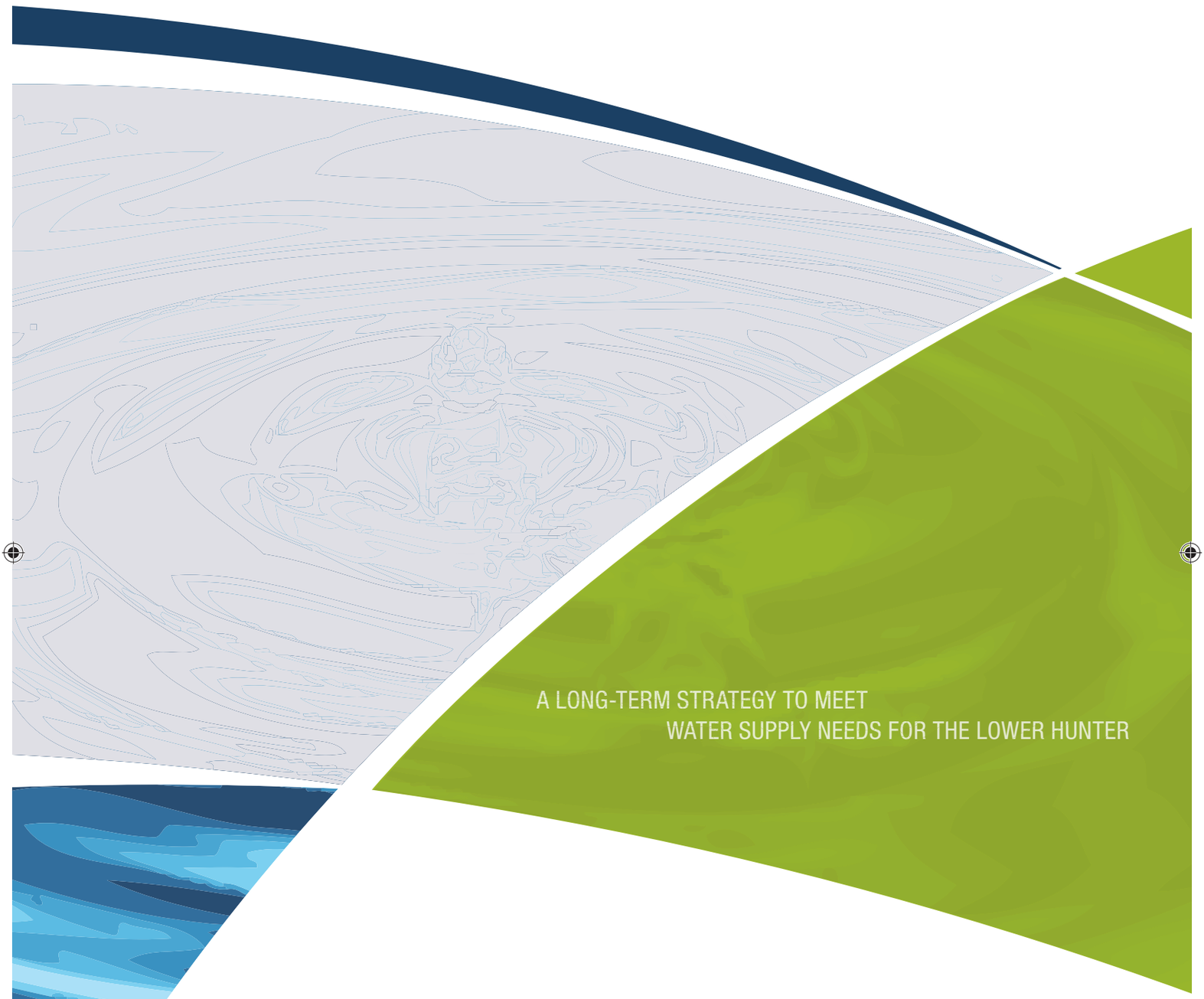
TILLEGRA DAM PROJECT

Securing Our Water Future



A LONG-TERM STRATEGY TO MEET
WATER SUPPLY NEEDS FOR THE LOWER HUNTER

Tillegra Dam Planning and Environmental Assessment

VOLUME 2 APPENDICES

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Appendix 1

Draft Statement of Commitments

MANAGEMENT ASPECT	COMMITMENT	
1. *General Environmental Management*	1.1	Prepare and implement a construction EMP to guide Project delivery
	1.2	Obtain all necessary approvals, licences and permits for construction and/or operation as appropriate
	1.3	Require construction contractor to undertaken periodic reviews/audits of environmental management performance and demonstrate implementation of 'continuous improvement' management approach
	1.4	Undertake periodic reviews of effectiveness of operational environmental management activities to assess performance and undertake appropriate action to address identified performance shortfalls
	1.5	Environmental auditing by an independent and appropriately qualified and experienced environmental management specialist would be undertaken to make sure contracted work is performed to a high standard
2. *Communication and Consultation*	2.1	Consultation with the affected community would occur within the framework of a formal consultation strategy for the Project.
	2.2	Newsletters and media coverage would be used regularly to provide advice on the proposed works schedule, areas in which works are proposed and construction hours. Newsletters and media coverage would provide suitable contact details.
	2.3	A Project web site would be established and maintained during construction to provide periodic updates of work progress, consultation activities and proposed work schedules. The site would identify relevant approval authorities and their areas of responsibility, and contact names and phone numbers of relevant staff
	2.4	A 24 hour toll-free complaints contact telephone number would be established for the Project. A system to receive, record, track and respond to complaints within a specified timeframe would also be established.
	2.5	Property owners would be consulted about the implementation of mitigation measures that affect their property and any issues raised would be considered where reasonable and feasible
	2.6	HWC would identify critical low–lying river crossings, notify property owners prior to significant releases and provide information on its website of the schedule of run-of-river transfers.

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3. River Management – General	3.1	Adopt the proposed operational release strategy for the dam to ensure water availability downstream and to manage potential effects of releases on downstream water quality
4. Water Quality	4.1	Dam design to include a multi-level offtake tower to allow the appropriate management of releases
	4.2	Implement an integrated land use plan to manage activities around and within the storage to promote sensible land use and to manage potential water quality risks
	4.3	A water quality and hydrology monitoring program would be instigated to monitor the effects the construction and operation of the dam on water quality and to provide information on the appropriate water release depths from the storage. Specific components may include: ▪ a water quality monitoring program to provide information on vertical variability in temperature, dissolved oxygen and algal blooms to assist with selection of an appropriate withdrawal depth at the offtake structure. This would be particularly important during the initial two years of filling when in-storage water quality variability is likely to be high ▪ a monitoring program immediately downstream of Seaham Weir should be instigated to provide a better understanding of the downstream ecosystem and determine any changes from upgrades performed on the weir. Monitoring would consist of collection of DO, temperature, salinity and other water quality parameters at various locations within the estuarine component of the Williams River.
