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To whom it may concern

SUBMISSION - NSW Water Strategy

Thank you for the opportunity to make a submission to the NSW Water Strategy. I am grateful for the efforts that the Department of Primary Industries and Environment (DPIE) has put into developing a strategy that addresses reliable water supply for NSW.

As the Member for Ballina and a resident in one of the 12 regions considered in this strategy, I want to commend DPIE for providing the community with detailed and comprehensive information on water strategies for NSW that can potentially address the state's water needs over the next 20 to 40 years.

Overview

We know that water security and water scarcity will be some of the biggest challenges facing our communities on a warming planet. Whilst DPIE have compiled a detailed strategy, I believe that it needs to go much further to address climate change, outline a roadmap for investment in water saving and production technologies that will meet the challenge of a warming planet, and it needs to outline more effective community engagement programs.

Investment in change, security and new technology

The NSW Water Strategy aims to address key risks to regional water safety and security, and aims to provide safe, secure and sustainable water and wastewater services to regional NSW towns.

I am concerned that the strategies we have seen in regional areas so far have not provided details of how new technologies and investment in water saving and water production technologies will be considered. The FNC Water strategy for example; continues to plan around old technology such as dams despite evidence showing that dams on a warming planet are becoming increasingly ill-equipped to deal with potable drinking water demand – primarily because we as a society are using a precious resource for household purposes that simply are not warranted. Why do we use best quality drinking water for all of our household needs instead of only using potable water for drinking?

Moreover, the demand for water is likely to be far higher than that predicted due to higher than 1 degree Celsius in global warming that underpins much of the modelling being done by Water NSW. This means we need an array of measures to cover every contingency. The cost of the proposed Dunoon Dam in my electorate at $220 million total initial capital cost and over $400 million in maintenance and operating costs over 80 years does nothing to insure us for a future of dwindling annual rainfall, longer and longer droughts and less and less day to day topographic rainfall in our region. Whereas, moving towards one and perhaps several desalination plants in the next 40 years covers every contingency. Particularly, if the community is educated that we are moving from creeks and dams for drinking water to reverse osmosis from sea water on a warming planet.

Action: It is imperative to have significant investment in:

- System changes, through support for local authorities to change practices and through removal of regulatory barriers to cost effective water reuse ,
- Water security, through research and development for and of diversified sources
- New technology, both for non-rainfall sources such as desalination and PRW, and for water efficiency.

Climate Impacts

The NSW Government is committed to achieving net zero emissions by 2050 and to making NSW more resilient to a changing climate (pg. 83). The NSW Water strategy aims to protect and enhance the environment, improve the health and integrity of environmental systems and assets by improving water quality.

As I mentioned in my FNC strategy submission, I am concerned that some of the previous recommendations made for the FNC water strategy do not align with the vision of achieving net zero emissions by 2050.

A case in point is the recently tabled Rous County Council's proposed Future Water Project 2060. This particular proposal did not give much detail on the impacts of climate change in either the assessment of groundwater extraction in Jacobs, *Future Water Strategy: Groundwater Schemes and Whole of Life Cycle Costings,* or figures in the *Rous Regional Supply: Future Water Project 2060, Integrated Water cycle Management Development: Assessment of Augmentation Scenarios.*
Additionally, on page 11 of the *Rous Regional Supply: Future Water Project 2060, Integrated Water cycle Management Development: Assessment of Augmentation Scenarios* report, the author acknowledges that:

> *Determining the impact of climate change on the secure yield of a water supply system involves two modelling steps:*
> - *modification of daily rainfall and evapotranspiration data and calibrated rainfall-runoff models to produce climate changed daily stream flows, and*
> - *the daily climate changed streamflow, rainfall and evapotranspiration are input into the water supply system simulation models to determine climate changed secure yields.*

The report takes as its basis the same scientific logic of the CSIRO's Murray Darling Basin Sustainable Yields Project which used daily historical data from 1895 to 2006 – a period during which global warming was on a less step trajectory.

The report goes on to state that their projections have relied on the assumption that secure yields are premised on 1 degree of climate warming to represent the available water supply in 2030. Given IPCC projections this seems to be a fundamental underestimation of global warming and hence brings into question the accuracy of the data around supply yields.

If the NSW water strategy is going to be overarching of regional strategies, it should place as much focus on commitment to using best available data, methods and modelling to inform decisions across the water sector as it places on job creation and boosting the economy (pg. 84).

As noted in the Rous Strategy, NSW is already experiencing trends of higher average temperatures and reduced cool season rainfall. There are indications from climate models that drought conditions may become more frequent and severe, and last longer (pg. 84). This is an indicator that more emphasis should be placed on technology and systems that will slow or even reverse this trend.

