH and DPI (Fisheries) and to the satisfaction of the Secretary, and shall include, but not necessarily be limited to:

- (a) details of construction/extraction methods and activities carried out at the borrow site;
- (b) management and mitigation measures to be used to minimise surface and groundwater impacts, Aboriginal and non-Aboriginal heritage, air quality, noise and vibration, biodiversity and visual impacts;
- (c) consultation with sensitive receivers; and
- (d) details of the rehabilitation of the borrow site, including future landform and use of the borrow site, landscaping and revegetation, and measures that would be implemented to minimise or manage the ongoing environmental effects of the site.

The Plan shall demonstrate that the construction and operation of the Lang Hill borrow site has no adverse impact on the known Oxleyan Pygmy Perch habitat waterway.

ENVIRONMENTAL REPRESENTATIVE

D23. Prior to the commencement of construction of the SSI, or as otherwise agreed by the Secretary, the Applicant shall nominate for the approval of the Secretary a suitably qualified and experienced Environmental Representative(s) that is independent of the design and construction personnel. The Applicant shall employ the Environmental Representative(s) for the duration of construction, or as otherwise agreed by the Secretary. The Environment Representative(s) shall:

- (a) be the principal point of advice in relation to the environmental performance of the SSI;
- (b) monitor the implementation of environmental management plans and monitoring programs required under this approval and advise the Applicant upon the achievement of these plans/programs;
- (c) have responsibility for considering and advising the Applicant on matters specified in the conditions of this approval, and other licences and approvals related to the environmental performance and impacts of the SSI;
- (d) ensure that environmental auditing is undertaken in accordance with the Applicant's Environmental Management System(s);
- (e) be given the authority to approve/reject minor amendments to the Construction Environment Management Plan. What constitutes a “minor” amendment shall be clearly explained in the Construction Environment Management Plan;
- (f) be given the authority to approve/reject Out of Hours Works in accordance with condition B17. These works shall be conducted in accordance with the Out of Hours Works Protocol (OOHW Protocol) required in accordance with condition D26(vi);
- (g) be given the authority to approve/reject ancillary facilities in accordance with conditions B73 and B74 and the Ancillary Facilities Management Plans under condition D21;
- (h) be given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the

effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur; and

- (i) be consulted in responding to the community concerning the environmental performance of the SSI where the resolution of points of conflict between the Applicant and the community is required

D24. The Environmental Representative shall prepare and submit to the Secretary a monthly report on the Environmental Representative's actions and decision on matters specified in condition D23 for the preceding month. The reports shall be submitted for the duration of construction of the SSI, unless otherwise agreed by the Secretary.

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

D25. The Applicant shall prepare and implement (following approval) a **Construction Environmental Management Plan** for the SSI, prior to the commencement of construction, or as otherwise agreed by the Secretary. The Plan shall be prepared in consultation with the EPA, OEH, DPI (Fisheries), NOW and DoE and outline the environmental management practices and procedures that are to be followed during construction, and shall be prepared in consultation with the relevant government agencies and in accordance with the *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to:

- (a) a description of activities to be undertaken during construction of the SSI (including staging and scheduling);
- (b) statutory and other obligations that the Applicant is required to fulfil during construction, including approvals, consultations and agreements required from authorities and other stakeholders under key legislation and policies;
- (c) a description of the roles and responsibilities for relevant employees involved in the construction of the SSI, including relevant training and induction provisions for ensuring that employees, including contractors and sub-contractors, are aware of their environmental and compliance obligations under these conditions of approval;
- (d) an environmental risk analysis to identify the key environmental performance issues associated with the construction phase and details of how environmental performance would be managed and monitored to meet acceptable outcomes, including what actions will be taken to address identified potential adverse environmental impacts (including any impacts arising from the staging of the construction of the SSI). In particular, the following environmental performance issues shall be addressed in the Plan:
 - (v) measures to monitor and manage **dust emissions** including dust from stockpiles, blasting, traffic on unsealed public roads and materials tracking from construction sites onto public roads;
 - (vi) measures to minimise **hydrology** impacts, including measures to stabilise bed and bank structures as required;
 - (vii) measures for the handling, treatment and management of **contaminated materials**;
 - (viii) measures to monitor and manage **waste** generated during construction including but not necessarily limited to: general procedures for waste classification, handling, reuse, and disposal; use of secondary waste material in construction wherever feasible and reasonable; procedures or dealing with green waste including timber and mulch from clearing activities; and measures for reducing demand on water resources (including potential for reuse of treated water from sediment control basins);

