

8. AUSTRALIA

8.1 Water Resources Management Policies and Actions

In Australia, an Intergovernmental Agreement for a National Water Initiative (NWI) was signed by the Australian Government, all state and territory governments to better manage Australia's scarce and valuable water resources in 2004. The NWI signifies the commitment among the Australian, state and territory governments to water reform, placing an emphasis on greater national compatibility in the way Australia measures, plans for, prices, and trades water, and a greater level of cooperation between governments.⁹² The NWI includes objectives, outcomes and agreed actions to be undertaken by governments across eight inter-related elements of water management, as listed below⁹³:

- water access entitlements and planning framework
- water markets and trading
- best practice water pricing
- integrated management of water for environmental and other public benefit outcomes
- urban water reform
- knowledge and capacity building
- community partnerships and adjustment

The National Water Commission (the Commission) is formed by several departments to implement the objectives stated in NWI. To provide the Commission with a baseline picture of a range of water management and resource issues for future comparisons, Australian Water Resources 2005 (AWR 2005) is prepared. AWR 2005 aims to define water resource knowledge gaps that are critical to the success of NWI measures.⁹⁴

A number of existing programmes could be modified to meet the needs and timeframes of AWR 2005, including⁹⁵:

- **Water Account, Australia, 2004–05:** uses datasets collected by the Australian Bureau of Statistics and the states and territories and synthesises them into a national database to provide a comprehensive, nationally comparable snapshot of Australia's water use. This project was fast-tracked through additional funding through AWR 2005.
- **Experimental Estimates of Regional Water Use, Australia, 2004–05:** provides details on water use information at a regional scale for selected water management areas across Australia. These data have been compiled through a modelling approach, where the actual enterprise types have been aggregated according to their industry and according to where they are spatially located.

⁹² Referenced to the National Water Commission (NWC) website,
http://www.water.gov.au/IntroductiontoAWR2005/TheNationalWaterInitiative/index.aspx?Menu=Level1_2_3

⁹³ Referenced to the National Water Commission (NWC) website,
<http://www.nwc.gov.au/nwi/index.cfm#objectives>

⁹⁴ Extracted from the National Water Commission (NWC) website,
http://www.water.gov.au/IntroductiontoAWR2005/index.aspx?Menu=Level1_2

⁹⁵ Extracted from the National Water Commission (NWC) website,
http://www.water.gov.au/WaterUse/index.aspx?Menu=Level1_5

- **Water Access Entitlements, Allocation and Trading, 2004–05:** presents data on the number of water access entitlements, the volume of water allocated to water access entitlements, and water trading in Australia in 2004-05.
- **Water Use on Australian Farms, 2004-05:** provides data on the volume of water used for irrigation by crop type and area at a state and territory and national scale.



SAT Basins During Filling⁹⁶



Source: "Managing Australia's Water Resources"⁹⁷

⁹⁶ Extracted from <http://www.nt.gov.au/nreta/environment/assessment/register/alicesprings/pdf/public.pdf>, page 72

⁹⁷ Extracted from <http://www.environment.gov.au/water/publications/action/pubs/aus-perspective-wrm.pdf>, page 32

8.2 Environmental Evaluation/SEA in Australia

In Australia, it is a statutory requirement under Part 10 section 146 of the Environment Protection and Biodiversity Conservation Act (EPBC Act, 1999) that an SEA-type process (underneath called “Strategic Assessment”) is required for policies, plans and programmes, triggered by agreement with the Federal Minister for the Environment (hereafter called “the Minister”).⁹⁸

A guideline on the EPBC Act was issued in May 2006⁹⁹ that assist persons to decide whether or not they should submit a referral to the Australian Government Department of the Environment and Heritage for a decision by the Australian Government Environment Minister on whether assessment and approval is required under the EPBC Act.

