Expert Evidence to the Environmental Defenders Office, re Draft Western Davenport Water Allocation Plan 2023-2033 from Professor Alex Gardner

Contents

Instructions

I have been asked to provide expert evidence for the benefit of your client, the Arid Lands Environment Centre (ALEC), regarding the draft Western Davenport Water Allocation Plan 2023-2033 (Draft WAP). ALEC is concerned about the regulation of water resources in the Northern Territory (NT), especially with respect to the protection and preservation of environmental values.

I acknowledge the helpful brief provided to me by letter dated 28 April 2023. I understand that my expert evidence must conform to the Northern Territory Supreme Court *Practice Direction No 6 of 2015: Expert Reports*, including the *Expert Witness Code of Conduct*. I have read the Code of Conduct and the evidence set out here has been prepared to conform with the Code.

The Questions

The questions on which I have been asked to present my expert opinions are:

i. to what extent does the **Draft WAP** (either by itself, or in combination with the Draft Background Report and Draft Implementation Actions) comply with the NT Government's commitments under the National Water Initiative (NWI) with respect to water plans and the water planning process;
ii. to what extent do the provisions of the ***Water Act 1992*** **(NT)** (***Water Act***) pertaining to water allocation plans comply with the NT Government's commitments under the NWI with respect to water plans and water planning processes; and
iii. to what extent does the **approach taken to water planning regulation** in (a) the Draft WAP (either by itself, or in combination with the Draft Background Report and Draft Implementation Actions), and (b) the provisions of the *Water Act* concerning water allocation plans, conform with best practice in water resources regulation;
iv. any further observations or opinions that I consider to be relevant and within my expertise.

In addressing questions (i) - (iii) above, I take the following steps:

1. identify the relevant NWI objectives and the NT Government's NWI commitments, and
2. give my reasoned opinions in response to the questions [in reverse order]:
   a. to what extent the *Water Act* provisions pertaining to water allocation plans comply with the NT Government's NWI commitments, and
   b. to what extent the Draft WAP (either by itself, or in combination with the Draft Background Report and Draft Implementation Actions) complies with the NT Government's NWI commitments; and
3. integrate with 2 (a) and (b), as feasible, comments about the extent to which the NT approach to water planning regulation conforms with best practice in water resources planning regulation.

In presenting my evidence, I assume that the reader has a knowledge of or access to the Draft WAP, and the associated documents – being the Draft Background Report and Draft Implementation Plan, as well as the Northern Territory Water Allocation Planning Framework (v 1.1, 6 May 2020) and the Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District (13 February 2020). I will refer to relevant parts of these documents while addressing the questions posed for my opinion. I have not reviewed any earlier documentation relating to water resources management of the Western Davenport Water Control District, such as the 2011, 2018 and 2021 water allocation plans.

In the time available to me, I have focused on three core issues in water allocation planning:

- Consumptive pool licence allocations,
- Environmental water provisions, and
- Monitoring and reporting for environmental and consumptive pool water use.

Expert Evidence from Professor Alex Gardner, 14 May 2023
Draft Western Davenport Water Allocation Plan 2023-2033

Summary of my opinions on the questions.

i. The Draft WAP, both alone and in combination with the Draft Background Report and the Draft Implementation Actions, does not comply with the NT Governments NWI commitments in that:
   - it does not truly provide for consumptive pool share entitlements as understood from the general NWI context because it provides only for a static volume in the Estimated Sustainable Yield;
   - It does not provide adequately for secure environmental outcomes because it relies on the incorporation of an external document (Guideline) that is difficult to understand and displays uncertain legal status;
   - It does not conform with the commitments to the format or content (including monitoring) of water planning,

ii. The *Water Act* does not comply with the NT Government's NWI commitments in that:
   - it does not provide for consumptive pool share entitlements as understood from the general NWI context because it does not provide a statutory basis for periodic allocations of water to share entitlements according to water availability,
   - It does not provide for making a plan allocation of water to non-consumptive cultural beneficial uses, even though this appears to be done in practice, and does not authorise the form in which the acceptable limits of acceptable change on GDEs is defined,
   - It does not provide for adequately for the consultation procedures, content and legal effect making a water allocation plan, addressing only in the simplest of terms the Minister's authority to make a plan and the essential content of a plan,

iii. The *Water Act* and Draft WAP fall short of best practice in water resources regulation in that:
   a) the NT Government rejects the NWI principle that water access entitlements may be granted for environmental water provisions and traded temporarily when the water is not needed for environmental purposes, but it is arguable that this institutional reform could assist the NT in protecting GDEs in the arid conditions of the Western Davenport Water Control District.
   b) the *Water Act* employs an outdated anthropocentric definition of 'environment', which may affect the credibility of the determination of the Estimated Sustainable Yield, and
   c) they do not conform with best practice in the legislative definition for the process, content and legal effect of a water allocation plan.