- (ix) measures to monitor and manage spoil, fill and materials stockpile sites including details of how spoil, fill or material would be handled, stockpiled, reused and disposed in a **Stockpile Management Protocol**. The Protocol shall include details of the locational criteria that would guide the placement of temporary stockpiles, and management measures that would be implemented to avoid/minimise amenity impacts to surrounding residents and environmental risks (including surrounding water courses). Stockpile sites that affect heritage, threatened species, populations or endangered ecological communities require the approval of the Secretary, in consultation with the EPA, OEH and DPI (Fisheries);
- (x) measures to monitor and manage **hazard and risks** including emergency management and management measures to address potential risks to the Woodburn borefield drinking water catchment. These measures shall be developed in consultation with Rous Water;
- (xi) the issues identified in condition D26;
- (xii) details of community involvement and complaints handling procedures during construction, consistent with the requirement of conditions C1 to C4;
- (xiii) details of compliance and incident management consistent with the requirements of condition D27; and
- (xiv) procedures for the periodic review and update of the Construction Environmental Management Plan and Plans required under condition D26, as necessary (including where minor changes can be approved by the Environmental Representative).

The Plan shall be submitted for the approval of the Secretary no later than one month prior to the commencement of construction, or as otherwise agreed by the Secretary. The Plan may be prepared in stages, however, construction works shall not commence until written approval of the relevant stage has been received from the Secretary.

The approval of a Construction Environmental Management Plan does not relieve the Applicant of any requirement associated with this SSI approval. If there is an inconsistency with an approved Construction Environmental Management Plan and the conditions of this SSI approval, the requirements of this SSI approval shall prevail.

D26. As part of the Construction Environmental Management Plan for the SSI, the Applicant shall prepare and implement:

- (a) a **Construction Noise and Vibration Management Plan** to detail how construction noise and vibration impacts will be minimised and managed. The Plan shall be developed in consultation with the EPA and shall be consistent with the guidelines contained in the *Interim Construction Noise Guidelines* (DECC, 2009) and shall include, but not necessarily be limited to:
 - (i) identification of sensitive receivers and relevant construction noise and vibration goals applicable to the SSI stipulated in this approval;
 - (ii) details of construction activities and an indicative schedule for construction works; including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios, including at ancillary facilities) that have the potential to generate noise and/or vibration impacts on surrounding sensitive receivers, particularly residential areas;
 - (iii) identification of feasible and reasonable measures proposed to be implemented to minimise and manage construction noise and vibration impacts (including construction traffic noise impacts);
 - (iv) procedures and mitigation measures to ensure relevant vibration and blasting criteria are achieved, including a suitable blast program, applicable buffer distances for vibration intensive works, use of low-vibration

generating equipment/vibration dampeners or alternative construction methodology, and pre- and post-construction dilapidation surveys of sensitive structures where blasting and/or vibration is likely to result in damage to buildings and structures (including surveys being undertaken immediately following a monitored exceedance of the criteria); and

- (v) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, the locations where monitoring would take place, how the results of this monitoring would be recorded and reported, and, if any exceedance is detected, how any non-compliance would be rectified;
- (vi) an out-of-hours work (OOHW) protocol for the assessment, management and approval of works outside of standard construction hours as defined in condition B15, including a risk assessment process under which the Environmental Representative may approve out-of-hour construction activities. The OOHW protocol shall detail standard assessment, mitigation and notification requirements for high and low risk out-of-hour works, consultation procedures with the EPA, the relevant council and affected landowners;
- (i) procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints;
- (vii) a program for construction noise and vibration monitoring clearly indicating monitoring frequency, location, how the results of this monitoring would be recorded and, procedures to be followed where exceedances of relevant noise and vibration goals are detected; and
- (viii) mechanisms for the monitoring, review and amendment of this plan.