	4.4	Develop erosion and sediment control plan for construction activities in accordance with relevant matters in 'The Blue Book'
	4.5	Implement and maintain erosion and sediment control plan for the duration of construction
	4.6	Undertake regular reviews of the erosion and sediment control plan and revise as required (plan and control measures)
	4.7	Develop and implement appropriate measures for the effective management of hazardous materials required during construction.
	4.8	Establish and maintain vegetated buffer zone (nominal 50m width) around storage perimeter

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	4.9 The following measures would be provided to minimise the risk of recreational activities to water quality: ▪ provide appropriate and adequate infrastructure at recreational facilities (eg toilet facilities, waste receptacles, etc) to accommodate anticipated level of use ▪ implement an appropriate management regime for recreational areas to facilitate early detection of potential issues which could impact on water quality.
	4.10 Should releases need to be held in abeyance for a few months until water quality improves, this matter will be managed by; ▪ Tankered supply of water being provided to stock and domestic users ▪ Increased releases being made from Chichester Dam to compensate for any flow reduction in the river from the Upper Williams River sub-catchment, thereby limiting any impacts to approximately 4 kilometres of river directly below the dam, to the Chichester confluence ▪ Provision of stock feed/fodder to any party immediately below the dam, and the confluence of the Chichester River, who would have otherwise have provided feed or produced hay/fodder through irrigation ▪ Direct financial compensation being paid to any farmer immediately below the dam and above the confluence of the Chichester River where it can be demonstrated that a reduction in water has caused the loss of an irrigated crop or otherwise caused a financial loss through reduced agricultural production as a direct result of HWC not releasing water from the dam in accordance with the proposed environmental and operational flow regime.
5. Aquatic Ecology	5.1 An aquatic ecosystem offset package would be provided. The package would be developed in consultation with DPI Fisheries and would include the following; ▪ Remediation of fish passage at four high priority barriers in the Hunter Catchment. Subject to final confirmation from DPI (Fisheries) this will include a fishway at Seaham Weir, Liddell Gauging Station (Hunter River at Jerries Plains) Dora Creek Weir and Barnsley Creek Weir. Alternative sites are listed in the NSW Weir Review for the Hunter and could include such sites as Cross Keys Road, Paterson River. ▪ The re-introduction of at least 10 kilometres worth of large woody debris into the Williams River to provide for enhanced geomorphic and habitat diversity within the Williams River. ▪ The sponsorship of a comprehensive monitoring and research program including components such as habitat mapping, fish surveys, movement patterns and habitat utilisation monitoring, PIT tagging and LWD monitoring. ▪ A five year community small grants scheme of $100,000 per year for the rehabilitation and management of