I include a further observation of licence conditions in my conclusions.

Expert Qualifications

I have legal academic and practice expertise and experience that demonstrate my qualifications to prepare this report.

- I have 34 years of experience as a legal academic in the field of natural resources and environmental law, having held a teaching and research appointment at the University of Western Australia Law School since 1988, and adjunct teaching positions at the Australian National University College of Law (2001-2017) and the University of Queensland School of Law (2011-2014) for the purpose of teaching postgraduate classes in Water Resources Law.
- I have published numerous articles on water resources law, including on environmental water provisions, and am the lead author of *Water Resources Law*, LexisNexis Au, 2nd edition 2018. A key theme of the *Water Resources Law* book is how Australian water resources legislation implements the NWI.
- I have held a legal practice certificate in Western Australia since 1994, providing natural resources and environmental legal advice in the public interest, to private parties and to agencies of the Western Australian and Commonwealth Governments.

1. Key NWI objectives and the NT Government's NWI commitments in response

The Northern Territory Implementation Plan for the Intergovernmental Agreement on a National Water Initiative, June 2006, is an extensive document. I have been asked to address those parts of it that pertain to the NT's commitments relevant to water allocation planning, especially for the protection and preservation of environmental values. The NT's NWI commitments are made in response to key NWI objectives summarised here.

1.1. The objectives for the implementation of the NWI

Paragraph [23] of the NWI states the objectives, which are as follows (with presently irrelevant exclusions).

23. Full implementation of this Agreement will result in a nationally-compatible, market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes by achieving the following:

    i) clear and nationally-compatible characteristics for secure *water access entitlements*;

    ii) transparent, statutory-based water planning;

    iii) statutory provision for *environmental and other public benefit outcomes*, and improved environmental management practices;

    iv) complete the return of all currently overallocated or overused systems to *environmentally-sustainable levels of extraction*;

    ~~v) progressive removal of barriers to trade in water and meeting other requirements to facilitate the broadening and deepening of the water market, with an open trading market to be in place;~~

    vi) clarity around the assignment of risk arising from future changes in the availability of water for the *consumptive pool*;

    vii) water accounting which is able to meet the information needs of different water systems in respect to planning, monitoring, trading, environmental management and on-farm management;

    ~~viii) policy settings which facilitate water use efficiency and innovation in urban and rural areas;~~

    ~~ix) addressing future adjustment issues that may impact on water users and communities; and~~

    x) recognition of the connectivity between surface and groundwater resources and connected systems managed as a single resource.

The NWI paragraph [24] describes the 'key elements' of the NWI that present the principles for giving effect to these objectives.

1.2. The NT's NWI Commitments in responses to key NWI elements on water planning

The NT accepts these objectives in the NWI Implementation Plan. It states that the NT does not have over-allocated river systems or groundwater resources but that it will provide an annual public audit of the level of allocation in all river and groundwater systems.[1] However, the NT's NWI Implementation Plan does give numerous responses and commitments to the key elements. I have

[1] Northern Territory Government, NWI Implementation Plan 2006, p.15.

been asked to address the NT's commitments in relation to a selection of these NWI elements; namely -

- water access entitlements and planning framework – paragraphs [25]-[57], especially [28]-[29] and [35]-[40], which incorporate the Schedule E guidelines for water plans and planning processes;
- integrated management of environmental water – especially paragraphs [78]-[79];
- community partnerships and adjustment – paragraphs [93]-[97]; and
- Schedule A Timeline for implementation of key actions, which is mostly redundant now except for providing a checklist of what may be incomplete or ongoing actions.

In the time available to me, I could consider only the first two of these four points.

2. Analysis of the NT's NWI responses

The NT's NWI commitments are set out in relation to the relevant elements of the NWI. In respect of each element, I summarise the relevant NWI principles and the NT's responses and commitments to them. I then analyse the NT's compliance with its NWI commitments through the *Water Act* and the Draft WAP, first in relation to the NWI principles regarding water access entitlements and the planning framework, and then in relation to integrated management of environmental water.