Under Part 3 of the EPBC Act¹⁰⁰, assessment and approvals are required for policies, plans and programmes that are likely to have a significant impact on (i) national environmental significance (ii) the environment of Commonwealth land (even if taken outside Commonwealth land) (iii) the environment anywhere in the world (if the action is undertaken by the Commonwealth). Thus, an agreement should be made between the Minister and the person responsible for adoption or implementation of such policy, plan or programme.¹⁰¹

Under the SEA-type framework stipulated in the EPBC Act, there are five types of assessment approach, which the Minister must choose one of them for assessing the relevant impacts of a policy, plan or programme, namely:

- assessment by an accredited assessment process
- assessment on preliminary documentation
- assessment by Public Environmental Report (PER)
- assessment by Environmental Impact Statement (EIS)
- assessment by public inquiry

Before making the decision of choosing the assessment approach, the Minister should consult the Minister of the State or Territory, consider information available about the relevant impacts of actions and the guidelines published which set out criteria for decision on approach used. Once the report of the assessment is given to the Minister, he or she must decide whether or not to approve the policy, plan or programme, and what conditions to attach to any approval.

⁹⁸ Strategic Environmental Assessment: A sourcebook and reference guide to international experience, Barry Dalal-Clayton and Barry Sadler, 2004, http://www.iied.org/Gov/spa/documents/SEAbok/Chapter3_Oct04.pdf, Ch. 3.3.1, page 49

⁹⁹ Full document of the guideline can be obtained from this link:

<http://www.environment.gov.au/epbc/publications/pubs/commonwealth-guidelines.pdf>

¹⁰⁰ Details can be found at

[http://www.comlaw.gov.au/ComLaw/legislation/actcompilation1.nsf/0/C8E992E70DE300F9CA2573050000E31C/\\$file/EnvProtBioDivCons99Vol1WD02.pdf](http://www.comlaw.gov.au/ComLaw/legislation/actcompilation1.nsf/0/C8E992E70DE300F9CA2573050000E31C/$file/EnvProtBioDivCons99Vol1WD02.pdf)

¹⁰¹ Details can be found at

[http://www.comlaw.gov.au/ComLaw/legislation/actcompilation1.nsf/0/C8E992E70DE300F9CA2573050000E31C/\\$file/EnvProtBioDivCons99Vol1WD02.pdf](http://www.comlaw.gov.au/ComLaw/legislation/actcompilation1.nsf/0/C8E992E70DE300F9CA2573050000E31C/$file/EnvProtBioDivCons99Vol1WD02.pdf), page 237

Under Part 8 of the EPBC Act, the Minister must prepare written guidelines for the content of a draft public environmental report (PER) and environmental impact statement (EIS) about the relevant impacts of the policy, plan and programme.¹⁰²

For the assessment on preliminary documentation which requires public consultation, the assessment report is a public document and is provided to the Minister as one component of the package of matters to be considered in making an approval decision.¹⁰³

Assessment by Accredited Process is where a State or Territory will manage the assessment, or the Commonwealth will do so under other legislation. This assessment approach allows appropriate case-by-case accreditation of State, Territory or Commonwealth assessment processes in situations where bilateral agreements and declarations do not apply.¹⁰⁴

For public inquiry, the Minister must appoint commissioners as a commission to conduct the inquiry and report to the Minister in relation to the policy, plan and programme. A commission must comply with the terms of reference in conducting its inquiry. A hearing held as part of an inquiry must be conducted in public.¹⁰⁵

The process flow chart for Strategic Assessment conducted in Australia is presented in **Exhibit AU-1**. Overall stages for Strategic Assessment conducted in Australia include:

Stage 1: Screening – the Minister decides whether assessment is required for the proposed project; and the level of assessment approval required.

Stage 2: Scoping – the Minister prepares written guidelines for the scope of the assessment.

Stage 3: Preparing the Environmental Assessment Report – the proponent prepares the report based on guidelines provided by the Minister and the comments raised during public consultation. Then Secretary prepares report for the Minister.

