

Appendices

Appendix A Photographs of typical levee types

Source: NSW Public Works (2011)



Embankment levee



Sheet pile wall levee



Cantilever wall levee



Hybrid crib-wall embankment levee

Appendix B Proposed works along levees

Source: NSW Public Works (2011)

DFL – design flood level

DCL – design crest level

Chainage	Levee works	Road works
MAIN CITY LEVEE		
0-1140	No levee raising	
1140-1320	Embankment upgrade	
1320-1360		Flowerdale Road crossing above DFL – no work
1360-1720	Embankment upgrade	
1720-1740		Local crossing below DFL – raise 0.14 metres by gravel topping to levee crest and ramps
1740-2050	Embankment upgrade	
2050-2160		Olympic Highway (Moorong Street) crossing above DFL – no work
2160-2400	Embankment upgrade	
2400-2420		Local crossing below DFL – raise 0.4 metres by gravel topping to levee crest and ramps
2420-2550	Embankment upgrade	
2550-2760	Hybrid – embankment/sheet pile upgrade	
2760-2970	No levee raising	
2970-3130	Embankment upgrade	
3130-3150		Billagha Street closed and construct full height levee
3150-4000	Embankment upgrade	
4000-4030		Narrung Street crossing - retain existing sealed road crossing at 90 cm below DCL
4030-4220	Hybrid – embankment/sheet pile upgrade	

Chainage	Levee works	Road works
4220-4260		Travers Street crossing above DFL – no work
4260-4380	Embankment upgrade	
4380-4400		Access ramp – no work
4400-4460	Sheet pile upgrade	
4460-4860	Concrete cantilever retaining wall upgrade	
4860-4930	Hybrid – embankment/sheet pile upgrade	
4930-4990	Hybrid – embankment/box culvert upgrade	
4990-5070	Hybrid – embankment/sheet pile upgrade	
5070-5242	Hybrid – embankment/concrete wall upgrade	
5242-5267		Johnston Street crossing – flood gate, 25m wide x 1.87m high, to DCL
5267-5405	Concrete cantilever retaining wall upgrade	
5405-5600	No levee raising	
5600-5800	New embankment levee	
5800-6060	Hybrid – embankment/sheet pile/crib-wall upgrade	
6060-6120	Sheet pile upgrade	
6120-6360	Hybrid – embankment/sheet pile/crib-wall upgrade	
6340-6360		Local crossing – new ramp over levee, to DCL
6360-6560	Hybrid – embankment/sheet pile/crib-wall upgrade	
6560-6900	Hybrid – embankment/sheet pile upgrade	
6900-6905		Great Southern Railway crossing – sheet pile wall under rail bridge, concrete cap to DFL
6905-7260	Hybrid – embankment/sheet pile upgrade	
7260-7350	New embankment levee	
7350-7668	Hybrid – embankment/sheet pile upgrade	

Chainage	Levee works	Road works
7668-7688		Sturt Highway (Hammond Avenue) flood gate, 20 m wide by 2.4 m high, to DCL
7688-8180	Hybrid – embankment/sheet pile upgrade	
8180-8381	Embankment upgrade	
8381-8411		Copland Street crossing flood gate, 30 m wide by 2.18 m high, to DCL
8411-8900	Embankment upgrade	
8900-9000	New embankment levee	
9000-9010		Cemetery entrance – low return embankment beside entry roadway
9010-9111	New embankment levee	
NORTH WAGGA WAGGA LEVEE		
8-979	Embankment upgrade	
979-994		Marah Street crossing below DFL – raise existing sealed road crossing by 40 cm to then be 50 cm below DCL
994-1210	Embankment upgrade	
1210-1230		Mill Street crossing – flood gate, 15 m wide by 1.17 m high, to DCL
1230-1670	Embankment upgrade	
1670-1690		Hampden Avenue – retain existing sealed road crossing at 29 cm below DCL
1690-2290	Embankment upgrade	
2290-2300		Local crossing – new ramp over levee, to DCL
2300-2800	Embankment upgrade	
2800-2820		Brotherwood Street - retain existing sealed road crossing at 73 cm below DCL

Chainage	Levee works	Road works
2820-3050	Embankment upgrade	
3050-3070		Gardiner Street – retain existing sealed road crossing at 75 cm below DCL
3070-3080	Embankment upgrade	
3080-3150	No levee raising	
3150-4270	Embankment upgrade	
4276-8		Hampden Avenue crossing below DFL - flood gate 15m wide by 1.80m high
EAST STREET (BANK TWO) LEVEE		
5-220	Embankment upgrade	
220	Gabion wall upgrade	
220-250	Embankment upgrade	
250-280		Mill Street (east) crossing – raise existing sealed road intersection by between 17 cm and 78 cm to then be 50 cm below DCL
280-735	Embankment upgrade	
735-750		East Street crossing – flood gate, 15 m wide by 1.5 m high, to DCL
750-860	New embankment levee	
860-1370	Embankment upgrade	
1370-5		Mill Street (west) crossing - retain existing sealed road crossing at 67 cm below DCL

Appendix C Proposed increases in levee height

AHD – Australian Height Datum

Main City Levee				
Location	Chainage	Natural ground level (AHD)	Design crest level (AHD)	Increased height (m)
Sturt Hwy	0.00	180.95	179.70	
	100.00	180.84	179.77	
	200.00	180.20	179.84	
	300.00	180.08	179.90	
	400.00	180.13	179.92	
	500.00	180.23	179.94	
	600.00	180.23	179.96	
	700.00	180.56	179.98	
	800.00	180.18	180.01	
	900.00	180.08	180.05	
	1000.00	180.11	180.09	
	1100.00	180.02	180.12	0.10
Flowerdale Rd	1200.00	179.81	180.16	0.35
	1300.00	180.22	180.20	
	1400.00	180.08	180.23	0.15
	1500.00	180.14	180.27	0.13
	1600.00	180.11	180.31	0.20
	1700.00	180.04	180.37	0.33
	1800.00	180.32	180.42	0.10
	1900.00	180.59	180.48	
Colin Knott Drive	2000.00	180.72	180.65	
	2100.00	182.78	180.90	
	2200.00	180.89	180.94	0.05
	2300.00	180.85	180.97	0.12
	2400.00	180.70	181.01	0.31
	2500.00	180.97	181.05	0.08
	2600.00	180.81	181.09	0.28
	2700.00	180.83	181.11	0.28
	2800.00	181.16	181.13	
	2900.00	181.14	181.14	0.00
Billagha Street	3000.00	180.81	181.16	0.35
	3100.00	180.79	181.18	0.39
Golf Course	3200.00	180.69	181.19	0.50
	3300.00	180.50	181.43	0.93
Incarnie Crescent	3400.00	181.41	181.80	0.39
	3500.00	181.37	182.10	0.73
	3600.00	181.14	182.10	0.96

Main City Levee				
Location	Chainage	Natural ground level (AHD)	Design crest level (AHD)	Increased height (m)
	3700.00	181.33	182.10	0.77
	3800.00	180.87	182.10	1.23
	3900.00	180.76	182.16	1.40
Fitzmaurice Street	4000.00	181.33	182.10	0.77
	4100.00	181.22	182.34	1.12
Wiradjuri Bridge	4200.00	181.33	182.34	1.01
	4300.00	181.59	182.45	0.86
Hampden Bridge	4400.00	182.07	182.50	0.43
	4500.00	181.57	182.52	0.95
	4600.00	181.58	182.54	0.96
Kincaid Street	4700.00	181.34	182.56	1.22
	4800.00	181.25	182.58	1.33
	4900.00	181.76	182.60	0.84
Sturt Street	5000.00	181.90	182.62	0.72
	5100.00	181.68	182.64	0.96
	5200.00	181.95	182.66	0.71
Johnson Street	5300.00	182.04	182.67	0.63
	5400.00	181.99	182.70	0.71
Cross Street	5500.00	182.82	182.71	
	5600.00	182.12	182.72	0.60
	5700.00	180.20	182.74	-
Morrow Street	5800.00	181.15	182.75	1.60
	5900.00	182.04	182.76	0.72
	6000.00	181.99	182.78	0.79
Tompson Street	6100.00	182.07	182.79	0.72
	6200.00	181.97	182.80	0.83
	6300.00	182.08	182.82	0.74
Small Street	6400.00	182.17	182.83	0.66
Bentley Close	6500.00	182.17	182.85	0.68
	6600.00	182.12	182.86	0.74
Day Street	6700.00	182.13	182.87	0.74
Higgins Street	6800.00	182.15	182.89	0.74
Railway Bridge	6900.00	182.06	182.90	0.84
Mason Street	7000.00	182.24	182.91	0.67
	7100.00	181.96	182.93	0.97
	7200.00	181.86	182.94	1.08
	7300.00	179.92	182.95	-
	7400.00	182.52	182.96	0.44
	7500.00	182.37	182.98	0.61
	7600.00	182.45	182.99	0.54
Hammond Avenue	7700.00	181.91	183.01	1.10

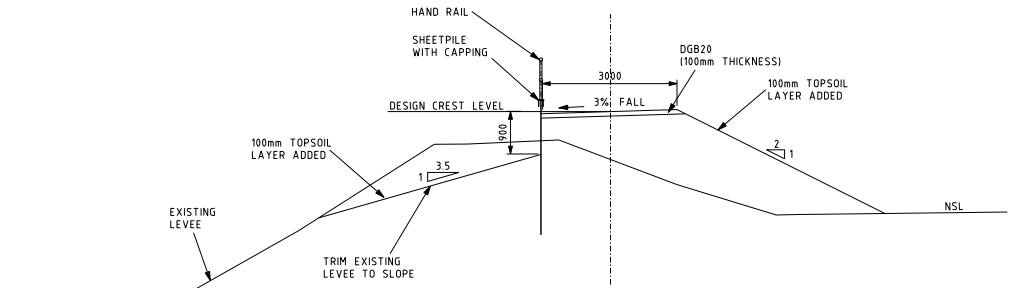
Main City Levee				
Location	Chainage	Natural ground level (AHD)	Design crest level (AHD)	Increased height (m)
	7800.00	182.49	183.05	0.56
	7900.00	182.56	183.09	0.53
	8000.00	182.54	183.12	0.58
	8100.00	182.53	183.16	0.63
	8200.00	182.58	183.20	0.62
	8300.00	182.61	183.21	0.60
Copland Street	8400.00	181.23	183.21	1.98
	8500.00	182.54	183.22	0.68
	8600.00	182.48	183.22	0.74
	8700.00	182.59	183.23	0.64
	8800.00	182.59	183.23	0.64
Railway Line	8900.00	181.77	183.24	1.47
	9000.00	181.00	183.25	-
	9100.00	181.65	182.35	0.70