2.1. Water Access Entitlements and Planning Framework

The NWI principles here can be described as addressing the concepts of water access entitlements as shares in a consumptive pool; provisions for environmental and other public benefit outcomes; and principles for water planning, especially as to water resources monitoring.

2.1.1. Water access entitlements as shares in a consumptive pool

The essential principles to be derived from the NWI [28]-[29] are:

28. *The consumptive use of water will require a water access entitlement, separate from land, to be described as a perpetual or open-ended share of the consumptive pool of a specified water resource, as determined by the relevant water plan;*
29. *The allocation of water to a water access entitlement will be made consistently with a water plan; …*

The NT's NWI response and commitment in respect of these principles was to acknowledge that it partially met these principles and would conduct consultation to propose law reform to meet the NWI requirements by December 2006 and implement consumptive pool management in water access entitlements and in water allocation plans on an ongoing basis.[2]

The Productivity Commission reported in 2021 that the NT has not enacted legislation to create secure, NWI-consistent water access entitlements for consumptive use, though it had made progress in 2017 by removing the exemption from the entitlements framework for the minerals and petroleum industries.[3] Although the NT says that it issues water access entitlements 'for specified upper limit volumetric share of the consumptive pool of a specified water resource' in a water allocation plan,[4] my opinion from reading the *Water Act* s.22B and the Draft WAP is that the NT is not applying consumptive pool share entitlements, as that concept is generally understood. There is no doubt that the geographical and climate circumstances of the Western Davenport Water Control District are vastly different from those in the Murray Darling Basin jurisdictions of south-east

[2] Ibid, pp.16-19.
[3] Australian Government, Productivity Commission, *Assessment of National Water Initiative Implementation Progress (2017-2020)*, 2021, pp.3, 11 and 14.
[4] Northern Territory Government, NWI Implementation Plan 2006, p.18.

Australia, where the concept was developed. However, it is arguable that the present law and practices could be adapted to apply the concept more fully.

Gardner et al, *Water Resources Law*, 2nd ed'n, at [16.65] [minus footnotes] explain the concept of 'consumptive pool' as conveyed by the NWI generally.

> The NWI defines 'consumptive pool' as 'the amount of water resource that can be made available for *consumptive use* in a given water system under the rules of the relevant water plan'. It defines 'consumptive use' as the 'use of water for private benefit consumptive purposes including irrigation, industry, urban and stock and domestic use'. Read together, these definitions suggest that all water in a defined water system that is not allocated by a plan to 'environmental and other public benefit outcomes' would form the consumptive pool.
>
> However, these definitions need to be understood in the broader context of the NWI. For example, a water access entitlement is defined as a share of the consumptive pool and water plans are supposed to provide for resource security outcomes by determining the shares in the consumptive pool. The NWI also acknowledges that, in some cases, a statutory right to extract water may be an appropriate exception to the system of access entitlements based on shares in a consumptive pool. Further, the NWI treatment of 'interceptions' from the exercise of basic rights [e.g. stock and domestic rights] and land use manifests a policy of planning and regulating them at levels that reflect the increases in the significance of those water uses and the pressures on allocation levels. Thus, the exercise of statutory basic rights may need to be licensed to record the level of use and threshold limits may need to be set for when such activities require the authorisation of water access entitlements. If water access entitlements are issued for stock and domestic use, such uses will receive allocations from the consumptive pool, usually on a seasonal basis. Further, water allocated to the environment under water access entitlements would also be part of the consumptive pool. In summary, therefore, a consumptive pool identifies the water that is available for allocation to water access entitlements, including possibly stock and domestic and environmental entitlements. Normally, the volume of the consumptive pool will be ascertained after water has been allocated to the environment under plan rules and to the exercise of statutory basic rights.

The key steps in consumptive pool management are that water access entitlements are defined as shares in the consumptive pool and periodically, annually for surface water resources or perhaps every 2-3 years with slower moving groundwater resources, a proportional allocation is made to each share entitlement in accordance with the plan provisions that determine the volume of water available for the consumptive pool.

The *Water Act* s.22B is the only provision about "Water allocation plans". It provides no guidance on the implementation of consumptive pool share entitlements. The relevant provisions are subsection (5) and (6):

> (5) The water allocation plans for a water control district are to ensure that:
>
> (a) water is allocated within the estimated sustainable yield to beneficial uses;
>
> (b) the total water use for all beneficial uses (including those provided through rural stock and domestic use and licences granted under sections 45 and 60) is less than the sum of the allocations to each beneficial use; …
>
> (6) An allocation under subsection (5)(a) is to include an allocation to the environment.