Stage 4: EA Review and Project Appraisal – The Minister seeks reviews of relevant Commonwealth Ministers.¹⁰⁶

¹⁰² EPBC Act,

[http://www.frli.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/ABBCB4F786833CAFCA257000000A5185/\\$file/EnvProtBioDivCons99Vol1WD02.pdf](http://www.frli.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/ABBCB4F786833CAFCA257000000A5185/$file/EnvProtBioDivCons99Vol1WD02.pdf), section 97, 101, originated from the web site of Australian Government Attorney-General's Department

¹⁰³ refer to web site of Department of the Environment and Heritage, Australia Government,

<http://www.deh.gov.au/epbc/assessmentsapprovals/assessments/onprelimdoc.html>

¹⁰⁴ refer to web site of Department of the Environment and Heritage, Australia Government,

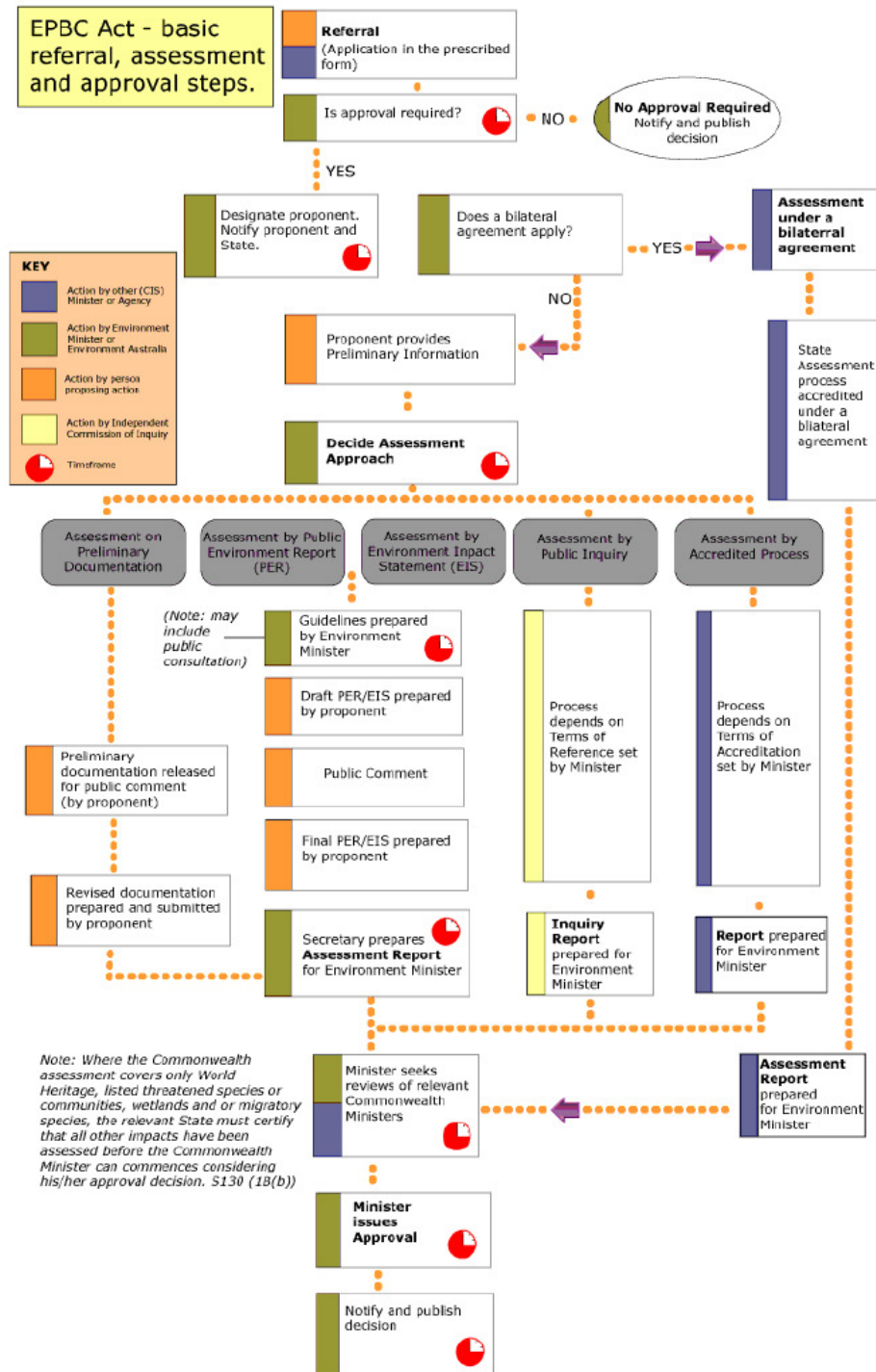
<http://www.deh.gov.au/epbc/publications/assessment.html>