North Wagga Wagga Levee				
Location	Chainage	Natural ground level (AHD)	Design crest level (AHD)	Increased height (m)
Hampden Avenue	0.00	179.30	180.90	1.60
	100.00	180.61	181.05	0.44
Henry Street	200.00	180.56	181.05	0.49
Mary Street	300.00	180.62	181.05	0.43
	400.00	180.55	181.05	0.50
William Street	500.00	180.63	181.05	0.42
	600.00	180.48	181.05	0.57
	700.00	180.41	181.05	0.64
	800.00	180.23	181.05	0.82
	900.00	180.09	181.05	0.96
Marah Street	1000.00	180.43	181.02	0.59
	1100.00	179.97	180.99	1.02
Mill Street	1200.00	180.01	180.96	0.95
	1300.00	180.08	180.85	0.77
	1400.00	180.02	180.74	0.72
	1500.00	180.06	180.72	0.66
	1600.00	180.09	180.69	0.60
Hampden Avenue	1700.00	179.92	180.66	0.74
	1800.00	181.28	180.63	
	1900.00	179.88	180.61	0.73
	2000.00	179.89	180.60	0.71
	2100.00	179.90	180.59	0.69
Arthur Street	2200.00	179.90	180.58	0.68

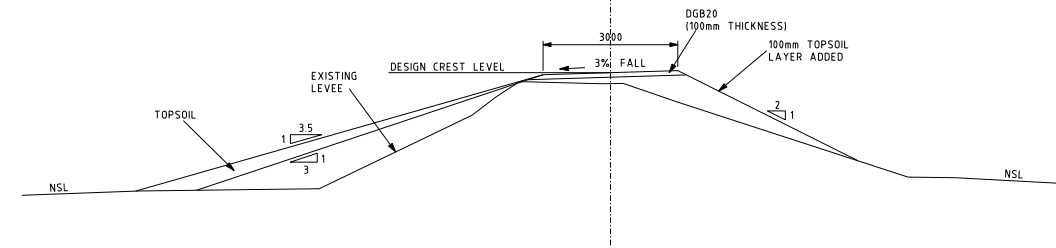
North Wagga Wagga Levee				
Location	Chainage	Natural ground level (AHD)	Design crest level (AHD)	Increased height (m)
	2300.00	179.93	180.58	0.65
Stevenson Street	2400.00	179.87	180.57	0.70
	2500.00	179.85	180.57	0.72
Rohan Street	2600.00	179.87	180.56	0.69
	2700.00	179.88	180.56	0.68
Fuller Street	2800.00	179.79	180.55	0.76
	2900.00	180.03	180.55	0.52
	3000.00	179.97	180.55	0.58
Gardiner Street	3100.00	180.19	180.55	0.36
	3200.00	179.78	180.55	0.77
Rohan Street	3300.00	179.89	180.55	0.66
	3400.00	180.01	180.55	0.54
	3500.00	180.10	180.55	0.45
	3600.00	180.06	180.55	0.49
	3700.00	180.17	180.55	0.38
Frederick Street	3800.00	180.07	180.59	0.52
	3900.00	180.07	180.65	0.58
	4000.00	180.27	180.71	0.44
	4100.00	180.16	180.76	0.60
	4200.00	180.09	180.82	0.73
Hampden Avenue	4300.00	179.90	180.90	1.00

East Street (Bank Two) Levee				
Location	Chainage	Natural ground level (AHD)	Design crest level (AHD)	Increased height (m)
Mill Street	0.00	180.18	180.85	0.67
	100.00	180.23	180.88	0.65
	200.00	180.28	180.92	0.64
Mill Street	300.00	179.98	180.96	0.98
	400.00	179.97	180.98	1.01
	500.00	179.96	181.00	1.04
	600.00	180.11	181.02	0.91
East Street	700.00	180.08	181.04	0.96
	800.00	180.08	181.05	0.97
	900.00	180.19	181.04	0.85
	1000.00	180.20	181.02	0.82
	1100.00	180.17	181.01	0.84
	1200.00	180.23	181.00	0.77
	1300.00	180.26	181.00	0.74
	1400.00	180.18	180.85	0.67

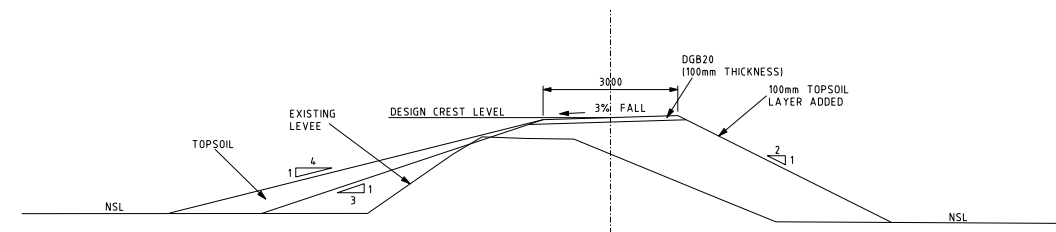
Appendix D Drawings of typical levee cross sections



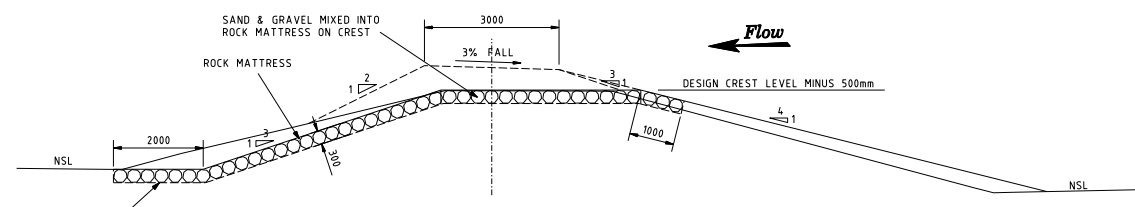
SHEETPILE RETAINING WALL
SCALE 1:50



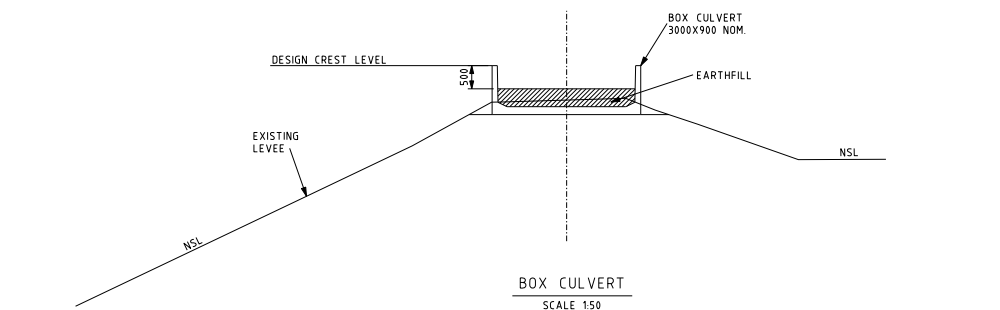
EARTHFILL LEVEE 1 ON 3.5 OUTER BATTER
SCALE 1:50



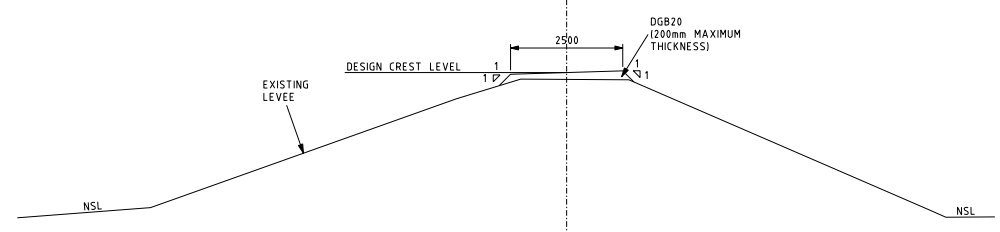
EARTHFILL LEVEE 1 ON 4 OUTER BATTER
SCALE 1:50



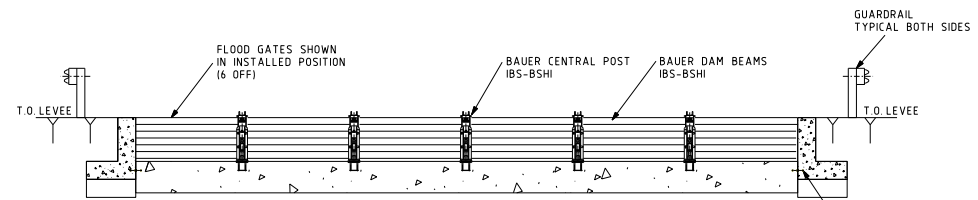
TYPICAL SPILLWAY SECTION
SCALE 1:50



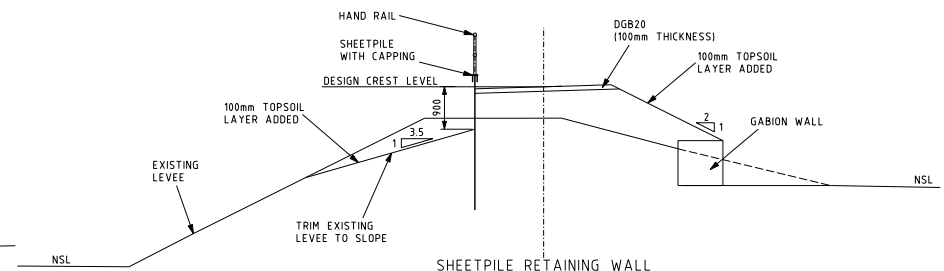
BOX CULVERT
SCALE 1:50



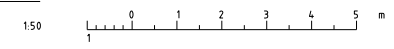
GRAVEL TOPPING
SCALE 1:50



SHOWING FLOOD GATES IN INSTALLED POSITION
FLOOD GATE
SCALE 1:50



SHEETPILE RETAINING WALL WITH GABION RETAINING WALL
SCALE 1:50



24/11/2011 2:04:25 PM BossenY G:\16\water\tec\pccdn\wagga levees\concept\dwg\ggoc 002.dgn