There is no statutory provision for periodic allocations to be made to share entitlements in accordance with a plan after determination of the volume of water currently available for the consumptive pool.

The Draft WAP does not change this situation. The Draft WAP sections 3.4 and 3.5 determine, respectively, the 'Estimated Sustainable Yield' (**ESY**) and the 'Groundwater beneficial uses' as single static figures for the discrete areas of the water district. The Draft Background Report, section 3, explains that the ESY is determined by a careful and conservative process of evaluating climate and hydrogeological factors that explain the infrequent recharge events (those in excess of 50, 100, 150 and 200 mm) over the decades since 1901, showing that there have been only three significant recharge events in the past 50 years, occurring in 1975-76, 2000-2001, and 2010-2011. Although climate change is increasing the rainfall, the essentially arid environment, high levels of salinity in the groundwater and limited recharge locations means that a high value is placed on groundwater storage rather than groundwater recharge in determining the ESY in section 6, especially 6.1.2.2. While it is "understood that recharge occurs infrequently and there may be years and decades between recharge events, … water resources management occurs in 12 months periods, and as such the significant recharge events recorded through historical monitoring are averaged to derive the annualised recharge presented in Figure 17 …". It is declared that the ESY represents 3% of the natural water balance presented over 100 years, and this is considered appropriate for the ten years of the plan while ongoing monitoring will measure water levels that correlate to groundwater storage volumes.

Although the Minister must ensure that a review of a plan is conducted every five years, and could make a new plan to respond to such a review,[5] this involves a adjusting expectations through a more involved process than an intrinsically designed periodic allocation to share entitlements based on an assessment of water available in the consumptive pool.

The NT approach to determining a static consumptive pool for the life of the plan has implications for the provisions for environmental and other public benefit outcomes because it is harder to reduce consumptive use when there is reduced water availability.

2.1.2. Provisions for Environmental and other Public Benefit Outcomes

The essential principles to be derived from the NWI [35] are paraphrased here.

- Statutory water plans will provide water to meet agreed *environmental and other public benefit outcomes* that:
  - have statutory recognition for the same degree of security as water access entitlements for consumptive use and be fully accounted for,
  - water management arrangements required to meet the outcomes sought, including water held on a rules basis or held as a water access entitlement, and
  - if held as a water access entitlement, may be available to trade on the temporary market when not required to meet the environmental and other public benefit outcomes.

The NT's NWI response[6] was to explain that the *Water Act* required water to be allocated within the "estimated sustainable yield of the relevant water resources to both non-consumptive and consumptive uses" and an environmental allocation is required, but that statutory amendment was required to include non-consumptive cultural beneficial uses. The *Water Act* currently provides that the environment is a 'beneficial use of water' in a water control district; that water allocation plans for a water control district are to ensure that "water is allocated within the estimated sustainable use to beneficial uses"; and that such "an allocation […] is to include an allocation to the

[5] *Water Act* s.22B(1) and (3).
[6] Northern Territory Government, NWI Implementation Plan 2006, p.21.

environment".[7] There seems still to be no express provision to provide for 'non-consumptive cultural beneficial uses', though it does appear that this is done in practice.

The NT's NWI response to the third point above (that water access entitlements may be issued for environmental or other public benefit outcomes, and that they may be temporarily tradable), is that is illogical to provide for water access entitlements in the consumptive pool for non-consumptive environmental and other public benefit uses.[8] With respect, it will be suggested below that such an allocation could be helpful in the water resources circumstances of the Draft WAP.

The Draft Background Report, section 4, explains the high prevalence of groundwater dependent ecosystems (**GDEs**) and their dependence on groundwater storage: "[l]osing access to water has the potential to have greater impact on groundwater dependent ecosystems than other ecosystems".

The response to this challenge is the "Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District" (13 February 2020). I found this document difficult to understand. It cites propositions from the 2018-2021 Western Davenport Water Allocation Plan about modelled groundwater drawdown because of extractions, that may no longer be applicable. It presents data from recent studies about the significance of a depth to ground water (**DGW**) threshold of < 10m in relation to the management of GDEs, with 10-15 m DGW being significant for two species of large trees. In the face of limited scientific evidence, the Guideline then says that the Department has determined that "70% of the current extent of GDEs in the Western Davenport Water Control District should be protected from negative impact", which is further defined by reference to criteria designed to minimise impacts on GDEs with high ecological values. The 70% threshold applies within each major landform and within each property in the Water Control District. Further criteria purport to guide modelling of groundwater drawdown extent and rates that portend negative impacts on GDEs.