(b) a **Construction Traffic and Access Management Plan** to manage construction traffic and access impacts of the SSI. The Plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to:

- (i) identification of construction traffic routes and construction traffic volumes (including heavy vehicle/spoil haulage) on these routes;
- (ii) details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points;
- (iii) identification of construction impacts that could result in disruption of traffic, public transport, pedestrian and cycle access, property access, including details of oversize load movements;
- (iv) details of management measures to minimise traffic impacts, including temporary road work traffic control measures, onsite vehicle queuing and parking areas and management measures to minimise peak time congestion and measures to ensure safe pedestrian and cycle access;
- (v) details of measures to manage traffic movements, parking, loading and unloading at ancillary facilities during out-of-hours work;
- (vi) a response plan which sets out a proposed response to any traffic, construction or other incident; and
- (vii) mechanisms for the monitoring, review and amendment of this plan.

(c) a **Construction Soil and Water Quality Management Plan** to manage surface and groundwater impacts during construction of the SSI. The Plan shall be developed in consultation with the EPA, DPI (Fisheries), NOW, Rous Water (in relation to the Woodburn borefield), DoE and the relevant council and include, but not necessarily be limited to:

- (i) details of construction activities and their locations, which have the potential to impact on water courses, storage facilities, stormwater flows, and groundwater;
- (ii) surface water and ground water impact assessment criteria consistent with Australian and New Zealand Environment Conservation Council (ANZECC) guidelines or relevant site specific baseline data collected for known Oxleyan Pygmy Perch waterways;
- (iii) management measures to be used to minimise surface and groundwater impacts, including details of how spoil and fill material required by the SSI will be sourced, handled, stockpiled, reused and managed; erosion and sediment control measures; salinity control measures and the consideration of flood events;
- (iv) a **Groundwater and Soil Salinity report** should geotechnical investigations determine the presence, extent and severity of soil salinity within the SSI boundary, The report shall detail the outcomes of geotechnical investigations and identify and mitigate impacts to groundwater resources;
- (v) an **Acid Sulfate Soils contingency plan**, consistent with the *Acid Sulfate Soils Manual*, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage;
- (vi) a **tannin leachate management protocol** to manage the stockpiling of mulch and use of cleared vegetation and mulch filters for erosion and sediment control;
- (vii) an **Oxleyan Pygmy Perch habitat waterway management framework** to detail the measures and construction methods that will be employed to avoid direct discharge of construction water to known Oxleyan Pygmy Perch habitat waterways and downstream impacts to suitable habitat;
- (viii) management measures for contaminated material and a contingency plan to be implemented in the case of unanticipated discovery of contaminated material during construction;
- (ix) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be undertaken, the locations where monitoring would take place, how the results of the monitoring would be recorded and reported, and, if any exceedance of the criteria is detected how any non-compliance can be rectified; and mechanisms for the monitoring, review and amendment of this plan.

(d) a **Construction Heritage Management Plan** to detail how construction impacts on Aboriginal and non-Aboriginal heritage will be minimised and managed. The Plan shall be developed in consultation with the **EPA**, the NSW Heritage Council (for non-Aboriginal heritage) and Registered Aboriginal Parties (for Aboriginal heritage), and include, but not necessarily be limited to:

- (i) in relation to Aboriginal Heritage:
 - (A) details of further investigation and identification of Aboriginal cultural heritage sites within the SSI boundary;
 - (B) details of management measures to be carried out in relation to Aboriginal heritage, including a detailed methodology and strategies for protection, monitoring, salvage, and conservation, of sites and items associated with the SSI;
 - (C) procedures for dealing with previously unidentified Aboriginal objects (excluding human remains) including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when

works can re-commence by a suitably qualified archaeologist in consultation with Department of Planning and Environment, **EPA** and Registered Aboriginal Parties and assessment of the consistency of any new Aboriginal heritage impacts against the approved impacts of the SSI, and registering of the new site in the **EPA**'s Aboriginal Heritage Information Management System (AHIMS) register;