G:\16\water\tec\pccdn\wagga levees\concept\dwg\ggoc 002.dgn

NOT FOR CONSTRUCTION

CONCEPT DESIGN

MICHAEL COULTS-TROTTER
Department of Finance and Services
NSW WATER SOLUTIONS
DAMS AND CIVIL TECHNOLOGIES
LEVEL 13, McKELL BUILDING
2-24 RAWSON PLACE
SYDNEY 2000
PHONE (02) 93727808 FAX (02) 93727822

DESIGNED Y. BOSSON	SP ENGINEER J. DIXON
DRAWN Y. BOSSON	P/E DAMS AND CIVIL TECHNOLOGIES J. DIXON
CHECKED J. DIXON	

Public Works
New Water Solutions

City of Wagga Wagga

WAGGA WAGGA LEVEE UPGRADE FLOOD PROTECTION		REV. NO. 002
MAIN LEVEE TYPICAL CROSS SECTIONS		FILE NO. DEF
DRAWING NO. 11-002		REVISION 2

NO.	DETAILS OF AMENDMENTS	APPROVED	DATE
2	FLOODGATE DETAILS AMENDED, SPILLWAY SECTION ADDED	J.D.	18.11.11
1	ISSUED FOR REVIEW	J.D.	24.08.11
0	ISSUED FOR WORKSHOP	J.D.	17.06.11

Appendix E Consideration of clause 228(2) factors and matters of national environmental significance

Clause 228(2) factors

In addition to the requirements of the guideline '*Is an EIS required?*' as detailed in the REF, the following factors, listed in clause 228(2) of the *Environmental Planning and Assessment Regulation 2000*, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
a. Any environmental impact on a community?	
Residences and businesses located adjacent to the proposal site have the potential to be affected during construction by noise and vibration from construction plant, machinery and vehicles. Air quality impacts during construction would result from dust, vehicle emissions, and odour. Properties adjacent to the proposal site would also be affected by visual impacts relating to earthworks, stockpiling and machinery. These impacts would be minimised through implementation of safeguards in sections 6.5.3, 6.6.3 and 6.7.3.	Short-term moderate negative
Construction may cause minor changes for traffic on local roads. These impacts would be short-term and would be minimised through the implementation of safeguards detailed in section 6.10.3.	Short-term minor negative
The raising of the levees would increase the visual barriers between the urban areas of Wagga Wagga and the Murrumbidgee River and surrounding countryside.	Long-term moderate negative
The raising of the levees would cause small increases in flood depth and velocity at properties outside the levees in floods greater than the 60 year ARI flood level.	Long-term minor negative
The proposal would increase the level of flood protection for the City of Wagga Wagga, reducing the potential for flood damages and the associated economic costs and disruption to the community.	Long-term positive
It is expected that the increased level of flood protection provided to Central Wagga Wagga by the proposal would reduce the cost of insurance for property owners in this area.	Long-term positive
b. Any transformation of a locality?	
The proposal would be unlikely to substantially transform the locality because it involves the upgrade of levees rather than the construction of new levees. The height of the levees would be increased, with substantial earthworks.	Nil
The raising of the levees would increase the visual barriers between the urban areas of Wagga Wagga and the Murrumbidgee River and surrounding countryside. The proposal would transform the visual characteristics of the areas adjacent to the levees.	Long-term moderate negative
c. Any environmental impact on the ecosystems of the locality?	
During construction there is an increased risk of impacts such as sedimentation of the Murrumbidgee River, chemical and fuel spills and disturbance of fauna. These risks would be minimised through the implementation of safeguards detailed in section 6.1.4.	Short-term minor negative

Factor	Impact
<p>The proposal would remove 1.1 hectares of River Red Gum forest, which provides habitat for native fauna and flora. The study area is likely to provide habitat for 13 species, a population and an ecological community listed under the TSC Act and EPBC Act. The proposal is unlikely to have a significant effect on any of these mainly due to the small area of habitat proposed to be removed and the low number of hollow-bearing trees to be removed. The proposal would also potentially have impacts on biodiversity through the spread of weeds. Safeguards would be implemented as described in section 6.1.4.</p>	<p>Long-term minor negative</p>
<p>d. Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?</p>	
<p>During construction, the proposal would reduce the aesthetic quality of the locality as a result of visual impacts, dust generation and traffic movements. Residences and businesses located adjacent to the proposal site have the potential to be affected during construction by noise and vibration from construction plant, machinery and vehicles. Access to the picnic area at chainage 7200 may be temporarily blocked during construction at that location. These impacts would be minimised through implementation of safeguards outlined in sections 6.5.3, 6.6.3, 6.7.3 and 6.10.3.</p>	<p>Short-term minor negative</p>
<p>The raising of the levees would increase the visual barriers between the urban areas of Wagga Wagga and the Murrumbidgee River and surrounding countryside.</p>	<p>Long-term moderate negative</p>
<p>The proposal would improve public access to the river in Central Wagga Wagga by reducing the slope of the Main City Levee banks on the city side of the levee.</p>	<p>Long-term positive</p>
<p>e. Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?</p>	
<p>The proposal may require the relocation of a monument to the construction of the Main City Levee that was built in 1960 and a flood height gauge that may have been used for historic flood measurements, subject to approval.</p>	<p>Long-term minor negative</p>
<p>f. Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?</p>	
<p>The proposal would remove 1.1 hectares of River Red Gum forest, which provides habitat for native fauna protected under the NPW Act, including species listed as threatened under the TSC Act, as described in (g) below. The ecological assessment found that the proposal would be likely to impact fauna species through the removal of forest habitat, removal of hollow-bearing trees and spread of weeds. Safeguards would be implemented as described in section 6.1.4.</p>	<p>Long-term minor negative</p>
<p>g. Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</p>	
<p>The proposal would remove 1.1 hectares of River Red Gum forest, which provides habitat for native fauna and flora. The study area is likely to provide habitat for 13 fauna species, a population and an ecological community listed under the TSC Act and EPBC Act. The proposal is unlikely to have a significant effect on any of these mainly due to the small area of habitat proposed to be removed and the low number of hollow-bearing trees to be removed. The proposal would also potentially have impacts on biodiversity through the spread of weeds. Safeguards</p>	<p>Long-term minor negative</p>

Factor	Impact
would be implemented as described in section 6.1.4.	
h. Any long-term effects on the environment?	
The proposal would cause long-term visual impacts as described in (b) above.	Long-term moderate negative
The proposal would cause long-term ecological impacts as described in (g) above.	Long-term minor negative
The proposal would cause small increases in flood depth and velocity as described in (a) above.	Long-term minor negative
The proposal would increase the level of flood protection for the City of Wagga Wagga, as described in (a) above.	Long-term positive
i. Any degradation of the quality of the environment?	
Residences and businesses located adjacent to the proposal site have the potential to be affected during construction by noise and vibration, air quality impacts and visual impacts, as described in (a) above. These impacts would be minimised through implementation of safeguards in section 6.5.3, 6.6.3 and 6.7.3.	Short-term moderate negative
The raising of the levees would have long-term visual impacts as described in (b) above.	Long-term moderate negative
The proposal would degrade the quality of the environment through the ecological impacts described in (g) above. Safeguards would be implemented as described in section 6.1.4.	Long-term minor negative
j. Any risk to the safety of the environment?	
There is potential for road safety to be reduced during construction activities on roads. There could also be safety risks associated with the close proximity of the proposal site to the Wiradjuri Walking Track and other recreational areas. Traffic management safeguards described in section 6.10.3, including the preparation of a traffic management plan, would address public safety risks.	Short-term minor negative
The proposal would improve public safety in the long term by providing a greater level of flood protection to the City of Wagga Wagga.	Long-term positive
k. Any reduction in the range of beneficial uses of the environment?	
The proposal would result in traffic impacts during construction, including an increase in the volume of heavy vehicles, and interruptions to traffic flow and temporary changes in speed limit when road works occur.	Short-term minor negative
Access to the picnic area at chainage 7200 may be blocked during construction at that location.	Short-term minor negative
l. Any pollution of the environment?	
Residences and businesses located adjacent to the proposal site have the potential to be affected during construction by noise and vibration and air quality impacts, as described in (a) above. These impacts would be minimised through implementation of safeguards in sections 6.5.3 and 6.6.3.	Short-term moderate negative
The proposal would result in minor short-term air pollution from plant and machinery and the generation of dust during construction. Management of air quality impacts would be undertaken in accordance with the	Short-term moderate negative

Factor	Impact
safeguards outlined in section 6.6.3.	
During construction the proposal could potentially result in soil and water pollution, including pollution of the Murrumbidgee River. Pollution could result from sedimentation or chemical and fuel spills. Management of soil and water quality impacts would be undertaken in accordance with the safeguards outlined in section 6.2.3.	Short-term minor negative
Waste generated during construction could also pollute the environment. Waste would be managed in accordance with the safeguards outlined in section 6.12.3.	Short-term minor negative
m. Any environmental problems associated with the disposal of waste?	
The proposal would be unlikely to generate contaminated waste. Other waste streams generated during construction are common and would pose no difficulty in their disposal. Waste would be recycled wherever possible. Waste would be managed in accordance with the safeguards outlined in section 6.12.3.	Nil
n. Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?	
All resources required for the proposal are readily available and are not in short supply. Refer to section 6.14.	Nil
o. Any cumulative environmental effect with other existing or likely future activities?	
The cumulative effects of the proposal are discussed in section 6.15. Short-term cumulative impacts relate to soils and water quality, noise and vibration, traffic and access, visual amenity and air quality impacts. The proposal would be likely to have relatively minor cumulative impacts in relation to these factors.	Short-term minor negative
Long-term cumulative impacts relate to biodiversity, flooding, visual amenity and land use impacts. The proposal would be likely to have relatively minor cumulative impacts in relation to these factors.	Long-term minor negative
p. Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	
The proposal is not located within a coastal area, and would not cause any impact on coastal processes and coastal hazards.	Nil

Matters of national environmental significance

Factor	Impact
a. Any impact on a World Heritage property?	
The proposal would not have any impact on a World Heritage property. There are no World Heritage properties within 10 kilometres of the proposal.	Nil
b. Any impact on a National Heritage place?	
The proposal would not have any impact on a National Heritage place. There are no National Heritage places located within 10 kilometres of the	Nil