This Guideline is incorporated into the Draft WAP section 4.1 as the definition of "Limits of acceptable change" to maintain desired outcomes for GDEs; one of two propositions that appear designed to protect environmental values. The first proposition in Section 4.3 provides that water licences cannot be granted or amended if to do so would exceed the amount of water allocated to a water management zone for a beneficial use under section 3 of the plan. This rule is clearly expressed in the Draft WAP. However, the second proposition in Section 4.4 provides:

> "Licence holders and licence applicants must demonstrate that water taken or proposed to be taken under a groundwater extraction licence:
> **(a)** will not result in a change to the groundwater level that exceeds the applicable limits of acceptable change for groundwater dependent ecosystems in the district
> **(b)** is consistent with any guidelines published by the department from time to time related to limits of acceptable change." [emphasis added]

A footnote to (b) refers to the 2020 Guideline as an example of the guideline in force at the time the plan is made.

I see three problems with section 4.4. First, paragraphs (a) and (b) seem to be a reference to the same proposition, except that (a) makes no sense without the reference in (b). Secondly, as indicated above, I find the Guideline difficult to interpret and as aimed at guiding licensees in some form of assessment rather than setting clear criteria for protection of the GDEs that appear already to have been mapped.[9] Thirdly, I can see no authority in the *Water Act* for a water allocation plan to refer to an external document prepared from time to time by the Department to determine an

[7] *Water Act 1992* (NT) ss.22A(2)(a), 22B(5)(a) and (6).
[8] Northern Territory Government, NWI Implementation Plan 2006, p.21.
[9] Draft Background Report, section 4.1.1.

important plan limit defining the environmental water provision.[10] There is no reference to 'guideline' in the *Water Act*. The *Water Act* s.22B gives the Minister the power to declare a water allocation plan and it is arguable that this term of the Draft WAP incorporating another document that can be made from time to time by another person is outside the authority of the Water Act. It would be consistent with the Act to incorporate directly into the Draft WAP the propositions that that determine an acceptable impact on the mapped GDEs, and to include a map of the GDEs with the plan, rather than relying on a vague reference in the Guideline to protecting a proportion of the malleable description of 'the current extent of GDEs'. This issue is also relevant to the Principles of Water Planning discussed below.

Before turning to those principles, I note that the *Water Act* employs a definition of "environment" that is commonly regarded as redundant in contemporary Australian environmental law, and this definition may affect the determination of the ESY and limits of acceptable change. The Draft Background Report, section 6.1.1. at p.39, refers to the *Water Act* s.4 definition of 'environment':

> ***environment*** means all aspects of the surroundings of humans, including the physical, biological, economic, cultural and social aspects. [emphasis added]

The Draft Background Report goes on to say: "hence … an estimate of sustainable yield that maintains environmental integrity therefore involves consideration of these aspects". Contemporary definitions of 'environment' are not exclusively anthropocentric. The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) s.528 provides:

> ***"environment"*** includes:
>
> (a) ecosystems and their constituent parts, including people and communities; and
>
> (b) natural and physical resources; and
>
> (c) the qualities and characteristics of locations, places and areas; and
>
> (d) heritage values of places; and
>
> (e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).

The Draft Background Report also refers at section 6.1.1. to the Territory's commitment to the NWI, "which defines 'environmentally sustainable level of extraction' to mean '– the level of water extraction from a particular system which, if exceeded would compromise key environmental assets, or ecosystem functions and the productive base of the resource. The credibility of the ESY process may be enhanced if these more contemporary concepts were included in the *Water Act*. The definition of 'environmentally sustainable level of take' for a water resource included in the *Water Act 2007* (Cth) s.4 provides an enhanced example of this definition.

2.1.3. Principles for Water Planning

The essential principles to be derived from the NWI [36]-[40] are paraphrased here.