¹⁰⁵[http://www.frli.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/ABBCB4F786833CAFCA257000000A5185/\\$file/EnvProtBioDivCons99Vol1WD02.pdf](http://www.frli.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/ABBCB4F786833CAFCA257000000A5185/$file/EnvProtBioDivCons99Vol1WD02.pdf), section 106-109, originated from the web site of Australian Government Attorney-General's Department

¹⁰⁶ EPBC Act,

[http://www.frli.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/ABBCB4F786833CAFCA257000000A5185/\\$file/EnvProtBioDivCons99Vol1WD02.pdf](http://www.frli.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/ABBCB4F786833CAFCA257000000A5185/$file/EnvProtBioDivCons99Vol1WD02.pdf), page 101, 122-123, originated from the web site of the Commonwealth of

Exhibit AU-1 Process flow chart for the overall process of Strategic Assessment¹⁰⁷



Australia Law

¹⁰⁷ Extracted from the web site of the Department of the Environment and Heritage, Australian Government, <http://www.deh.gov.au/epbc/assessmentsapprovals/flowchart.html>

8.3 Environmental Evaluation/SEA for Water Resources Management in Australia

SEA on Water Resources Management in Australia is also statutory under the EPBC Act. Under EPBC Act, the Australian Government consults with the relevant state and territory Ministers in relation to making a decision whether an action requires environmental assessment and approval. The Government may enter into assessment bilateral agreements which accredit the environmental assessment processes of a state or territory. For water infrastructure projects may be referred by proponents for consideration under the Commonwealth EPBC Act, depending on the nature of the project and its potential to impact on matters of national environmental significance such as wetlands of international importance.¹⁰⁸

Reference shall be made to Section 8.2 for details of the EPBC Act.

A summary table for the water resources management policies and actions and SEA status in Australia is presented in **Exhibit AU-2**.

Exhibit AU-2 Summary of Water Resources Management (WRM) Policies and Actions and SEA Status in Australia	
(a) WRM Policies and Actions	
WRM Policies and Actions	Policies: <ul style="list-style-type: none"> ● National Water Initiative Actions: <ul style="list-style-type: none"> ● Australian Water Resources 2005
Guidance/Legislations for WRM	N/A
(b) Environmental Evaluations / SEA Status in WRM Policies and Actions	
Type of Assessment	Strategic Assessment
Requirement Mechanisms	Statutory
Legislation for Environmental Evaluation / SEA	Environment Protection and Biodiversity Conservation Act
Applications	Policies, Plans and Programmes

¹⁰⁸ Extracted from "National Water Initiative Implementation Plan", <http://www.nwc.gov.au/nwi/docs/AG%20NWI%20Implementation%20Plan.pdf>, page 47-48

8.4 Analysis and Conclusions

WRM Policies

In Australia, since there are governments in different states and territories apart from the Australian Government, an inter-agreement has been prepared and signed among them to have a common consensus in how to manage their water resources. The agreement signifies the elements like, water reform, water pricing, water trading and so on.