Factor	Impact
proposal.	
c. Any impact on a wetland of international importance?	
The proposal would not have any impact on a wetland of international importance. The proposal is located upstream of wetlands of international importance, but these are located in South Australia.	Nil
d. Any impact on listed threatened species or communities?	
The proposal would remove 1.1 hectares of River Red Gum forest, which provides habitat for native fauna and flora. The study area is likely to provide habitat for one bird species listed as threatened under the EPBC Act; the Superb Parrot (listed as vulnerable). The proposal is unlikely to have a significant effect on the species mainly due to the small area of habitat proposed to be removed and the low number of hollow-bearing trees to be removed. Safeguards would be implemented as described in section 6.1.4.	Minor
e. Any impacts on listed migratory species?	
The study area is likely to provide habitat for one bird species listed as migratory under the EPBC Act; the Rainbow Bee-eater. The proposed removal of habitat is unlikely to have significant impacts on the species due to its mobility and the relatively small proportion of habitat proposed to be removed.	Minor
f. Any impact on a Commonwealth marine area?	
The proposal is not located near a marine area and would be unlikely to have an impact on a marine area.	Nil
g. Does the proposal involve a nuclear action (including uranium mining)?	
The proposal does not involve a nuclear action.	Nil
h. Additionally, any impact (direct or indirect) on Commonwealth land?	
The proposal is not located near Commonwealth land and would be unlikely to have an impact on Commonwealth land.	Nil
i. Any impact on the Great Barrier Reef Marine Park?	
The proposal would not result in any impacts to the Great Barrier Reef Marine Park due to its distance from the park.	Nil

Appendix F Government agency consultation letter and responses to consultation



8 November 2012

Brian Wild
Head, Albury Unit
Office of Environment and Heritage
PO Box 544
ALBURY NSW 2640

Our ref: 23/14107/73431
Your ref:

Dear Brian

Wagga Wagga and North Wagga Murrumbidgee River Levee Upgrade Review of Environmental Factors - consultation

Wagga Wagga City Council proposes to upgrade the Wagga Wagga and North Wagga Wagga levees along the Murrumbidgee River (see attached map). The proposal would increase the level of flood protection for residents and businesses of Wagga Wagga.

Current levels of flood protection

The Main City Levee that surrounds the central business district of Wagga Wagga currently provides protection for a flood of the same magnitude as the August 1974 flood. The 1974 flood is estimated to have had a 60 year average recurrence interval (ARI) magnitude. The levee has a freeboard of about one metre.

The North Wagga Wagga area is protected by the North Wagga Wagga Levee and the East Street (Bank 2) Levee. These levees are designed to provide protection for floods of magnitude up to about the 17 year ARI level. The levees have a freeboard of about 30 centimetres.

The Wagga Wagga City Council Floodplain Risk Management Plan (WMAwater, 2009¹) recommended investigation of raising the Main City Levee and the North Wagga Wagga levees to provide increased flood protection, as a high priority.

Proposed levee upgrades

Council proposes to raise the Main City Levee to provide flood protection for up to a 100 year ARI flood event, with a freeboard of about 90 centimetres. Council also proposes to raise the North Wagga Wagga Levee and East Street (Bank 2) Levee to provide flood protection for up to a 20 year ARI flood event, with a freeboard of about 75 centimetres.

Key features of the proposal include:

- Construction of the following levee types, with average increases in height of 66 centimetres to 83 centimetres:
 - Embankment levees
 - Sheet pile levees

¹ WMAwater, 2009, Wagga Wagga Floodplain Risk Management Plan, report prepared for Wagga Wagga City Council, May 2009.



- Concrete wall levees
- Hybrid levees (embankment/sheet pile, embankment/gabion wall and embankment/box culvert)
- Construction of spillways to enable large floods (higher than the proposed level of flood protection) to enter the protected areas in a controlled manner
- Upgrade of levee crossings that are lower than the design flood protection level or that require structural improvement. These would include crossings for the Great Southern Railway, several major roads, and a number of minor roads and access roads.

Works would mostly involve earthworks to raise and extend the existing embankment levees, including:

- Increasing the height of the levees
- Flattening batters
- Improving compaction where necessary.

Other construction processes would include:

- Sheet pile installation
- Erection of gabion walls
- Raising and extending concrete retaining walls
- Placement of box culverts on levee where necessary
- Construction of rockfill mattress lined spillways
- Raising road crossings
- Construction of flood gate support walls, footings, flood gate assemblies (commissioning stage) and storage shed.

Wherever possible, native vegetation would be retained. The existing levees are generally free of trees and shrubs. The proposal would involve removal of trees, shrubs, groundcover and topsoil from the existing levees at various locations, and from adjacent land where the levees would be widened.

Where construction would use earth-fill methods, material would be excavated from three borrow sites (shown in the attached map), and transported to construction sites along the levee banks. The proposal would require about 184,000 tonnes of fill. There is the potential for the extraction of material from the borrow sites to exceed 30,000 tonnes per year.

The existing pit at the North Wagga borrow site contains water from the flooding that occurred in March 2012. If water is present in the pit when material needs to be sourced from the site, Council may seek to pump the water out of the pit into a drainage line running through the site (see attached map). This drainage line runs into Dukes Creek.

Where retaining walls are constructed, materials such as sheet piling and concrete would be used. On-site concrete works would be required for options requiring concrete structures.



Review of environmental factors and invitation to comment

GHD has been engaged by Council to prepare a review of environmental factors (REF) for the proposal, in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *NSW State Environmental Planning Policy (Infrastructure) 2007*.

We would like to provide you with the opportunity to comment on the proposal to assist the REF. It would be appreciated if you could provide comments by Friday, 7 December 2012.

The following documents relating to the proposal are available on Council's website at www.wagga.nsw.gov.au/floodfutures:

- Concept design
- Preliminary environmental planning overview
- Supporting documents.

We would be pleased to provide further information if required. In this regard Reuben Robinson may be contacted on (02) 6923 7418 or by email reuben.robinson@ghd.com.

Yours sincerely

Reuben Robinson

Senior Ecologist / Environmental Scientist
61 2 69237 418



Our reference: FIL06/1315-08, DOC12/47119
Contact: Chris Burton, 02 6022 0609

The Senior Environmental Scientist
GHD Pty Ltd
Suite 3 Level 1
161-169 Bayliss Street
WAGGA WAGGA NSW 2650

Dear Mr Robinson

Re Wagga Wagga and North Wagga Murrumbidgee River Levee Upgrade

I refer to your letter dated 8 November 2012 to the Environment Protection Authority (EPA) regarding the Review of Environmental Factors (REF) for the upgrade of the levee in Wagga Wagga.

We understand that the proposed works are designed to increase the height of the levee to provide protection for the city of Wagga Wagga up to a 100 year average recurrence interval (ARI) flood event.

To achieve this increase in levee height works are required to be undertaken adjacent to and within the Murrumbidgee River. We have provided at Attachment A the matters that need to be addressed in a Review of Environmental Factors (REF) and in Attachment B we include details of appropriate guidance material to be referred to in the preparation of an REF.

The works will require the establishment of borrow pits which have the potential to exceed an extraction rate of 30,000 tonnes per year. For extraction activities that exceed 30,000 tonnes per annum an Environment Protection Licence will be required to be obtained from the EPA for the activity.

As the levee upgrade works are to be undertaken by Council, the EPA is the Appropriate Regulatory Authority for environmental impacts associated with the works along the whole levee alignment.

If you have any further enquiries about this matter please contact Chris Burton by telephoning 02 6022 0609.

Yours sincerely

A handwritten signature in black ink, appearing to read 'B Wild'.

BRIAN WILD
Head, Albury Unit
Environment Protection Authority

19 November 2012

ATTACHMENT A

Potential environmental impacts of the project

1. The following potential environmental impacts of the project need to be assessed, quantified and reported on.
 - (a) Air;
 - (b) Noise;
 - (c) Water;
 - (d) Land;
 - (e) Waste and chemicals; and
 - (f) Rehabilitation.

The Review of Environmental Factors (REF) should address how the required environmental goals will be met for each potential impact.

2. Describe the management strategies for the treatment and disposal/utilisation of all liquid and solid wastes generated by the proposed activities.
3. Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified potential environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.

This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

Potential impacts on air quality

The goals of the project in relation to air quality should include mitigation of air quality impacts such that potential impacts on sensitive receptors are minimised in accordance with Environment Protection Authority (EPA) particulate matter and deposited dust criteria.

Dust is a concern with potential emissions including but not necessarily limited to construction, traffic movements, open exposed areas, material processing and handling, transfer points, and loading facilities. Details would need to be provided on the proposed measures to manage dust from these activities and their performance.

An assessment for dust as detailed in the *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in New South Wales* in conjunction with analysis of local meteorologic and terrain data would be sufficient to inform decisions about design and management options for the proposed development.

The REF should identify any other existing impacts on air quality within the area and if necessary provide an assessment and commentary on the predicted cumulative impacts that may arise.

Potential impacts of noise

The goals of the project should include design, construction, operation and maintenance of the proposed works in accordance with relevant policies, guidelines and criteria, and in order to minimise potential impacts from noise.

Any potential noise sources should be assessed in accordance with the *Industrial Noise Policy (INP)* (EPA, 2000), and where required mitigation measures are proposed (eg appropriate equipment chosen to

minimise noise levels). All residential or noise sensitive premises likely to be impacted by the development must be identified and included in the assessment.

Short term impacts associated with the upgrade to the levee should be assessed through the Interim Noise Construction Guideline.

The proposed development may see an increase in traffic movements associated with the transport of material. The number of traffic movements associated with the proposal should be quantified and potential noise impacts associated with these traffic movements need to be assessed in accordance with the *NSW Road Noise Policy* (DECCW, 2011).

Potential impacts on water quantity and quality

The goals of the project should include:

- No pollution of waters (including surface and groundwater); and
- Polluted water (including process waters, wash down waters, or polluted stormwater) is captured on the site and collected, treated and beneficially reused, where this is safe and practicable to do so.

The REF should document the measures that will achieve the above goals.

Details of the site drainage and any natural or artificial waters within or adjacent to the development must be identified and where applicable measures proposed to mitigate potential impacts of the development on these waters.

The REF should provide details of any water management systems for the borrow pits to ensure surface and ground waters are protected from contaminants.

A characterisation of potential water pollutants at the site should also be undertaken including the identification of any proposed water pollution controls and their performance. This should include details of the design and location of tailings disposal sites and any other wastewater treatment ponds.

Potential impacts on land

The goals of the project should include:

- No pollution of land,
- The potential impact of land erosion from the development is mitigated; and
- Any potentially contaminated sites that are encountered or disturbed are appropriately managed and rehabilitated.

The REF should document the measures that will achieve the above goals.