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	wetlands, riparian zones and instream aquatic habitat within public lands (total cost $792,000)..
	5.2 Carry out native fish stocking for recreational angling purposes
	5.3 Establish an applied research program below Seaham Weir to better understand the environmental affects of the weir so as to better inform the development of sustainable management arrangements for the weir that will be incorporated into the Water Sharing Plan in 2013
	5.4 Develop and implement appropriate measures for the effective management of hazardous materials required during construction.
	5.5 A monitoring program would be implemented to examine potential effects of the dam on aquatic biota and to demonstrate the efficacy of mitigation measures designed to reduce dam impacts. Specific ecosystem components to be measured include aquatic habitat, fish passage and aquatic faunal assemblages.
6. Terrestrial Ecology	6.1 A terrestrial ecosystem offset package would be provided. This would include: ▪ establishment of a habitat corridor generally along the eastern side of the storage, and a vegetated buffer area with a nominal width of 50 metres around the storage perimeter, these collectively having an approximate area of 1,680 ha (of which approximately 470 ha is already vegetated) ▪ establishment of native vegetation on approximately 550 hectares of the available land as soon as practical after construction. This would be achieved through several techniques including the planting of tubestock, direct seeding and by encouraging natural regeneration from existing seed banks. While direct planting and seeding would be required within this core area, where ever possible it is intended to allow natural regeneration of vegetation to take place as this is more cost effective and ensures a wide diversity of endemic plants have the opportunity to become established. ▪ monitoring of offset areas to ensure that planting works are appropriately completed, that emerging management issues (weeds, pests, illegal dumping etc), are controlled and that vegetation is properly established ▪ additional habitat replacement for riparian vegetation on a one to one basis to ensure a like-for-like replacement and no net loss. A program sponsoring tree planting on private land in riparian areas would be developed in this regard. ▪ exclusion of general agricultural and grazing practices from the offset areas to maintain or enhance their biodiversity values ▪ sponsorship of a program to encourage tree planting on private land in riparian areas along the Williams River with the cooperation of landholders.

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	6.2 Management of offset areas would include weed and feral pest control, fencing, provision of fire breaks and designated access points.
	6.3 Up to 1.5 million trees would be established as part of the carbon offset (and which would also materially contribute to improvement of terrestrial/riparian habitats)
	6.4 Initiatives would be adopted to improve conservation outcomes for State-listed threatened species such as the provision of artificial roosting habitat for micro-bats under new bridges established for the Project, the installation of nest boxes, and recovery of hollow logs for temporary use of other hollow-dependant fauna
	6.5 Prior to any clearing, surveys of hollow–bearing trees would be undertaken in the vicinity of the travelling stock reserve. Trees would be clearly marked and a staged clearing regime implemented. Where practicable, smaller trees and the shrub layer would be removed first to prolong connectivity with adjacent habitat.
	6.6 As far as practicable tree removal would be timed to avoid the peak bird and bat breeding season (September to January inclusive)
	6.7 Prior to the start of vegetation clearing, nest boxes suitable for use by known hollow-dependant threatened species (brush–tailed phascogale, squirrel glider and insectivorous bats) would be erected in retained remnants above FSL, concentrating on areas where hollow bearing trees are absent or scarce
	6.8 Selective relocation of felled trees containing hollows which could serve as habitat for various fauna species would be undertaken to complement the erection of nest boxes.
	6.9 An experienced and suitably equipped wildlife handler would be engaged to assist in management of displaced wildlife during initial works undertaken to prepare the dam construction site for major work
	6.10 A bat management plan would be implemented to mitigate and manage impacts on bats occurring in the Project area and which would be affected by the Project.
	6.11 The construction EMP would include a specific weed management plan.
	6.12 The construction EMP would include suitable management protocols to address the risk of spread of *Phytophthora cinnamomi*
	6.13 Management protocols consistent with DECC guidelines would be incorporated into the construction EMP to minimise the risk of introduction or spread of chytrid fungus