Compared to Australia, Hong Kong's two main sources of water are from rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department's (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users' taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department's (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a *Total Water Management programme* comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was initiated for better utilization of the different water resources.

EE/SEA

Regarding SEA/EE requirements in Australia, it is a statutory requirement under Part 10 section 146 of the Environment Protection and Biodiversity Conservation Act (EPBC Act, 1999) that an SEA-type process, called "Strategic Assessment", is required for PPP which are WRM related.

Under the SEA-type framework stipulated in the EPBC Act, there are five types of assessment approach, which the Minister must choose one of them for assessing the relevant impacts of a policy, plan or programme, namely, an accredited assessment process, preliminary documentation, Public Environmental Report (PER), Environmental Impact Statement (EIS) and through public inquiry. Among them, EIS and PER are regarded as the SEA tools and others are environmental scrutiny.

Hong Kong's SEA/EE is under Environmental Protection Department's (EPD) jurisdiction. At present, there are both statutory and administrative systems for PPP projects. While the statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP.

Compared to Australia, similar scope of report categorisation depending on environmental significance would take into consideration for setting up within Hong Kong's SEA management framework.

8.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example AU-1 Alice Springs Water Reuse Scheme---Soil Aquifer Treatment and Horticulture Schemes¹⁰⁹	
Type of Study	Public Environment Report (PER), under Environmental Assessment Act 1994 ¹¹⁰
Description of Study	The Alice Springs Water Reuse Scheme aims to develop a water recycling scheme for the township of Alice Springs by making productive use of 1,200 to 1,800 ML (megalitres) of wastewater per year. The proposal covered under the scope of this PER is for infiltration of recycled water through the ground to an underlying aquifer, storage of this recycled water in the aquifer, later extraction of the recycled water and reuse of extracted recycled water for horticultural irrigation.
Summary of Alternatives	A number of sites were considered for the establishment of the Soil Aquifer Treatment (SAT) and horticultural schemes and four were considered at a detailed level. <ol style="list-style-type: none"> Site A: Arid Zone Research Institute (AZRI) Site B: Alice Springs Airport Site C: Owen Springs Site D: Brewer Estate Note: Exhibit AU-3 shows the overview of the project areas, which indicates the locations of Site A and B.
Scope of Assessment/ Study	During assessment of these studies and consultation with community members, a number of potential impacts have been identified for the proposed SAT and horticultural schemes. The potential impacts include: <ul style="list-style-type: none"> ● groundwater quality and height ● soil chemistry, particularly salinity and sodicity, and stability ● vegetation, fauna and habitats ● neighbouring residents, particularly in relation to rural amenity ● culturally significant places and objects ● human health in relation to reuse of recycled water ● regional economy, as a result of generation of a new industry area for the region and resultant increase in employment opportunities ● Ilparpa Swamp through cessation of dry weather overflows
Environmental Measures	The environmental measures considered in the study include: <ul style="list-style-type: none"> ● Reducing soil impacts, including erosion control, irrigation techniques, soil chemistry management ● Ensuring groundwater quality is not impacted, including monitoring of the quality of recycled water entering the infiltration basins and monitoring of the movement of the infiltrated water in the soil ● Minimising impacts on groundwater height, including SAT basin design and control of recycled water delivery rates to basins ● Minimising impacts on vegetation, habitat and fauna, including retention of environmentally significant trees and habitat areas, targeted surveys for conservation significant fauna and flora species prior to clearing and

¹⁰⁹ Full document can be obtained in

<http://www.nt.gov.au/nreta/environment/assessment/register/alicesprings/pdf/public.pdf>, page 14-16, 27, 40,

¹¹⁰ Details of the Act can be found in

<http://notes.nt.gov.au/dcm/legislat/legislat.nsf/d989974724db65b1482561cf0017cbd2/05b5e3fd7d2560d3692568a9082b637?OpenDocument>