Waste and chemicals

The goals of the project should include:

- It is in accordance with the principles of the waste hierarchy and cleaner production;
- Where potential impacts associated with the handling, processing and storage of all materials used at the premises are identified, these be mitigated by the development;
- The beneficial reuse of all wastes generated at the premises are maximised where it is safe and practical to do so; and
- No waste disposal occurs on site.

A goal of the project should ensure that environmental risks from hazardous chemicals and chemical waste are minimised. The REF needs to identify the proposed type, quantity and location of chemicals to be stored on site. Spill management measures, including items such as bunding, and emergency procedures should be clearly outlined.

Rehabilitation

The goals of the project should include:

- Reforming of the land to a pre-determined profile;
- Rehabilitation be undertaken in a progressive manner;
- Planting of any benches and batter slopes to stabilise and visually improve areas;
- Topsoiling and revegetation of the site, including seeding with local endemic species; and
- Adequate drainage controls.

The REF should document the measures that will achieve the above goals.

ATTACHMENT B

GUIDANCE MATERIAL

Assessing Environmental Impacts

Air quality

- *Protection of the Environment Operations (Clean Air) Regulation 2010*
- Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (DECC, 2005). Available online <http://www.environment.nsw.gov.au/air/appmethods.htm>
- Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (DECC, 2005). Available online <http://www.environment.nsw.gov.au/air/appmethods.htm>
- Technical framework: Assessment and Management of Odour from Stationery Sources in NSW (DECC, 2006). Available online <http://www.environment.nsw.gov.au/air/odour.htm>

Noise and vibration

- NSW Industrial Noise Policy (DECC, 2000). Available online <http://www.environment.nsw.gov.au/noise/industrial.htm>
- NSW Road Noise Policy (DECCW, 2011) Available online <http://www.environment.nsw.gov.au/resources/noise/2011236nswroadnoisepolicy.pdf>
- Assessing Vibration: a technical guideline (DECC, 2006). Available online <http://www.environment.nsw.gov.au/noise/vibrationguide.htm>
- Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration (ANZECC, 1990) Available online <http://www.environment.nsw.gov.au/resources/noise/ANZECBlasting.pdf>
- Interim Noise Construction Guideline (DECCW, 2009). Available online <http://www.environment.nsw.gov.au/resources/noise/09265cng.pdf>

Water quality

- National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000)
- National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ, 2000)
- Using the ANZECC Guidelines and Water Quality Objectives in NSW (DECC, 2006)

Groundwater

- The NSW State Groundwater Policy Framework Document (DLWC, 1997)
- The NSW State Groundwater Quality Protection Policy (DLWC, 1998)
- The NSW State Groundwater Dependent Ecosystems Policy (DLWC, 2002)
- National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC, 1995)

Stormwater

- Managing Urban Stormwater: Soils and Construction (Landcom, 2004)
- Managing Urban Stormwater: Treatment Techniques (Draft) (DECC, 1997)

Wastewater

- Environmental Guidelines: Use of Effluent by Irrigation (DECC, 2004). Available online <http://www.environment.nsw.gov.au/water/effluent.htm>
- National Water Quality Management Strategy - Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) - November 2006.
- National Guidelines for Water Recycling – Managing Health and Environmental Risks – Impact Assessment.

Waste

- Waste Classification Guidelines, Part 1: Classifying Waste, December 2009. Available online <http://www.environment.nsw.gov.au/resources/waste/091216classifywaste.pdf>
- Environmental Guidelines: Solid Waste Landfills (DECC, 1996). Available online at <http://www.environment.nsw.gov.au/resources/waste/envguidlns/solidlandfill.pdf>. (Note: There has been a number of legislative and waste classification changes since this Guideline was published. Reference should be made to current Waste Classification Guidelines, the Protection of the Environment Operation Act 1997 for the licensing requirements, and to the following web address for the list of sensitive sites - <http://www.environment.nsw.gov.au/resources/waste/envguidlns/sensitivearea.pdf>)
- Environmental Guidelines: Use and Disposal of Biosolids Products (DECC, 1997). Available online <http://www.environment.nsw.gov.au/waste/envguidlns/index.htm>
- Environmental Guidelines: Composting and Related Organics Processing Facilities (DECC, 2004). Available online http://www.environment.nsw.gov.au/resources/waste/envguidlns/composting_guidelines.pdf
- Storing and Handling Liquids: Environmental Protection - Participants Manual <http://www.environment.nsw.gov.au/resources/sustainbus/2007210liquidsManual.pdf>



Office of
Environment
& Heritage

Our reference: DOC12/43418
Contact: Tobi Edmonds
(02) 6229 7094

Mr Phil Pinyon
General Manager
Wagga Wagga City Council
PO Box 20
WAGGA WAGGA, NSW 2650

Dear Mr Pinyon

RE: Wagga Wagga and North Wagga Wagga Murrumbidgee River Levee Upgrades Review of Environmental Factors

Thank you for providing the opportunity for the Office of Environment and Heritage (OEH) to comment on the Report Prepared by OzArk Environmental & Heritage Management Pty Ltd and the Ecological Assessment completed by GHD. OEH has reviewed both documents and provides the following comments.

In regard to the Aboriginal Cultural Heritage Assessment. The report complies with the requirements of OEH under the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010) and covers the issues and topics that OEH expects to be contained in a report of this kind. No Aboriginal objects were located in the activity area. The report presents a number of recommendations that are appropriate, including an Unanticipated Finds Protocol. This protocol provides appropriate advice to the proponent on the future management of an Aboriginal objects that may be discovered in the area during works.

With regard to the Ecological Assessment detailed comments have been made in Attachment 1. These comments recommend some additions to the mitigation measures.

Should you wish to discuss these matters further please contact Tobi Edmonds on (02) 6229 7094 or by email at tobi.edmonds@environment.nsw.gov.au.

Yours sincerely

MARK SHEAHAN
A/Manager Landscape and Aboriginal Heritage Protection Section
Regional Operations

cc: NSW Office of Water

Enclosure: ATTACHMENT 1 – DETAILED RESPONSE TO ECOLOGICAL ASSESSMENT
ATTACHMENT 2 – PRUNING FOR HABITAT INFORMATION

ATTACHMENT 1 – DETAILED RESPONSE TO ECOLOGICAL ASSESSMENT

Table 6: Assessment of the landscape value of vegetation in the study area

Willans Hill is within 2 kilometres of the study area and through biocertification will link all of the other sites listed.

5.2 indirect impacts

Damage to the critical root zone of trees which have not been identified as requiring removal. WWCC should conduct works according to the Australian Standard – Protection of trees on development sites (AS4970-2009)

Table 14: Safeguards and mitigation measures to be implemented for the proposal

Offset hollows with habitat pruning techniques, at a ratio of 10:1 into non-hollow bearing trees. Habitat Pruning should be used in preference to the placement of nest boxes to ensure the long term availability of the hollows. Should Council wish to use Nest Boxes, these will need to be checked and potentially replaced on a 5 yearly basis. Attachment 2 provides a guide for the creation of hollows through habitat pruning.

Erosion control should be carried out according to '*Managing Urban Stormwater – Soils and Construction*' (The Blue Book) as one of the mitigation measures listed in this section.

Appendix G Database searches

Search Results

19 results found.

CBC Bank (former) Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Church and Cathedral Group Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Civic Group Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Estella Homestead, Outbuildings and Barn Old Narrandera Rd	Wagga Wagga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Hampden Bridge Hampden Ave	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
House Cobden La	Malebo via Wagga Wagga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Murrumbidgee River Rail Bridge	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Police Station Sturt St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Railway Station Station Pl	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

St Andrews Manse Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Andrews Presbyterian Church Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Johns Anglican Church Church St	Wagga Wagga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
St Michaels Cathedral Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Michaels Cathedral Johnston St	Wagga Wagga, NSW, Australia	(Nomination now ineligible for PPAL) National Heritage List
St Michaels Presbytery (The Bishops House) Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
The Rock Nature Reserve	The Rock, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wagga South Public School Edward St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wagga Wagga Courthouse Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wagga Wagga Post Office (former) Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Fri Dec 14 09:53:02 2012



You are here: [Home](#) > [Heritage sites](#) > [Searches and directories](#) > NSW heritage search

Search for NSW heritage

[Return to search page where you can refine/broaden your search.](#)

Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into two sections.

- Section 1. contains items listed by the heritage council under the NSW Heritage Act. This includes listing on the state heritage register, an interim heritage order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Branch.
- Section 2. contains items listed by local councils & shires and state government agencies. This section may also contain additional information on some of the items listed in the first section.

Section 1. Items listed under the NSW Heritage Act.

Your search returned 2 records.

Item name	Address	Suburb	LGA	Listed under Heritage Act
Mobile Cook's Galley, Museum of the Riverina	Botanic Gardens Site (BGS) Baden Powell Drive	Wagga Wagga (Museum of the Riverina)	Wagga Wagga	Yes
Wagga Wagga Railway Station and yard group	Main Southern railway	Wagga Wagga	Wagga Wagga	Yes

Section 2. Items listed by Local Government and State Agencies.

Your search returned 101 records.

Item name	Address	Suburb	LGA	Information source
2Wg Sign	14 Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Ambulance Station	54 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV
Anz Bank (Former)	44 Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Barters Restaurant	143-147 Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Belmore House, Residence	44 Kincaid Street	Wagga Wagga	Wagga Wagga	LGOV
Best Street Railway Gatehouse (Former)	97 Railway Street	Wagga Wagga	Wagga Wagga	LGOV
Bishops House	9 Church Street	Wagga Wagga	Wagga Wagga	LGOV
Brewery (Former)	22-24 The Esplanade	Wagga Wagga	Wagga Wagga	LGOV
Brick Building	65 Fox Street	Wagga Wagga	Wagga Wagga	LGOV
Bryan J Hamilton Offices (Former)	38 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV
Calvary Hospital and Chapel	22 Lewisham Avenue	Wagga Wagga	Wagga Wagga	LGOV
Canary Island Palm Trees (Along The Lagoon)	66 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV

Cbc Bank (Former)	53-55 Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Christian Brothers High School and Staff Centre (Former Monastery)	20 Church Street	Wagga Wagga	Wagga Wagga	LGOV
Civic Precinct	243 Baylis Street	Wagga Wagga	Wagga Wagga	LGOV
Collins Park	131 Forsyth Street	Wagga Wagga	Wagga Wagga	LGOV
Corner Store and Residence	105 Forsyth Street	Wagga Wagga	Wagga Wagga	LGOV
Corner Store and Residence	94 Morgan Street	Wagga Wagga	Wagga Wagga	LGOV
Corner Store, Former	130 Docker Street	Wagga Wagga	Wagga Wagga	LGOV
Corner Store, Former	135 Edward Street	Wagga Wagga	Wagga Wagga	LGOV
Cottage	166 Tarcutta Street	Wagga Wagga	Wagga Wagga	LGOV
Council Chambers (Former)	Corner Baylis and Morrow Streets	Wagga Wagga	Wagga Wagga	LGOV
Court House	57 Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Croquet Club	25 Fitzhardinge Street	Wagga Wagga	Wagga Wagga	LGOV
Department of Lands Building	26-28 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV
Docker Street Railway Gatehouse, Former	1 Docker Street	Wagga Wagga	Wagga Wagga	LGOV
Dorset Cottage	14 Trail Street	Wagga Wagga	Wagga Wagga	LGOV
Drill Hall	6 Dobbs Street	Wagga Wagga	Wagga Wagga	LGOV
Electrical Substation	10 The Esplanade	Wagga Wagga	Wagga Wagga	LGOV
Fire Station Building and Residence (Former)	2 The Esplanade	Wagga Wagga	Wagga Wagga	LGOV
Hampden Bridge, The (Timber Truss Bridge)	199 Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Headmaster's Residence (Former)	70 Gurwood Street	Wagga Wagga	Wagga Wagga	LGOV
House	40 Trail Street	Wagga Wagga	Wagga Wagga	LGOV
Kyeamba Shire and Mitchell Shire Office Buildings (Former)	30-34 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV
Murrumbidgee Milling Company Flour Mill (Former) and Outbuildings	50-82 Edward Street	Wagga Wagga	Wagga Wagga	LGOV
North Wagga Primary School	Hampden Avenue	North Wagga Wagga	Wagga Wagga	LGOV
North Wagga Wagga Hall	76 Hampden Avenue	North Wagga Wagga	Wagga Wagga	LGOV
Palm Tree Avenue	Peter Street	Wagga Wagga	Wagga Wagga	LGOV
Plaza Theatre	161-169 Baylis Street	Wagga Wagga	Wagga Wagga	LGOV
Police Station	10-20 Sturt Street	Wagga Wagga	Wagga Wagga	LGOV
Police Station (Former)	52 Hampden Avenue	North Wagga Wagga	Wagga Wagga	LGOV
Post Office (Former)	49-51 Fitzmaurice Street	Wagga Wagga		LGOV

			Wagga Wagga	
Railway Action and Yard Group	20 Station Place	Wagga Wagga	Wagga Wagga	LGOV
Residence	7 Beauty Point Avenue	Wagga Wagga	Wagga Wagga	LGOV
Residence	19 Beauty Point Avenue	Wagga Wagga	Wagga Wagga	LGOV
Residence	21 Gardiner Street	North Wagga Wagga	Wagga Wagga	LGOV
Residence	96 Gardiner Street	North Wagga Wagga	Wagga Wagga	LGOV
Residence	136 Docker Street	Wagga Wagga	Wagga Wagga	LGOV
Residence	77 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV
Residence	4 Morrow Street	Wagga Wagga	Wagga Wagga	LGOV
Residence	32 Hampden Avenue	North Wagga Wagga	Wagga Wagga	LGOV
Residence	20 Docker Street	Wagga Wagga	Wagga Wagga	LGOV
Residence	16 The Esplanade	Wagga Wagga	Wagga Wagga	LGOV
Residence	201 Tarcutta Street	Wagga Wagga	Wagga Wagga	LGOV
Residence	48 Trail Street	Wagga Wagga	Wagga Wagga	LGOV
Residence	79 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV
Residence (Former Home of Compassion)	109 Fox Street	Wagga Wagga	Wagga Wagga	LGOV
Residence (Former)	64 Tompson Street	Wagga Wagga	Wagga Wagga	LGOV
Residence (Former)	20 Simmons Street	Wagga Wagga	Wagga Wagga	LGOV
Residence (Former)	102 Peter Street	Wagga Wagga	Wagga Wagga	LGOV
Residence "Moonbiana"	103 Fox Street	Wagga Wagga	Wagga Wagga	LGOV
Residential Flats "Wilstone Court"	40 Fitzhardinge Street	Wagga Wagga	Wagga Wagga	LGOV
Riverine Club	231 Tarcutta Street	Wagga Wagga	Wagga Wagga	LGOV
Robertson Oval Gates and Ticket Boxes	2 Morgan Street	Wagga Wagga	Wagga Wagga	LGOV
Rowan	6910 Holbrook Road	Wagga Wagga	Wagga Wagga	LGOV
Semi-detached Residence	1-3 Beckwith Street	Wagga Wagga	Wagga Wagga	LGOV
Shops	9-11 Gurwood Street	Wagga Wagga	Wagga Wagga	LGOV
South Wagga Public School	140 Edward Street	Wagga Wagga	Wagga Wagga	LGOV
South Wagga Tennis Club	40 Oates Avenue	Wagga Wagga	Wagga Wagga	LGOV
Springfield	51 East Road	North Wagga Wagga	Wagga Wagga	LGOV
St Andrew's Manse	5 Church Street	Wagga Wagga		LGOV

			Wagga Wagga	
St Andrew's Presbyterian Church	7 Cross Street	Wagga Wagga	Wagga Wagga	LGOV
St John's Anglican Church	Church Street	Wagga Wagga	Wagga Wagga	LGOV
St Mary's Anglican Church and Hall	15 William Street	North Wagga Wagga	Wagga Wagga	LGOV
St Michael's Presbytery	9 Church Street	Wagga Wagga	Wagga Wagga	LGOV
St Michael's Roman Catholic Cathedral	10 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV
Stationmaster's Residence (Former)	14 Station Place	Wagga Wagga	Wagga Wagga	LGOV
Street Directory and Palm Trees	Adjacent To 1 Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Terrace Building	106-110 Tompson Street	Wagga Wagga	Wagga Wagga	LGOV
The Manor	38 Morrow Street	Wagga Wagga	Wagga Wagga	LGOV
The Mill House	153 Hampden Avenue	North Wagga Wagga	Wagga Wagga	LGOV
Union Club Hotel	122-124 Baylis Street	Wagga Wagga	Wagga Wagga	LGOV
Victory Memorial Gardens	Corner Baylis and Morrow Streets	Wagga Wagga	Wagga Wagga	LGOV
Wagga Wagga (521.7 Km) Footbridge	521.7km Cassidy Pde & Brookong Ave	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Agricultural Institute	Pine Gully Road	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Ambulance Station	Johnston Street	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Base Hospital	Edward Street	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Base Hospital (C1960 Building)	Edward Street	Wagga Wagga	Wagga Wagga	LGOV
Wagga Wagga Conservation Area		Wagga Wagga	Wagga Wagga	LGOV
Wagga Wagga Court House	Fitzmaurice Street	Wagga Wagga	Wagga Wagga	LGOV
Wagga Wagga Courthouse	Fitzmaurice Street	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Fire Station	36-38 The Esplanade	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Police Station and Office (Former)	2-6 Sturt Street	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Railway Precinct	Station Place	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Railway Precinct	Station Place	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Viaducts	Across Murrumbidgee Flood Plain	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga Zone Substation	10-14 The Esplanade	Wagga Wagga	Wagga Wagga	SGOV
Wagga Wagga, Tarcutta Street Underbridge	520.157km Main Southern Railway	Wagga Wagga	Wagga Wagga	SGOV
Wagga Waterworks	89 Hammond Avenue	Wagga Wagga	Wagga Wagga	LGOV
Water Trough		Wagga Wagga		LGOV

	Opposite 132 Forsyth Street		Wagga Wagga	
Wesley Uniting Church	17 Johnston Street	Wagga Wagga	Wagga Wagga	LGOV

There was a total of 103 records matching your search criteria.

Key:

LGA = Local Government Area

GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.

Note: The Heritage Branch seeks to keep the State Heritage Inventory (SHI) up to date, however the latest listings in Local and Regional Environmental Plans (LEPs and REPs) may not yet be included. Always check with the relevant local council or shire for the most recent listings.



You are here: [Home](#) > [Contaminated land](#) > [Record of notices](#)

Search results

Your search for: LGA: Wagga Wagga City Council

Matched 7 notices
relating to 3 sites.

Date from: 23 Oct 1950

Date to: 23 Oct 2012

[Search Again](#)

[Refine Search](#)

Suburb	Address	Site Name	Notices related to this site
Tarcutta	32 Sydney Street	Mobil Service Station, Tarcutta	3 former
Wagga Wagga	Tarcutta Street	Former Gasworks	1 current
Wagga Wagga	Chaston Street	Wagga Wagga Gasworks	1 current and 2 former

Page 1 of 1

23 October 2012



You are here: [Home](#) > [Contaminated land](#) > [Record of notices](#)

Site and notice details

Your search for: LGA: Wagga Wagga City Council 7 notices on 3 sites were matched.
 Date from: 23 Oct 1950
 Date to: 23 Oct 2012

[Return to list of search results](#)

Search Again

Refine Search

Area No: 3239

The information below was correct at the time the notices were issued.

Site: Former Gasworks
 Address: Tarcutta Street, Wagga Wagga, 2650
 LGA: Wagga Wagga City Council

Owner: City of Wagga Wagga

Lot 1 DP 717828 Lot 10/86 DP 759031 Lot 3 DP 828377 Lot 4 DP 828377

Notices relating to this site (1 current and 0 former)

(Map) where available, maps show the part of the site affected by the notice
*notice matched search criteria

Notice recipient	Notice type & number	Status	Date
Not Applicable	Declaration of Remediation Site* 21106 Map	Current	Issued 10 Aug 2007

23 October 2012



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 20/09/12 09:22:44

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

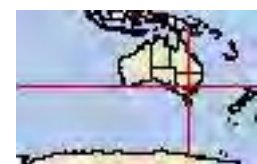
[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	14
Listed Migratory Species:	12

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As [heritage values](#) of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	13
Commonwealth Heritage Places:	None
Listed Marine Species:	9
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

Place on the RNE:	17
State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	11
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (RAMSAR)	[Resource Information]
Name	Proximity
Banrock station wetland complex	Upstream from Ramsar
Coorong and lakes alexandrina and albert	Upstream from Ramsar
Riverland	Upstream from Ramsar

Listed Threatened Ecological Communities

[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species

[Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Endangered	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Breeding likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Vulnerable	Species or species

Name	Status	Type of Presence
habitat likely to occur within area		
Fish		
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Frogs		
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Nyctophilus corbeni South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Plants		
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Xanthomyza phrygia Regent Honeyeater [430]	Endangered*	Species or species habitat may occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Vulnerable*	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Commonwealth Land - Australian Broadcasting Corporation Commonwealth Land - Australian Telecommunications Commission Commonwealth Land - Commonwealth Bank of Australia Commonwealth Land - Defence Housing Authority Commonwealth Land - Defence Service Homes Corporation Commonwealth Land - Director of War Service Homes Defence - BLAMEY BARRACKS - KAPOOKA Defence - RAAF BASE WAGGA Defence - WAGGA ARES DEPOT ; BLAMEY BKS -WAGGA WAGGA TRG DEP Defence - WAGGA - WATER BORE SITE AP1 Defence - WAGGA - WATER BORE SITE AP2 Defence - WAGGA - WATER BORE SITE AP3

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Vulnerable*	Species or species habitat likely to occur within area

Extra Information

Places on the RNE [[Resource Information](#)]

Note that not all Indigenous sites may be listed.