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	6.14 The use of barbed wire fencing would be avoided or otherwise minimised where ever possible in view of the known risk to fauna (particularly gliders and flying–foxes) of becoming entangled
7. Socioeconomic Issues	7.1 HWC would sponsor a land use review for Dungog Shire Council to ensure that its statutory planning documents are appropriately revised to account for the dam's presence within the Dungog LGA
	7.2 HWC would, in conjunction with the NSW Department of State and Regional Development, sponsor a project officer to assist Dungog Shire Council to adjust and take advantage of any social or economic opportunities arising from the dam for the local community
	7.3 All affected public infrastructure would be replaced
	7.4 Recreational access to the storage for swimming, fishing and boating would be permitted except where such access would conflict with acceptable safety standards and operational requirements (generally most localities except in the vicinity of the offtake tower and dam wall)
	7.5 Visitors facilities would be established below and around the dam with low impact walking trails, lookouts, picnic areas, a boat ramp, a designated area for camping, toilets and various rest areas
	7.6 HWC would sponsor a social worker to provide personal support to landholders within and around the Project area, if called upon for assistance
	7.7 Access would be maintained to all private properties during construction.
	7.8 In the event that construction activities would affect a permanent access, alternative access would be provided in consultation with the affected property owner or resident. As far as practicable, alternative access would be of a standard equivalent to the permanent access. At the end of construction, the permanent access would be reinstated should this be the preference of the property owner, subject to the final layout of completed works
	7.9 HWC would consult with affected families with respect to managing the impact of the Project on Quart Pot/Munni cemetery. If it was the general wish of affected families that a new working cemetery be established in the area, HWC would fund the establishment of that cemetery. HWC would also create a memorial overlooking the existing cemetery site.
8. Contemporary and Aboriginal Heritage	8.1 Archival recording would be undertaken of cultural heritage items within the directly impacted Project area
	8.2 Munni House salvaging would be accompanied by:

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	▪ Full archival recording would be undertaken prior to any works on the property. ▪ Detailed documentation of all building elements to be relocated would be undertaken to assist the reconstruction process ▪ The dismantling, storage and reconstruction of Munni House and timber slab buildings would be directed by a suitably qualified consultant with experience or skills necessary for the successful reconstruction and conservation of heritage buildings. ▪ The new location of Munni House would, as far as practicable, be similar to the current position and aspect. ▪ The re-use of Munni House and outbuildings as an interpretive or visitor's centre for the new dam would be considered. Note only core / high value parts of the Munni house complex will be salvaged (refer chapter 13) ▪ A summary report on the dismantling, relocation and reconstruction process, including an amendment to the Section 170 listing information, would be submitted to the Heritage Branch of the Department of Planning and Dungog Shire Council within three months of the completion of all works.
	8.3 Activities regarding the relocation of Quart Pot/Munni cemetery: ▪ An archival record of the Quart Pot/Munni Cemetery would be undertaken for relevant grave sites prior to any works occurring on the site. ▪ The cemetery has significant heritage value and its relocation would address the matters identified in Section 4 of the cemetery relocation plan. ▪ The location of potential unmarked burials at the cemetery would be investigated through suitable non-intrusive means (eg geophysical survey). ▪ Other burials in the Project area would be managed in accordance with the cemetery relocation plan. Where their location could be determined and with agreement from the next of kin, these burials would be relocated to the new cemetery. Plaques for these relocated burials would be provided in the new cemetery. ▪ Community consultation about the relocation would continue in accordance with the process outlined in the cemetery relocation plan. ▪ A summary report on the relocation process, including an amendment to the Dungog LEP heritage schedule listing, would be submitted to the Heritage Branch of the Department of Planning and Dungog Shire Council within three months of the completion of all works. ▪ A memorial for the site of the original cemetery would be erected. ▪ Interpretive information about the establishment of the new cemetery and the Quart Pot/Munni Cemetery would be provided at the new cemetery.