- Water planning involves trade-offs informed by best available science, socio-economic analysis and community input, and statutory water plans are important mechanisms to assist governments and communities to make water management and allocation decisions.
- Water planning will provide for 'secure ecological outcomes' be defining appropriate water management arrangements and 'resource security outcomes' by determining shares in the consumptive pool and rules to allocate water during the life of the plan.
- The relevant State or Territory will determine when a plan is prepared and its core content, duration and frequency of review, and will prepare water plans 'along the lines' of Schedule

[10] See, for example, *Re Lawrence; Ex parte Goldbar Holdings Pty Ltd* (1994) 11 WAR 549 and *Buzzacott v Minister for Sustainability, Environment, Water, Population and Communities* [2013] FCAFC 111; (2013) 215 FCR 301; HN & at [130]-[225], esp at [188].

E, which identifies key characteristics to guide the planning processes (e.g. consultation, knowledge bases, and planning contexts) and content of water plans:

i. the water source or water sources covered by the plan (ie. its geographic or physical extent);
ii. the current health and condition of the system;
iii. the risks that could affect the size of the water resource and the allocation of water for consumptive use under the plan, in particular the impact of natural events such as climate change and land use change, or limitations to the state of knowledge underpinning estimates of the resource;
iv. the overall objectives of water allocation policies;
v. the knowledge base upon which decisions about allocations and requirements for the environment are being made, and an indication of how this base is to be improved during the course of the plan;
vi. the uses and users of the water including consideration of indigenous water use;
vii. the environmental and other public benefit outcomes proposed during the life of the plan, and the water management arrangements required to meet those outcomes;
viii. the estimated reliability of the water access entitlement and rules on how the consumptive pool is to be dispersed between the different categories of entitlements within the plan;
ix. the rates, times and circumstances under which water may be taken from the water sources in the area, or the quantity of water that may be taken from the water sources in the area or delivered through the area; and
x. conditions to which entitlements and approvals having effect within the area covered by the plan are to be subject, including monitoring and reporting requirements, minimising impacts on third parties and the environment, and complying with site-use conditions.

- In implementing water plans, Parties will monitor the performance of the water plan (objectives, outcomes and management arrangements), factor in knowledge improvements, and provide regular public reports to help water users and governments manage risk, with timely indications of possible changes to the consumptive pool.

At the time of the NT's NWI Implementation Plan 2006, the NT was in the early stages of water resource planning. The NT's NWI response[11] was to endorse the above principles, assert that water allocation plans incorporate strategic monitoring and knowledge improvement work programs that are reviewed in annual progress reports by Water Advisory Committees and that such reports would be made public and account for performance against the NWI principles.

It is not possible to comment in detail on the *Water Act* and the Draft WAP conform to the NWI planning principles. I comment on the three underlined passages in the above NWI extracts. First, statutory water plans are important for governments and communities making water management and allocation decisions. So far as I am aware, the *Water Act* NT is the only water resources management legislation in Australia that makes no statutory provision for the procedures (e.g. of consultation) for making a water allocation plan. In my opinion, the *Water Act* does not conform with its NWI commitment and best practice in the regulation of this important process.

Secondly, it is apparent that the new format of the Draft WAP with a separate Background Report and Implementation Actions Report does not conform to the NWI guidance in Schedule E. While it is understandable that the NT Government wishes to confine the content of the Draft WAP to those aspects of a water allocation plan that are to be given legal effect under the *Water Act*, in my opinion the model adopted in the Draft WAP has omitted important content, as indicated above in relation to environmental water provisions. The Draft WAP also lacks enough reference to items ii, iii (including the potential impacts of extreme heat events such as in 2019), viii, ix and x. From

[11] Ibid pp.23-24, Key Action 2.4

reviewing on the Water Licensing Portal the Water Extraction Licensing Decision for AFM Central Australia Pty Ltd in respect of Licence No. WDP5006 (2021-2028) over land at Ali Curung in the Western Davenport Water District, my opinion is that too much of the important decision-making on the limits of water licence abstraction of groundwater is left to be determined in the water licensing assessment process.

Thirdly, in implementing water plans, Parties will monitor the performance of the water plan and provide regular public reports with timely indications of possible changes to the consumptive pool. While the Draft Implementation Actions Report contains much good information in this regard, it is a cause for concern that there is no reference in the Draft WAP to monitoring of the performance of the plan. The Draft WAP says in Overview at p.5 that the Implementation Actions detail how the *Water Act* s.34 provisions for ongoing water resources assessment will apply to the water resources in the water district. With respect, s.34 is too general to provide monitoring and reporting duties in respect of the implementation of the specific water allocation plan. The Water Act s.22B provides "Water resource management in a water control district is to be in accordance with any water allocation plan declared in respect of the district". In my opinion, the provisions for monitoring, reporting and amending a water allocation plan need to be included in the water allocation plan to take the benefit of s.22B(4). While the Draft WAP Overview at p.5 makes reference to the Draft Background Report and the Draft Implementation Actions Report, it also makes clear that it is only the Draft WAP that is declared by the Minister under s.22B(1) of the *Water Act*.