Action: I support the use of "Worst Case Scenarios" (pg. 86) in modelling and planning for our future generations' water security. Whilst the NSW government has committed to net zero emissions by 2050, there is significant risk that the global target will not be met. In preparing for the worst, better resilient systems need to be built.

- Rainfall dependent systems become increasingly unreliable as climate change accelerates. This increases the importance of rapid development of non-rainfall dependent supply sources throughout the state.

Community engagement

Whilst the DPIE has been comprehensive in drafting this strategy, I think that some lessons must be taken from Rous's Future Water 2060 Strategy. This project plan was not transparent in the way it was executed. There was a comprehensive consultation process with the community, however, before any results of the consultation were released, the FNC Water strategy was tabled making it difficult for community members to contribute without knowing the result of their previous submissions. There was widespread opposition to a section of the strategy that that supported the Dunoon dam. It is apparent that community consultation and education process lacked transparency and full involvement of the community, and water saving was not central to the Strategy.

To address this issue, it would be highly desirable if DPIE considered programs for water literacy to enable community members to make informed submissions and as a way of promoting the uptake of water saving technologies. Furthermore, it would be more advantageous if water education programs covered key subjects such as;

- The water cycle
- Climate disruption - impacts on water
- System-wide water efficiencies (as distinct from household behavior change)
- Rainfall independent water sources such as desalination & Purified Recycled Water
- Rainfall dependent water sources

- New ways to harvest water (e.g. Warrnambool 100% Roof water capture, Orange storm water capture)
- Drought-resilience and climate resilience - spreading risk across asset types
- Concept of supply-demand balance
- What households can do, and
- What organisations and industry can do.

Since there is limited knowledge about water conservation, saving and management in our communities, I urge DPIE to consider a Community Advocate program to amplify reach. It is not fair to expect communities with little or no knowledge of water issues to make submissions. There is need for community support networks and programs to a) educate communities and b) speak for communities.

These networks and programs should;

- Target retired teachers and community champions to take water literacy into their networks
- Provide training to ensure a consistent message aligned with program goals
- Be promoted by LGAs, local organisations
- Provide resources for advocates to present to Rotary, service clubs, community, friendship and family groups, and
- Water Knowledge Advocates commit to providing 6 information sessions in first year (based on the model of Al Gore climate communication training, where participants undertake to provide 10 sessions in the first year (communication resources, slides are provided).

ACTION: DPIE should consider education programs and support networks to inform communities on matters relating to water, not only at the time the strategies are on exhibition, but on an ongoing basis.

Other options

We know that there are many feasible options that could be included in the NSW Water Strategy. The *Ganden* report is a very detailed 195 page report that explores the feasibility of desalination sites in 3 locations; Byron Bay, South Ballina, and Lennox Head. Critics of desalination plants argue that they are a very expensive capital investment in the short term and that they are only utilised as a last resort when water runs out. Interestingly, in the last 2 years we have seen the Adelaide desalination plant, that is currently being expanded to double its capacity, turned on to save water from the Murray-Darling Basin and the Sydney desalination plant, that is also being expanded to double its capacity, turned on in response to the last drought.

On a warming planet and IPCC predictions of greater than a 1.5 degree Celsius temperature rise, Green powered desalination plants are going to truly stand the test of time no matter the scenario. I have had informal conversations with the NSW Water Commissioner as well as other key water experts in government and they all agree that desalination is the way of the future and that we just need to get past the emotional response of communities drinking what was once sea water.

Consideration should also be given to other technologies and options such as only using dams for drinking water and recycling water for non- drinking usage.

I advocate strongly for increased diversification in supply options within regions as the best way to ensure resilient water security into the future. Just as stockbrokers suggest a diverse investment portfolio to cut risk, therefore supply authorities must diversify their water sources.

- As groundwater supplies become an increasingly important part of the supply mix, an enhanced state-wide focus on sustainable groundwater management is essential (pg.78)
- Desalination needs to be available as choices for local supply authorities, with the active support of the DPIE. I take note of the draft recommendations of both State and Federal Productivity commissions in this regard. Refer to: Productivity Commission Green Paper - Water Energy and National Water Reform Draft
- I endorse the high level approaches outlined on (pg. 27) to :
  - Expand rainfall independent water sources
  - Adopt recycling for supply augmentation, and
  - At the home water conservation.

Thank you for this opportunity and I look forward to seeing where the submissions take you.

Sincerely

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Tamara Smith MP
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