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	8.4 Conservation activities for non-heritage listed items: Archival recordings would be prepared for the following items: ▪ excavated site of the former Munni Public School (Item ID 8) ▪ Mann's hut and stockyard (Item ID 11), if on-ground evidence of the potential site can be found to reveal its location site of former suspension bridge (Item ID 22) Brownmore homestead complex (Item ID 24) ▪ old hut (Item ID 48) ▪ house (Item ID 74). Photographic recordings would be prepared for the following items: ▪ water hole (Item ID 45) ▪ former travelling stock crossing (Item ID 53) ▪ survey marker (Item ID 75). Salvage, retention and incorporation into a display at relocated Munni House or the Dungog Museum would be undertaken for the mailbox (Item ID 26) and the survey marker (Item ID 75) Partial salvage retention and incorporation into a display at relocated Munni House or the Dungog Museum would be undertaken for the former suspension bridge (Item ID 22) The following sites would be managed in accordance with the Cemetery Relocation Plan: ▪ former grave site (Item ID 25) ▪ site of possible burial ground (Summerhill) (Item ID 72) As insufficient evidence is available to locate the Forster baby Burial (Item ID 10), information about this site would be gathered and recorded during the oral history interview process Burials and graves in the Project area outside of Quart Pot/Munni Cemetery would be commemorated at the new cemetery Archaeological assessments, research designs and excavations would be undertaken, as appropriate, to sample the possible historic archaeological resource from the following sites: ▪ site of former Munni Public School (Item ID 8) ▪ former house/homestead sites (item IDs 1213, 23, 46) Artefacts identified during excavation would be salvaged and considered for incorporation into a display at the

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		relocated Munni House or Dungog Museum. Community participation in the excavation of the former Munni Public School site would provide a valuable opportunity to further engage with the community about the history of the local area and would be encouraged Assuming the project is approved and HWC obtains title to the property, Item ID 6 (house) would be assessed to determine if it has historic significance to the local community.
	8.5	Stop work procedures would be incorporated into the construction EMP to address encountering previously undetected skeletal remains during excavations
	8.6	An interpretation strategy would be developed in consultation with the Dungog Historical Society
	8.7	Oral history interviews with local residents would be undertaken and would be guided by the historic themes of the study area. This would inlcude recording of oral history and information about culturally significant places.
	8.8	Time-lapse photography would be used to capture construction of the dam for inclusion in interpretive material at a visitor's or interpretive centre or at the Dungog Museum
	8.9	Further consultation about past Aboriginal cultural activity in the Project area would be undertaken.
	8.10	A display of the artefacts recovered would be created together with the information compiled during the environmental assessment for the Project. The Aboriginal community and the DECC would be consulted in relation to a suitable venue for the artefacts and information. If required, an application would be made to the DECC for a 'Care and Control' permit (or equivalent) for any artefacts proposed to be retained in the community
	8.11	A suitably qualified and experienced archaeologist would be engaged to formulate a research design for archaeological salvage of a sample of archaeological sites preserved within the Project area prior to construction. This would include appropriate consideration of relevant recommendations in the Aboriginal archaeological heritage report. Representatives of the Aboriginal community would be consulted for input into the salvage research design.
	8.12	A copy of the Aboriginal heritage assessment report would be provided to the registered Aboriginal community groups, the Dungog Historical Society, the Dungog library, the DECC and the DECC AHIMS registrar
	8.13	The Construction EMP would provide for awareness training for construction personnel with regard to the possibility of encountering Aboriginal heritage material, together with legal obligations in relation to such material
	8.14	Any further consultation with the Aboriginal community would continue to be undertaken in accordance with the DECC's draft consultation guidelines