Example AU-1 Alice Springs Water Reuse Scheme---Soil Aquifer Treatment and Horticulture Schemes¹⁰⁹	
	<p>enhancement of remaining vegetated areas</p> <ul style="list-style-type: none"> ● Minimising the impact on neighbouring properties through use of vegetated buffers, providing separation between access roads to the site and residents, controls on operations and inclusion of feedback mechanisms ● Protection of culturally significant places and objects through continued consultation with the Aboriginal Areas Protection Authority and custodians of the land, prior to any on-ground disturbance ● Mitigating against impacts on human health by providing tertiary treatment prior to entry into the groundwater, natural treatment of recycled water during infiltration through the soil and storage in the aquifer, monitoring of the quality of recycled water used for irrigation, controlling irrigation techniques and best practice use of chemicals during horticultural operations.
Outcome of Study	<p>The Site A Arid Zone Research Institute was selected as the preferred site for the project because:</p> <ul style="list-style-type: none"> ● The purpose of AZRI is for research and knowledge development, which has synergies with the proposed programme; ● AZRI already has horticultural expertise to support the scheme; ● Infrastructure, such as power, water and sewage, is already in place; ● Government ownership provides the flexibility to effectively manage recycled water use; and ● AZRI has established links with similar initiatives, such as the Desert Knowledge Precinct, the Bush Foods Industry and the Camel Industry.

Example AU-2 Murray-Darling Basin dry inflow contingency planning¹¹¹	
Description of Study¹¹²	This report is the second Murray-Darling Basin (MDB) Dry Inflow Overview Report to the First Ministers. Areas covered in this report has been extended dependent on tributary systems of the southern MDB, map of the areas has been shown in Exhibit AU-4 below.
Scope of Assessment/ Study	The following items had been investigated in this study: <ul style="list-style-type: none"> ● Water allocations ● Water availability and use ● Water quality
Outcome of Study	<p>The major finding of the report is the water situation has not changed significantly in the southern part of the MDB, and the focus area for contingency planning, since the April 2007 Contingency Planning Report (i.e. the first Overview Report). That means it should continue this contingency planning. ¹¹³</p> <p>In the report, it has set out the coming targets for the following items in southern MDB areas: ¹¹⁴</p> <ul style="list-style-type: none"> ● Water allocations <ul style="list-style-type: none"> ➢ during the irrigation season, there will be sufficient reserves in storage at the end of May 2008 through forecasting method. ● Water availability and use <ul style="list-style-type: none"> ➢ the water available to each state for core critical demand along the Murray system in 2007 – 2008 was recommended in April 2007 to be approximately 141 GL for South Australia, about 75 GL for New South Wales (NSW) and about 53 GL for Victoria. ➢ the water to meet critical demand generally refers to fully restricted urban demand (no outdoor use) and fully restricted ‘domestic and stock’ use. ➢ two contingency planning and measures will be implemented: (i) Town-by-town contingency planning – towns in Victoria, NSW and South Australia have been selected and should follow the “no outdoor use” restriction, i.e. all outside water use for domestic purposes and dependent on southern MDB supplies, from 1 July 2007. (ii) Implementation of contingency measures – contingency water saving measures are being implemented across the Basin. The disconnection of wetlands is the most immediate and effective measure that can be implemented to achieve water savings in 2007-08 as it saves on evaporative losses. ● Water quality <ul style="list-style-type: none"> ➢ the present main focus would be the risk of higher salinities occurring in lower reaches of the River Murray. Alternative drinking water supplies have been made available to towns surrounding the Lower Lakes of the River Murray.