Name	State	Status
Historic		
Estella Homestead, Outbuildings and Barn House	NSW	Indicative Place
St Johns Anglican Church	NSW	Indicative Place
CBC Bank (former)	NSW	Registered
Church and Cathedral Group	NSW	Registered
Civic Group	NSW	Registered
Hampden Bridge	NSW	Registered
Murrumbidgee River Rail Bridge	NSW	Registered
Police Station	NSW	Registered
Railway Station	NSW	Registered
St Andrews Manse	NSW	Registered
St Andrews Presbyterian Church	NSW	Registered
St Michaels Cathedral	NSW	Registered
St Michaels Presbytery (The Bishops House)	NSW	Registered
Wagga South Public School	NSW	Registered
Wagga Wagga Courthouse	NSW	Registered
Wagga Wagga Post Office (former)	NSW	Registered

Invasive Species [[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Mammals		
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species

Name	Status	Type of Presence
Plants		
Asparagus asparagoides	Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]	Species or species habitat likely to occur within area
Lycium ferocissimum	African Boxthorn, Boxthorn [19235]	Species or species habitat may occur within area
Nassella neesiana	Chilean Needle grass [67699]	Species or species habitat likely to occur within area
Nassella trichotoma	Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]	Species or species habitat likely to occur within area
Pinus radiata	Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]	Species or species habitat may occur within area
Rubus fruticosus aggregate	Blackberry, European Blackberry [68406]	Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii	Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	Species or species habitat likely to occur within area
Salvinia molesta	Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]	Species or species habitat likely to occur within area

Coordinates

-35.096363 147.349936,-35.089358 147.374758,-35.092555 147.388312,-35.127733
147.391967,-35.096515 147.350088,-35.096363 147.349936

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Department of Environment, Climate Change and Water, New South Wales](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment and Natural Resources, South Australia](#)
- [Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [Environmental and Resource Management, Queensland](#)
- [Department of Environment and Conservation, Western Australia](#)
- [Department of the Environment, Climate Change, Energy and Water](#)
- [Birds Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [SA Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence](#)
- [State Forests of NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

Appendix H Ecological assessment

Appendix I Noise and vibration assessment

Appendix J Aboriginal and historic heritage assessment

Appendix K Community consultation documents and newspaper articles



Wagga Wagga
City Council

Flood Futures

Main City & North Wagga Levee Upgrade Have Your Say on the concept designs for the proposed levee upgrade

Levee Upgrade Project Summary

As we experienced recently in March 2012 and December 2010, a large flood event can have a disastrous affect on the lives of thousands within our community.

Since 2009, Council has been investigating the feasibility of upgrading the levee systems protecting North Wagga and Central Wagga Wagga and responding to the lengthy requirements related to the project.

Concept designs for the proposed levee upgrade have now been completed. Council would like to ensure you have the opportunity to hear more about the project and:

- Provide input into the concept design for the levee upgrade
- Discuss how the construction may impact on adjoining properties, and
- Hear how an increased levee height may change flows on the floodplain for floods above a river height of 10.7m

What will the levee upgrade protect against?

Wagga Wagga has not experienced a 1 in 100 year flood event in recorded history. Over 6,000 properties within the Wagga Wagga Local Government Area would currently be impacted upon by a 1 in 100 year flood event.

Council's proposed Main City levee upgrade project aims to offer protection against a 1 in 100 year flood event.

Properties in Central Wagga Wagga are currently protected by a levee system which provides protection against a 10.7m river height. The proposed upgrade of the levee protecting central Wagga will provide protection against an 11.33m river.

Properties in North Wagga are currently protected by levee system equivalent to a 9.6m river height. The upgrade of the levee protecting North Wagga will provide protection against a 10.0m river.

What might the new levee look like?

Upgrading the current levee system will require more than adding material to increase its height. The concept designs reflect that the old levee will be completely rebuilt in width, height and in some cases using different material to what currently exists.

Reviewing the concept designs will provide you with the proposed material currently identified for use in each section.

How do I find out more about the designs?

At www.wagga.nsw.gov.au/floodfutures you can review the designs, find a broad range of information, videos and images related to Council's ongoing flood management, participate in online discussions and surveys and lodge your submission.

The concept designs will also be available at Council's Customer Service desk. In addition, you can come along to Community Information Meetings, or make an appointment with Council Officers.

Community Information Meetings

At the Community Meetings, Council Officers will provide you with an overview of the concept design, how to view the documents and how to make a submission. Recognising the differing aspects of flood management across the Local Government Area, meetings have been scheduled at the following locations:

Gumly Gumly Hall

Thursday, 22 November 2012
6pm - 8pm

North Wagga Wagga Hall

Thursday, 29 November 2012
6pm - 8pm

Civic Centre Council Meeting Room, Wagga Wagga

Tuesday, 4 December 2012
6pm - 8pm

Oura Hall

Thursday, 6 December 2012
6pm - 8pm

Collingullie Hall

Wednesday, 12 December 2012
6pm - 8pm

Individual Meetings

If you are a property owner within the Wagga Wagga Local Government Area you have the opportunity to meet with a Council Officer to discuss the impact of this project and a 1 in 100 year flood event on your property.

Please email leveeupgrade@wagga.nsw.gov.au or call 1300 292 442 to make an appointment.

www.wagga.nsw.gov.au/floodfutures
1300 292 442



Wagga Wagga
City Council

Flood Futures

Wagga Wagga Flood Levee Upgrade Review of Environmental Factors

What is a review of environment factors?

Council is preparing a review of environmental factors (REF) for the proposal, in accordance with Part 5 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) and the NSW State Environmental Planning Policy (Infrastructure) 2007.

The REF for the upgrade of the levee systems aims to assess the environmental opportunities and issues relating to the proposal. The assessment is based on the concept designs.

The REF has several technical aspects including an ecological assessment, a noise and vibration assessment and a cultural and historic heritage assessment.

The REF development and exhibition process allows for community and stakeholder input. We are seeking your feedback before finalising the proposal. Council will engage with the community and stakeholders from the planning phase through to the final delivery of the project.

How can I find out more?

At www.wagga.nsw.gov.au/floodfutures you can review the designs for the proposal and find a broad range of information, videos and images related to Council's ongoing flood management.

What happens next?

Consultation with the community will be ongoing throughout the duration of the project. The feedback received from the community will be used to inform the review of environmental factors. In the coming months, Wagga Wagga City Council will undertake a series of consultation activities including:

- Meetings with interested groups and local Councils
- Liaison with government representatives
- Door knocking and letters to the local community
- Advertisements
- Further community information sessions
- Public exhibition of the review of environmental factors.

Council aims to contact property owners adjacent to the levee system either face to face or via telephone between the 15th November and the 13th of December.

Council will also be providing the opportunity for stakeholders, property owners, residents and proprietors to have one-on-one meetings with a Council Officer to speak specifically about the concept designs and/or the impact of flooding.

Further community information sessions will be held to support the public exhibition of the REF next year.

How can I provide input to the review of environmental factors?

If you have any further questions, or to provide feedback for consideration during the preparation of the review of environmental factors, please email Council using the email address leveeupgrade@wagga.nsw.gov.au or call 1300 292 442.



Higher levees a welcome surprise

July 15, 2012, 9:53 a.m.

A RECOMMENDATION on the levels of protection for the city and North Wagga levee banks has come as a surprise to North Wagga residents.

A report has been submitted to Wagga City Council's Infrastructure Services Standing Committee for review tomorrow night outlining the proposed heights.

But North Wagga residents were in the dark over the proposal yesterday, saying they had heard nothing about.

The council report recommends the main city levee be upgraded to the equivalent of a one-in-100-year average recurrence interval (ARI) flood event, or a 11.3 metre river height.

The main city levee currently has a protection level of one-in-60-year ARI.

It is proposed the North Wagga levee be upgraded from a one-in-17-year ARI to a one-in-20-year ARI, or a 10-metre river height.

North Wagga resident Geoff Conway said he had been aware council were trying to secure funding for the upgrade, but there had been no correspondence between council and the North Wagga Progress Association about the proposed height increases.

"From my own personal knowledge I only knew that both sides would be upgraded, but we (North Wagga) would not see the same protection as Wagga," Mr Conway said.

"I thought they (council) would have had to have something more concrete to get the funding, so hopefully this is the first foot on the ladder to put the project to the government for funds."

Regardless of a lapse in communication, Mr Conway said the recommendation would be welcomed by North Wagga residents.

Follow @dailyadvertiser

None

See your ad here

Wagga flood levee fears

Gumly levee 'not illegal'

By Ashleigh Gleeson

WAGGA City Council has quashed concerns that an illegal levee bank was constructed in the Gumly area before the March floods, causing damage to other areas.

Floodplain committee member and councillor Donna Argus confirmed that there had been speculation by community members about a private illegal levee being built in Gumly, along with an irrigation channel.

"Some people are concerned that this has impacted on water in their property, but I must stress these are only allegations," she said.