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9. Landscape and Visual Amenity	9.1	Buildings such as the caretaker cottages, office and interpretive centre would be designed to be sympathetic to the rural setting and, as far as practicable, to complement the style of existing buildings within the Project area.
	9.2	As far as practicable, elements related to the dam and spillway would be designed to minimise their profile in the landscape. This would include provision of suitable external treatments such as choice of materials, colour, etc.
	9.3	Visual impacts associated with the CTGM water transfer pipeline would be largely mitigated through burying the pipeline. Disturbed areas would be rehabilitated, such as by seeding, following completion of construction. The re-establishment of a vegetation cover would be monitored and remedial measures (eg spot seeding) taken where necessary.
	9.4	Screening planting to mitigate visual impacts at the residences would be progressed through consultation with individual property owners.
	9.5	Screening planting would be undertaken at the new RFS station location. The nature and extent of this would be developed in consultation with the RFS.
	9.6	Native species would be used for screen plantings and would, as far as practicable, be endemic to the region.
	9.7	Design development would consider provision of designated areas where visitors could safely park and view the landscape.
10. Noise and Vibration	10.1	Appropriate construction and operational mitigation measures, as detailed in the EA Report, would be implemented to manage noise and vibration
11. Air Quality	11.1	An air quality management plan would form part of the overall construction EMP.
	11.2	During construction, monitoring would be undertaken at appropriately representative locations to assist in maintaining air emissions within regulatory limits, particularly for adjacent receptors. Monitoring activities would be undertaken within the framework of the air quality management plan.
12. Traffic	12.1	Investment would be made in road safety and maintenance activities as the use of local roads by construction traffic and construction workers increases
	12.2	All movements of construction vehicles on public roads would proceed in accordance with a formal traffic management plan which would be prepared prior to the start of construction activities. This would form part of the construction EMP.

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	12.3 Deliveries of oversized plant/materials would occur under escort in accordance with all necessary road regulations
	12.4 Haulage of materials between areas of cut and fill would take place along the proposed road corridor or on defined haul roads
	12.5 Appropriate traffic management measures would be implemented to minimise any traffic related impacts from crossovers or access points to construction activity areas from public roads
	12.6 Access would be maintained to all private properties during construction. In the event that construction activities would affect a permanent access, alternative access would be provided in consultation with the affected property owner or resident. As far as practicable, this would be of a standard equivalent to the permanent access.
13. Resource Consumption	13.1 Opportunities for the reuse of grey water would be investigated as part of pre-construction planning to assist in reducing demand on the Williams River.
	13.2 Water collected in erosion and sediment controls such as retention basins would be used for dust suppression and landscaping to reduce demand on the Williams River.
	13.3 The waste management approach for the Tillegra Dam project would implement the reduce/reuse/recycle waste hierarchy in accordance with the *Waste Avoidance and Resource Recovery Act 2001*
	13.4 Waste would be classified in accordance with the NSW *Waste Classification Guidelines* (Dept of Environment and Climate Change 2008) to manage the risks to the environment and human health. Should any waste be classified as special, liquid, hazardous, or restricted solid, appropriate treatment and disposal methods would be used.
	13.5 If waste material is classified as dangerous or hazardous the movement of such waste would be conducted in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition).
	13.6 The recovery of resources within the inundation area would be undertaken in accordance with the resource recovery strategy developed for the Project
14. Contaminated Land	14.1 A final site-specific inspection of each property within the inundation area would be undertaken to ensure that any hazardous materials are removed from the inundation area as properties are progressively vacated. Full inspections would only occur after properties are vacated to ensure that all existing materials (such as agricultural chemicals) have been properly disposed of and so new materials cannot be introduced. Septic tanks and infiltration systems would also be decommissioned with the contents disposed of at this time.

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	14.2 Should the presence of a contaminating material be confirmed during a final inspection, the need would be assessed for additional investigations to delineate the extent of the contamination
	14.3 Should potentially asbestos–containing materials be encountered during investigation and/or construction, the management and/or removal of asbestos materials would be undertaken in accordance with the NSW *Occupational Health and Safety Regulation 2001*
	14.4 All excavated material from locations identified as containing contaminated material would be appropriately sampled, classified and stockpiled prior to off site disposal to a licensed facility, beneficial reuse on site or treatment in accordance with the relevant NSW guidelines
15. Climate Change and Greenhouse Gas Emissions	15.1 The design of the dam would provide for the installation of a mini hydroelectric power station
	15.2 Up to 1.5 million trees would be established as part of the carbon offset
	15.3 A carbon neutral strategy for the Project would be implemented addressing the opportunities identified in Table 19.2 of the EA Report