(D) procedures for dealing with human remains, including cessation of works in the vicinity and notification of Department of Planning and Environment, NSW Police Force, **EPA** and Registered Aboriginal Parties and not recommencing any works in the area unless authorised by the **EPA** and/or the NSW Police Force;

(E) heritage training and induction processes for construction personnel (including procedures for keeping records of inductions) and obligations under the conditions of this approval including site identification, protection and conservation of Aboriginal cultural heritage; and

(F) procedures for ongoing Aboriginal consultation and involvement for the duration of the SSI; and

(ii) in relation to non-Aboriginal Heritage:

(A) identification of heritage items directly and indirectly affected by the SSI;

(B) details of management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity);

(C) details of monitoring and reporting requirements for impacts on heritage items;

(D) procedures for dealing with previously unidentified heritage objects, (including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified and experienced archaeologist in consultation with the OEH, NSW Heritage Council and Department of Planning and Environment, and assessment of the consistency of any new heritage impacts against the approved impacts of the SSI; and

(E) heritage training and induction processes for construction personnel (including procedures for keeping records of inductions and obligations under this approval including site identification, protection and conservation of non-Aboriginal cultural heritage; and

(iii) mechanisms for the monitoring, review and amendment of this plan.

(e) a **Construction Flora and Fauna Management Plan** to detail how construction impacts on ecology will be minimised and managed. The Plan shall be prepared by a suitably qualified and experienced ecologist and developed in consultation with the **EPA**, DPI (Fisheries) and DoE, and shall include, but not necessarily be limited to:

(i) details of pre-construction surveys undertaken by a suitably qualified and experienced ecologist to verify the SSI footprint based on detailed design;

(ii) plans for impacted and adjoining areas showing vegetation communities; important flora and fauna habitat areas; locations where threatened species, populations or ecological communities have been recorded; including pre-clearing surveys to confirm the location of threatened flora and fauna species and associated habitat features;

(iii) the identification of areas to be cleared and details of management measures (such as fencing, clearing procedures, removal and relocation of

fauna during clearing, habitat tree management and construction worker education) to avoid any residual habitat damage or loss and to minimise or eliminate time lags between the removal and subsequent replacement of habitat;

- (iv) a **protocol for the removal and relocation of fauna during clearing**, including provision for engagement of a suitably qualified and experienced ecologist to identify locations where they would be present; to oversee clearing activities and facilitate fauna rescue and re-location; and consideration of timing of vegetation clearing with consideration to the avoidance of clearing native vegetation during the breeding/nesting periods of threatened species, where feasible and reasonable;
- (v) details of general work practices and mitigation measures to be implemented during construction and operation to minimise impacts on native fauna and native vegetation (particularly threatened species and their habitats and EEC) not proposed to be cleared as part of the SSI, including, but not necessarily limited to: fencing of sensitive areas; measures for maintaining existing habitat features (such as bush rock and tree branches etc); seed harvesting and appropriate topsoil management; construction worker education; weed management (including controls to prevent the introduction or spread of *Phytophthora cinnamomi* and myrtle rust (*Puccinia psidii* s.l.); erosion and sediment control, including measures to at least maintain habitat values downstream; and progressive re-vegetation;
- (vi) rehabilitation details, including identification of flora species and sources, and measures for the management and maintenance of rehabilitated areas;
- (vii) weed management measures focusing on early identification, suppression and control of invasive weeds and effective management controls;
- (viii) a protocol for managing aquatic and terrestrial pest animal/invasive species and plant species, and pathogens;
- (ix) consideration of the Threatened Species Management Plans;
- (x) a description of how the effectiveness of these management measures would be monitored and linked to the monitoring undertaken as part of the Threatened Species Management Plans;
- (xi) a procedure for dealing with unexpected EEC/threatened species identified during construction, including cessation of work and notification of the **EPA**, DPI (Fisheries) and DoE, determination of appropriate mitigation measures in consultation with these agencies (including relevant re-location measures) and updating of ecological monitoring and/or biodiversity offset requirements; and
- (xii) mechanisms for the monitoring, review and amendment of this plan.