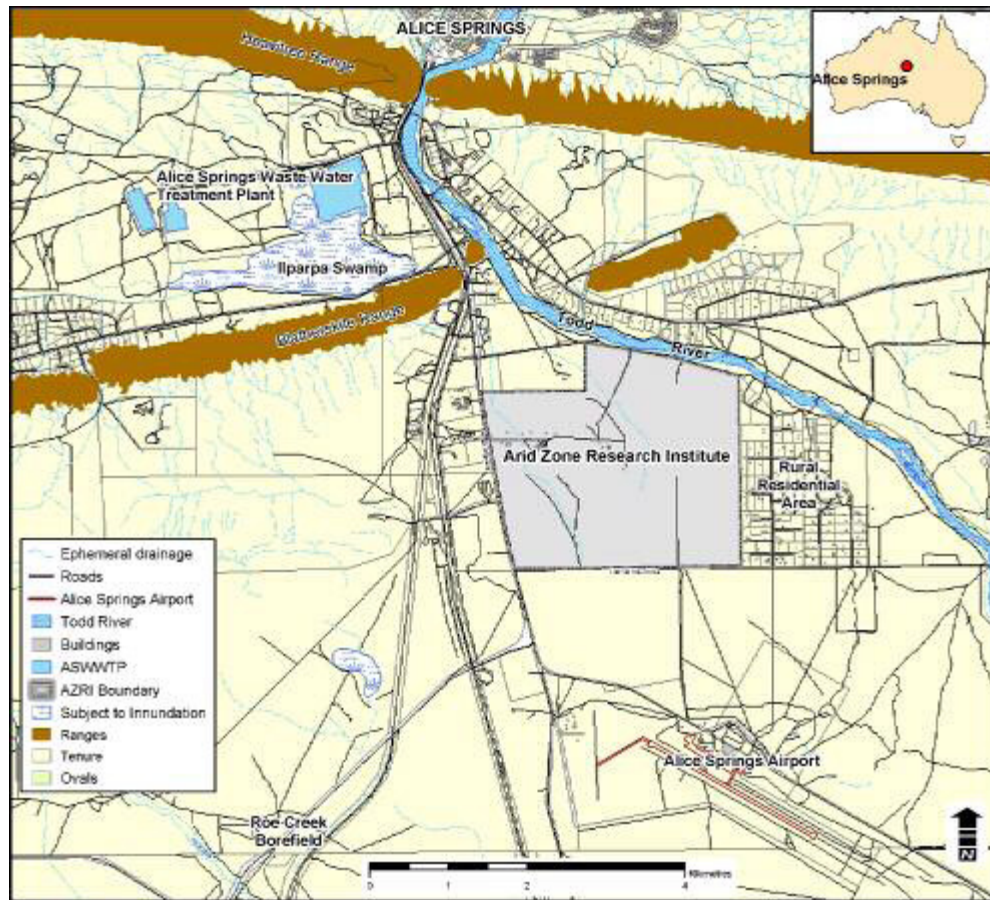
¹¹¹ Full documents of the Murray-Darling Basin dry inflow contingency planning can be obtained in <http://www.environment.gov.au/water/publications/mdb/dry-inflow-planning-may07.html>

¹¹² Extracted from “Murray-Darling Basin Dry Inflow Contingency Planning – Overview Report to First Ministers”, <http://www.environment.gov.au/water/publications/mdb/pubs/dry-inflow-planning-may07.pdf>

¹¹³ Extracted from the webpage of the Murray-Darling Basin dry inflow contingency planning