The current provisions of the Draft Implementation Actions for the monitoring and adaptation responses also fails to impose clear limits on ground water extraction for the protection of the environment. For example, Schedule G, Risk Assessment and Management Strategies, presents a table that includes "Groundwater levels decline more than acceptable levels", attributable to "lack of rainfall and recharge – drought and climate change impacts", with "regional loss of GDE health more than acceptable levels". The relevant adaptive management strategies and actions express no limits on or adjustments to water extraction. Significantly, there is no reference to Management Strategy 4.1.5 "Refining limits to change criteria based on actual water requirements to GDEs, monitoring GDE health as water use increases across the area, and publishing updated limits to change Guideline".

Finally, the *Water Act* also contains a concerning ambiguity in the expression of the legal effect of a water allocation plan. Section 22B(4) provides: "Water resource management in a water control district is to be in accordance with any water allocation plan declared in respect of the district". 'Water resource management' is not defined in the *Water Act* but usage of the term in the three planning documents makes clear that it is intended to include decision-making by the Controller. However, s.90(1) provides that, in deciding whether to grant or amend a licence or other authorisation or in making a water extraction licence decision, "the Controller must take into account any of the following factors that are relevant to the decision: … (ab) any water allocation plan applying to the area in question". It is this latter provision that is cited in the Draft WAP Overview p.5, with no mention of s.22B(4). The Draft WAP goes on to say: "The Western Davenport 2023-2033 Background Report and Implementation Actions and other factors may be taken into account, where relevant to the decision". This statement may operate under s.90(1)(k), which authorises the Controller to consider any other factors the Controller considers should be taken into account, but that is a legal effect less than the statement in s.22B(4).

In my opinion, it is important to clarify what is the operation of these two provisions (ss.22B(4) and 90(1)) on the licensing decision-making of the Controller, which could benefit from statutory amendment. Australian jurisdictions give different legal effects to water allocation plans,[12] so there could be different opinions on what is the best practice for water planning regulation. In my opinion, the NWI goals of water allocation plans providing for 'secure ecological outcomes' and

[12] See Gardner et al, *Water Resources Law*, 2nd edition, chapter 17.

'resource security outcomes' means that a water allocation plan should be legally binding on the Controller making water licensing decisions and on licensees exercising rights under their water extraction licences. Securing this legal effect likely also requires a statutory prescription of the process for making water allocation plans.[13]

2.2. Integrated Management of Environmental Water

The essential principles to be derived from the NWI [78]-[79] are:

- The Parties agree to implement effective and efficient management practices and institutional arrangements that:
  - will identify the desired environmental and public benefit outcomes with as much specificity as possible,
  - establish accountable environmental water managers (including joint arrangements for transboundary resources) with the necessary authority and resources to provide sufficient water at the rights times and places to achieve those outcomes,
  - periodic independent audit, review and public reporting of the achievement of the environmental and public benefit outcomes and the adequacy of the water provision and management arrangements in achieving those outcomes,
  - environmental water managers will be able to trade water on temporary markets at times such water is not required to contribute to the environmental and public benefit outcomes, and
  - provide special requirements needed to sustain high conservation value rivers and groundwater areas.

The NT's NWI response[14] was to assert that "[f]ully integrated water resources management, including environmental water, is delivered by the [relevant NT Government agency]". Allocation and management of surface and ground water "is fully integrated at the operational level within the Department through the provisions of the *Water Act* and Regulations". Water advisory committees prepare annual public reports on compliance with water plans and various co-operative transboundary arrangements are in place. However, the essential response was to deny the need for independent, separately accountable environmental water managers with the capacity to trade environmental water entitlements. Instead, the NT's NWI response emphasises that:

> "Protection and achievement of these outcomes are ensured, and accounted for, through the explicit limitations on consumptive use (and associated relevant licensing and permit requirements for access to take and use water) that are set in water allocation plans. …
>
> The general water allocation planning framework that applies in the Northern Territory means that trading of environmental water provisions should never be required. All water that is not required for environmental and other public benefit outcomes is allocated for use in the consumptive pool. Furthermore, the Water Act only allows trading in water access entitlements, which cover consumptive uses …"