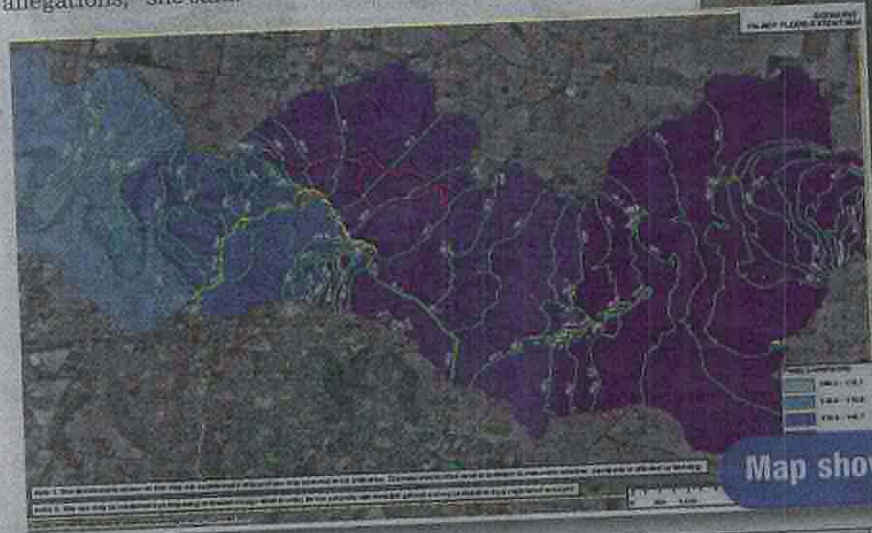
"It's scary for people when they don't know the facts so they just want to know."

Wagga City Council media and communications co-ordinator Nadine Crowley said council was aware of the levee in question and it was not illegal.

"The levee is not illegal and to council's knowledge, has not been raised illegally," she said.

"The levee has served as an important, recognised component of our flood mitigation infrastructure since being built by Kyeamba Shire Council in 1974.

"(Council) has reviewed its condition in the aftermath of each flood, the levee is not illegal."



Map shows what would happen if we were to receive a one in 100 year flood today.

QUESTIONS (above): Wagga City councillor



'Fears upgrade will cause other areas to flood Council rejects worries

FLOOD AFTERMATH: Noah's Ark Play Centre owner Denise Taylor said it was tough when her East Wagga business became completely flooded. She said they had to shut down for nine days to recover and they weren't covered by insurance. "It would be good to know what the impacts would be," she said. Picture: Addison Hamilton

By Ashleigh Gleeson

WAGGA City Council has rejected concerns that East Wagga, Gumly and Oura will be adversely affected if the levees in North and central Wagga are raised.

Concerns about the impact of increasing the levee height have been highlighted by Wagga City Councillor and floodplain committee member Donna Argus.

"I guess my main concern is when raising the levees, the water has to

go somewhere," she said.

"People in the community are concerned it could cause a different flood and different potential damage.

"That's why community consultation and clear, easy to understand information is so important so people don't make assumptions."

Wagga City Council's co-ordinator of media and communications Nadine Crowley said there would be no impact on these communities and that the latest data following the March floods had been calibrated

against existing flood modelling to show this.

"If the CBD and North Wagga levee banks are raised as per the concept that was agreed to by council on Tuesday night, there would be no different impact on Oura, Gumly and East Wagga until Wagga experienced a flood in the order of 1 in 100," she said. If the river exceeds 1 in 100 level - an event that has never occurred in recorded history - minor positive and negative impacts across the floodplain, which

includes the areas of Gumly, East Wagga and Oura will, be realised with an upgraded levee bank."

Ms Crowley also said this would be communicated to the community as the plans to raise the levees progress.

"The plan on how to best consult with the community about this information has been workshopped with councillors, and will be discussed with the Floodplain Management Committee before being referred to council for endorsement," she said.

\$1.1m floods in for levee studies

►WAGGA

MORE than \$1.1 million in state government funding has been allocated to Wagga City Council to help safeguard the city against future flood events.

Most of the money will go to the design of new levees in Wagga and North Wagga and about \$135,000 has been allocated for flood studies in Wagga, Tarcutta, Ladysmith and Uranquinty.

Member for Wagga Daryl Maguire said the funding was just the first step in the levee bank upgrade.

More will come following the completion of the design phase in about 12 months time.

"Council have been very active in partnership with the state government to obtain funding so they can complete their studies and apply for more funds to upgrade the banks," he said.

"This lets them get on with the job."

Council's director of infrastructure services, Heinz Kausche, said it was encouraging to receive the money given the high number of



PROTECTION: The state government is providing \$1.1 million to Wagga City Council to improve the levee banks, which were almost breached in the March floods.

applicants for funding.

"What's good about it all, the funding was very limited, it was very heavily over-subscribed, and we got everything we were hoping for," he said.

The state levee funding follows a rigid method of drip-feeding money over a number of years.

But council is hoping it can secure up-front money from the state - or any source, including the federal government - so it can begin the construction phase and

not wait on staged funding.

Mr Maguire has also been working with insurance companies to investigate community concerns about escalating premiums in the wake of the March floods.

He met with the Insurance Council of Australia in Sydney last week and said that a lack of co-ordination between the state government, councils and insurers was at the heart of the problem.

The main sticking point for the insurance companies

is the inconsistency in current flood mapping data, according to Mr Maguire.

"I've taken it upon myself to get to the bottom of the flood mapping issue and the central access for (the insurance companies)," he said.

"Having better access will help them manage their premiums better and will hopefully mean savings to the consumer."

About \$185,000 has also been allocated for flood studies in Lockhart, The Rock and Adelong.

Enc
CHA
estab
chron
has at
carric
nation
The n
chanc

Ge

EMPL
train
the re
specia
week-
better
retain

P

M
We all
is a p
costs
plan th
family
a time
provid
10 B
Phon

...ffu D...

Blake S
COTTAGE

Driver trapped after trucks crash

AN ACCIDENT involving two B-doubles near Wagga Hill yesterday played havoc with traffic and saw one driver trapped by a compressor. The accident happened on the Hume Highway, near the Wagga turn-off, just before 5pm, when a B-double smashed into the side of another B-double, causing the driver's legs to be trapped. Smoke reportedly entered the cabin. Emergency service personnel worked the nearly three hours to free the man. He was taken to Wagga Base Hospital with minor injuries.

COMMITTEE 4
 TRANSPORT INSURANCE SERVICES
 TRANSPORT & BUSINESS INSURANCE MADE EASY.
 (02) 6925 8788
A division of National Insurance Brokers Pty Ltd
 AFS Licence No. 234535 AB # 371084



- MEETING SCHEDULE**
- Gumly Hall, tonight, 6pm - 8pm
 - North Wagga Hall, November 29, 6pm - 8pm
 - Civic Centre Council Meeting Room, December 4, 6pm - 8pm
 - Oura Hall, December 6, 6pm - 8pm
 - Collingullie Hall, December 12, 6pm - 8pm

MEETINGS: Project manager of the levee upgrade Brad Jeffrey stands with Wagga City Council director of infrastructure services Heinz Kausche at the Murrumbidgee River yesterday.
 Picture: Michael Frogley

Upgrade planned for levees

► WAGGA

RESIDENTS will now have their say on the planned \$18.8 million upgrade of the North Wagga and Central Wagga levee.

At council's October meeting it accepted the latest funding announced by the state government as part of the Floodplain Management Program and resolved to contribute an additional \$561,000 as part of the funding conditions, further progressing plans.

Council will now start community consultation, with meetings scheduled at Gumly Hall, North Wagga Hall, Civic Centre, Oura Hall and Collingullie Hall throughout this month and next.

Project manager of the levee upgrade Brad Jeffrey said the community engagement component of the upgrade was

essential prior to construction, not currently expected to commence until 2014.

"The information gained from residents and stakeholders will help council develop ready to construct detailed designs," Mr Jeffrey said.

It is proposed to upgrade the height of the nine-kilometre levee system surrounding central Wagga to protect against an 11.3-metre river height.

Mr Jeffrey said the flood events of 2010 and 2012 were well and truly at the forefront of the Wagga community's mind.

"The aim of the levee systems protecting North Wagga and central Wagga is reducing the risk of flooding and to provide environmental, social and economic security for our community," he said.

Community consultation for the project is expected to be completed by April 2013.

M & V
2ND HAND

Races...

Committee 4 Wagga along with The Daily Advertiser are looking for entries from local photographers for the

mail au. This service is
isations. While
clude your
This
morning until noon in
Readers

ely
d
er
RT
rob-
re at
hind
read
ing.
ged
of
on
g a
1 a
om
ek
ry
ve
er
is
is
n
e
r
1
1
1



Levee work questioned

Residents fire up at meeting on upgrades

GUMBY residents didn't hold back on their concerns over proposed levee bank upgrades and flood proofing costs at a community information meeting held by Wagga City Council in the suburb yesterday.

Flowed by the project manager of the levee upgrade Brad Jeffrey and a panel of experts, the impacts that would result for East Wagga and Gumbly were spoken about to almost 100 people.

Gumbly councillor and former councillor and Gumbly resident Donna Angus received applause at the meeting when she got up and said council should listen to people who have been on the land for the generations and have first-hand experiences of floods.

"To be blunt and to put it frankly, you'd be foolish not to listen to what the local knowledge is telling you," she said.

WAGGA

By Annelise Gossett

QUESTIONS have been raised over whether there would be an increased flood risk while levee upgrades are under way in the Wagga Levee.

Upgrade concept design report there are talks of extending the upgrade work over a 10-year period.

"That's something that has been Hancock raising questions about when risk has not been at homes. During such a naturally long stretch of time.

"Until it is established in impacts of a 1-in-100-year flood occurring before or after levee is enhanced around North Wagga and the CBS McPherson Dam before 2:10m after levee upgrade 2:30m Gumbly before 1:10m after levee upgrade 1:40m East Wagga before 1:10m after levee upgrade 1:20m

my opinion it's like when building a dam wall, it takes a few years to settle down and be stable," Mr Hancock said.

But project manager of the levee upgrade Brad Jeffrey said Wagga City Council work would be conducted in a way where there were no increased risks to households during the construction stages.

"Different sections of the dam some will require different treatments and construction techniques as part of the upgrade," he said in a statement.

"These works will be undertaken in stages to ensure property is not put at risk during construction and to ensure that flood protection can be provided.

"The works will be constructed to today's engineering standards and will not require a settlement period

QUESTIONS: Lee Hancock has questioned the levee upgrade works. Picture: Addison Hamilton

GHD

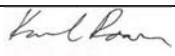
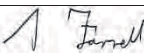


Suite 3, Level 1, 161-169 Baylis Street
Wagga Wagga NSW 2650
T: 61 2 6923 7400 F: 61 2 6971 9565 E: wgamail@ghd.com.au

© GHD 2013

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

G:\23\14536\WP\REF\73763 Wagga levee upgrade REF Rev1.docx

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	R. Robinson	K. Rosen		S. Farrell		12/12/2012
1	R. Robinson	K. Rosen		S. Farrell		07/08/2013

www.ghd.com