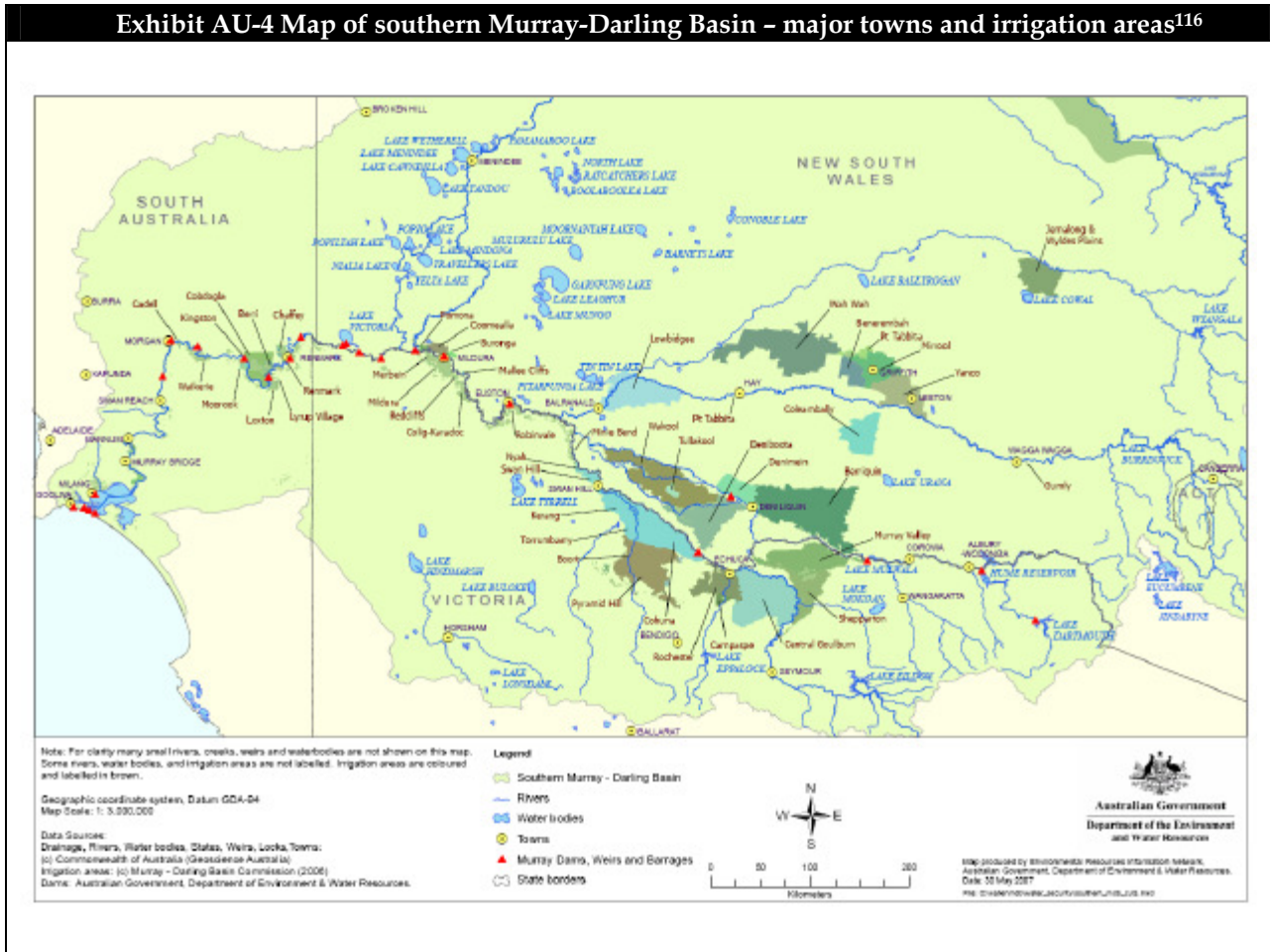
¹¹⁴ Extracted from “Murray-Darling Basin Dry Inflow Contingency Planning – Overview Report to First Ministers”, <http://www.environment.gov.au/water/publications/mdb/pubs/dry-inflow-planning-may07.pdf>, page 5-7, 13 of 16

Exhibit AU-3 Overview of the project area¹¹⁵



¹¹⁵ Extracted from <http://www.nt.gov.au/nreta/environment/assessment/register/alicesprings/pdf/public.pdf>, Page 24

Exhibit AU-4 Map of southern Murray-Darling Basin – major towns and irrigation areas¹¹⁶



¹¹⁶ Extracted from “Murray-Darling Basin Dry Inflow Contingency Planning – Overview Report to First Ministers”, <http://www.environment.gov.au/water/publications/mdb/pubs/dry-inflow-planning-may07.pdf>, Page 2 of 16