As explained above, these comments require reconsideration because it is doubtful that the water allocation plans have the legal effect contended for and that there has been a misapprehension about the potential operation of water access entitlements for environmental water consistently with consumptive pool management. Indeed, the allocation of such entitlements can enhance the consumptive pool management of water resources under stress. For example, given the vulnerability of GDEs in the Western Davenport Water Control District, and the threats from extreme heat events from climate change that could expose areas of GDEs subject to excessive drawdown, it would be beneficial to issue water access entitlements for environmental provisions to benefit those GDEs. In

[13] Ibid, chapter [17.1].
[14] Ibid pp.57-59, Key Action 5.1.

times of higher water availability, such as following a significant recharge event, the water could be traded to consumptive use licensees. In times of lower water availability, the water could be used to sustain the GDEs at risk, and the environmental water manager may even purchase water allocations to sustain the GDEs under threat. The NT would need to legislate to establish the institutional framework to operate such environmental water access entitlements, and to create effective accountability mechanisms.

3. Conclusions on my Reasoned Opinions on Questions i to iv

Summary of my opinions on the questions i - iii

iii. The Draft WAP, both alone and in combination with the Draft Background Report and the Draft Implementation Actions, does not comply with the NT Governments NWI commitments in that:
- it does not truly provide for consumptive pool share entitlements as understood from the general NWI context because it provides only for a static volume in the Estimated Sustainable Yield;
- It does not provide adequately for secure environmental outcomes because it relies on the incorporation of an external document (Guideline) that is difficult to understand and displays uncertain legal status;
- It does not conform with the commitments to the format or content (including monitoring) of water planning,

iv. The *Water Act* does not comply with the NT Government's NWI commitments in that:
- it does not provide for consumptive pool share entitlements as understood from the general NWI context because it does not provide a statutory basis for periodic allocations of water to share entitlements according to water availability,
- It does not provide for making a plan allocation of water to non-consumptive cultural beneficial uses, even though this appears to be done in practice, and does not authorise the form in which the acceptable limits of acceptable change on GDEs is defined,
- It does not provide for adequately for the consultation procedures, content and legal effect making a water allocation plan, addressing only in the simplest of terms the Minister's authority to make a plan and the essential content of a plan,

iv. The *Water Act* and Draft WAP fall short of best practice in water resources regulation in that:

d) the NT Government rejects the NWI principle that water access entitlements may be granted for environmental water provisions and traded temporarily when the water is not needed for environmental purposes, but it is arguable that this institutional reform could assist the NT in protecting GDEs in the arid conditions of the Western Davenport Water Control District.

e) the *Water Act* employs an outdated anthropocentric definition of 'environment', which may affect the credibility of the determination of the Estimated Sustainable Yield, and

f) they do not conform with best practice in the legislative definition for the process, content and legal effect of a water allocation plan.

iv Further observations or opinions

I said in 2.1.3 above that, from viewing Water Extraction Licensing Decision for AFM Central Australia Pty Ltd in respect of Licence No. WDP5006 (2021-2028) over land at Ali Curung in the Western Davenport Water District, too much of the important decision-making on the limits of water licence abstraction of groundwater is left to be determined in the water licensing assessment process. An aspect of this issue is that the licence conditions may defer important decision-making till after the licence has been determined.

By *Water Act* s.60(2), the grant of licence to take groundwater may be subject to such terms and conditions … as are specified in the licence document. The Water Regulations 1992, reg. 9, says that an application and a licence must be in an approved form. This requirement should lead to a capacity to require better information to inform the setting of management conditions. For example,

in this licence, conditions 1, 4, and 6 reveal a pattern of deferring important information and decisions till after the licence is issued. Condition 1 requires preparation of a map of GDEs and maps of the modelled spatial extent of predicted impact to the GDEs that meets the limits of the Guideline to be done at five yearly intervals for at least 15 years. It is not clear that such a map has been provided at the time of the application and incorporated into the licence. Further, Conditions 1.3 and 1.4 require preparation of a monitoring program to include quantitative triggers and limits that can be used to initiate adaptive management actions when groundwater response deviates from model predictions. The monitoring program is to include a schedule for providing reports to the Controller and is to be implemented on Controller's approval. The content of these monitoring programs should be submitted with an application, subject to public comment and incorporated into a licence on when granted.

Professor Alex Gardner, 14 May 2023