COMPLIANCE MONITORING AND TRACKING

D27. The Applicant shall prepare and implement a **Compliance Tracking Program**, to track compliance with the requirements of this approval, prior to the commencement of construction and operate from the date of its approval to a minimum of one year following commencement of operation, or as otherwise agreed by the Secretary. The Program shall be prepared for the approval of the Secretary, and include, but not necessarily be limited to:

- (a) provisions for the notification of the Secretary prior to the commencement of construction and prior to the commencement of operation of the SSI (including prior to each stage, where works are being staged);
- (b) provisions for periodic review of the compliance status of the SSI against the requirements of this approval;

- (c) provisions for periodic reporting of compliance status to the Secretary, including a Pre-Construction Compliance Report, prior to the commencement of construction, and a Pre-Operation Compliance Report prior to the commencement of operation. These reports may be staged to suit the staged construction/operation of the SSI;
- (d) a program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/or Environmental Management Systems Auditing;
- (e) mechanisms for recording environmental incidents during construction and actions taken in response to those incidents;
- (f) provisions for reporting environmental incidents to the Secretary and relevant public authorities during construction;
- (g) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management; and
- (h) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.

OPERATIONAL NOISE AND VIBRATION

Operational Noise Compliance

D28. The Applicant shall undertake operational noise monitoring, to compare actual noise performance of the SSI against noise performance predicted in the review of noise mitigation measures required by condition D11, within 12 months of the commencement of operation of the SSI, or as otherwise agreed by the Secretary.

The Applicant shall subsequently prepare an **Operational Noise Compliance Report** to document this monitoring. The Report shall include, but not necessarily be limited to:

- (a) noise monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under condition D11 and documents listed in condition A2;
- (b) a review of the operational noise levels in terms of criteria and noise goals established in the *NSW Road Noise Policy 2011*;
- (c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which SSI noise levels are ascertained, with specific reference to locations indicative of impacts on sensitive receivers;
- (d) details of any complaints and enquiries received in relation to operational noise generated by the SSI between the date of commencement of operation and the date the report was prepared;
- (e) any required recalibrations of the noise model taking into consideration factors such as noise monitoring and actual traffic numbers and proportions;
- (f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of feasible and reasonable mitigation measures; and
- (g) identification of additional feasible and reasonable measures to those identified in the review of noise mitigation measures required by condition D11, that would be implemented with the objective of meeting the criteria outlined in the *NSW Road Noise Policy 2011*, when these measures would be implemented and how their effectiveness would be measured and reported to the Secretary and the EPA.

The Applicant shall provide the Secretary and the EPA with a copy of the Operational Noise Report within 60 days of completing the operational noise monitoring referred to in (a) above or as otherwise agreed by the Secretary.

Note:

- *The audit may be staged to suit the staged operation of the SSI.*

ENVIRONMENTAL MANAGEMENT SYSTEMS

D29. Prior to the commencement of operation, the Applicant shall incorporate the SSI into existing environmental management systems administered by the Applicant and prepared in accordance with the AS/NZS ISO 14000 Environmental Management System series.

If there is an inconsistency between the existing environmental management systems and the conditions of this SSI approval, the requirements of this SSI approval shall prevail.

INDEPENDENT ENVIRONMENTAL AUDIT

D30. Within 12 months of the commencement of operation, and then as required by the Secretary, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the SSI. This audit shall:

- be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
- include consultation with the relevant agencies;
- assess the environmental performance of the SSI and assess whether it is complying with the requirements in this approval, and any other relevant approvals (including any assessment, plan or program required under these approvals);
- review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and
- recommend measures or actions to improve the environmental performance of the SSI, and/or any strategy, plan or program required under these approvals.

Note:

- *This audit team shall be led by a suitably qualified auditor, and include experts in biodiversity, noise and vibration, hydrology and any other fields specified by the Secretary.*
- *The audit may be staged to suit the staged operation of the SSI.*

D31. Within 60 days of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary and relevant public authorities, together with its response to any recommendations contained in the audit report.