**From:** [redacted]
**Sent:** [redacted]
**To:** DPIE W Regional Water Strategies Mailbox; DPIE Water Enquiries Mailbox
**Cc:** office@pavey.minister.nsw.gov.au
**Subject:** SUBMISSION - Far North Coast (FNC) Water Strategy.

SUBMISSION - Far North Coast (FNC) Water Strategy.

In response to the FNC Water Strategy, I strongly believe the contentious Dunoon dam should not be an option in the strategy. Strategy must not rely on Rous's limited Future Water 2060 project.

I grew up in Dunoon with my family, a life long (40yrs) resident currently living in Dunoon. My family also live at another address in Dunoon (2 households). I have always called Dunoon home and have been connected to this community. Since early discussion about the Dunoon Mega Dam many years ago in the 1990's up until now I have only heard rejection by the community of the Dam and the desire for smarter water options and modern technologies utilised.

Unsure how the Dunoon Dam is still on the Rous cards with majority of the community strongly opposing the Dunoon Dam. Have Rous been transparent on the community concern and opposition to Dunoon Dam proposal including hundreds of petitions, letters and protest? To witness community opposition to the proposed dam, all you need to do is drive around the area and you will see signs of passionate opposition against Dunoon Dam out the front of many houses, lining streets, business's, local markets, cars, t-shirts from Dunoon, Channon, to Byron Bay, Ballina, Bangalow, Lismore, Mullumbimby and furthur. Talk to the locals and it is difficult to find someone that is not passionately opposed. Known to locals as the Zombie Dam as this contentious issue has been slayed by the community since 1996, Rous County Council (RCC) bringing it back to life. I believe community has been ignored in their strong opposition to the Dunoon mega dam and request this option be removed from the water strategy forever. There is widespread concern about the destructiveness of Dunoon Dam to ecology and Aboriginal heritage sites. and also the failure of RCC to plan for water resilience using modern technologies and strategies.

Its the end of 2020 we are living in a time of rapid advancement in technology, intelligence and expansion. This proposed dam is old outdated thinking from the dinosaur era (1990's), we need to start utilising new systems that reflect new technologies now available with a focus on efficient, resilient, conservation, independance and secure water systems taking into consideration current climate crisis. We need Modern water strategy solutions to future (2060) water issues. RCC FNC water Strategies do not reflect the latest technologies available to us and are extremely limited.

As a volunteer at Friends of The Koalas in Lismore (the only Koala Sanctuary between Currumbin and Port Maquarie) I have witnessed the massive decline of Koalas first hand. I am deeply concerned for irreversible, detrimental impact and devastation of this proposed Dunoon dam on ecology and already vulnerable Koala population, and all animals, fish that will be killed, wiped out including endangered animals that have been found in the proposed site. Also wiping out Koala corridor and destruction of wildlife habitat.

I Acknowledge the work done so far by DPIE in developing the Far North Coast Water Strategy with it's wide range of strategies addressing reliable future water supply and security. Its imperative Dunoon dam is not included in FNC future water strategy.

I strongly oppose the Dunoon dam due to:

91% of community opposed to Dam promosal.
Environmental impact- obliterating rare rainforest. Only 1% of the Big Scrub Rainforest remains. This rainforest is of global significance. Dunoon dam will obliterate a huge percentage of what remains.
Detrimental Impact to already vulnerable Koala population, this dam will contribute to Koala extinction. Koalas are frequently seen and heard in the area of the proposed dam, Dunoon and The Channon.
Habitat fragmentation contributes to the decline in koala populations.
Contributing to the decline of the threatened Koala, Koala corridors would be destroyed. Whian Whian Landcare has planted almost 3000 koala food trees to rebuild corridors in the proposed dam area - linking to tracts of forest to the north. This southern corridor would be destroyed. *Local extinctions have occurred due to clearing and fragmentation of eucalypt woodlands and forests*. https://environment.des.nsw.gov.au/wildlife/animals/concervation. NSW government Koala strategy for conservation of koalas states '*protecting habitat corridors is a key pillar of the Strategy*' https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/nsw-koala-strategy-18250.pdf
Koalas under extinction pressure even before 71% of koalas in North Coast firegrounds were killed in the 2019 summer fires. https://www.wwf.org.au/news/news/2020/new-wwf-report-koalas-suffer-decline-across-fire-grounds
Destruction of Ecology and Wildlife Habitat - the Dam is in support of killing and wiping out already vulnerable and endangered species.
Nine threatened flora species would be severely impacted by Dunoon Dam. (2013 Terrestrial Ecology Impact Assessment Report). The destruction of these plants has serious international scientific consequences.
17 fauna species have been identified that are listed as threatened under the TSC Act NSW (the koala, one fruit bat, six microbats and eight birds and one frog).
The Proposed dam site contains warm-temperate rainforest on sandstone a rare occurrence. The dam wall construction would destroy 92% of it according to
Concern for what will become of the fragile creeks and streams below the proposed dam? Dried up water sources. Baren land, loss of life and habitat for animals and the forests.How is that a solution to water reliance?
Disrespectful desecration of Aboriginal cultural sites is unacceptable.
First Nation people opposed to destruction of heritage sites as shown in the Rous CHIA assessments
Strong Community opposition
the need for reliable water security. Better, smarter water strategy options available that are more resilient to current climate crisis, namely drought.
Wasted money and opportunity that could be better directed to create these sustainable water strategies and system efficiency, independence and resilience. Its a big financial gamble along with most of all a water security gamble and an unnecessary risk to rely on this proposed Dam for future water security.
Very possible scenario where there is No rain, Dam is redundant.
High Risk-Reliant on rain and in times of drought the Dam proposal could end in a water catastrophe- If money is spent on this Dam instead of reliant water strategies we are risking a water disaster and supply shortage.
Water Services Association of Australia describes new dams as high-risk investments because they depend on rain. They recommend a mix of complementary water strategies. (WSAA, All Options on the Table ,2020).
Dunoon Dam will leave us vulnerable in a warming climate
Professor Stuart Khan (UNSW) has said a resilient water system would have 30-50% of supply from sources that don't depend on rain, such as Purified Recycled Water and desalination, both of which can be powered by renewable energy. (ABC North Coast Radio, 22/10/20)
The NSW Productivity Greenpaper 2020 recommends water efficiencies, and the uptake of new sources such as purified recycled water. (NSW Treasury, *Productivity Commission Green Paper: continuing the productivity conversation*, 2020. Accessed at http://productivity.nsw.gov.au/green-paper/water-energy )
Outdated technology
Its 2020, every year technology advanced, smarter more efficient solutions become available to us. Id love to see newer, smarter water efficient solutions and strategies used. Building a Dam is cuting off future options in technological advancement. Its clearly not a smart solution using outdated technology.
Mega Dam is implementing outdated technology to address a 2060 future solution. Lets use latest technologies people, not last centuries, we are now smarter than that.
A new report from Professor Stuart White (UTS, Sydney) says that the costly dam is unnecessary, and that it would increase the cost of water significantly.
Professor White's report says that the Rous assessment process failed to adequately analyse and cost investment in water efficiency, and that it incorrectly applied the concept of marginal cost in comparing options.
It would increase the cost of water to consumers and industry.
It would also waste an opportunity to support employment in the region. Implementing new modern water strategies.
Not considering analysing water leakage (need for water audit) , smart water usage, areas of wastage and more independent systems
Rainforests contribute to rain production, destroying 6.7% of the 1% remaining Big Scrub rainforest to build the Dunoon dam is not considering the impact on future rain production and rainfall. Destroying rainforest contributes to drought and climate crisis. Not to mention humans breath oxygen that is produced by trees.
Social rejection demonstrates the dam option fails the "triple bottom line" test [economic/environmental/social]. A broad suite of other effective options were preferred by community.
The destructive impacts of Dunoon Dam have been noted in numerous reports including: 2010 Terrestrial Ecology, Aquatic Ecology, and Cultural Heritage reports, 2013 a Technical Report noted that the dam was constrained by significant environmental and social impacts, high capital cost, and the fact that it was 'highly climate influenced" (p52).Integrated Water Planning report in 2014 noted that although the dam was 'technically viable', it had 'significant environmental and social constraints associated with threatened and endangered terrestrial ecology and culturally significant Aboriginal heritage".
The 2011 Terrestrial Ecology Impact Assessment (TEIA), identified 72 ha of Tallowwood and Flooded Gum koala habitat.https://waternorthernrivers.org/wp-content/uploads/2020/11/Dunoon_Dam_Terrestrial_Ecology_Impact_Assessment.pdf
There are breeding platypus on Rocky Creek. The Dunoon Dam would hasten the decline of this species. Construction of the dam will reduce platypus habitat downstream, due to sediment load smothering (The 2012 Aquatic Ecology Assessment p.61). https://waternorthernrivers.org/wp-content/uploads/2020/11/Aquatic_Ecology_Assessment_Final_Report-1.pdfPlatypus is facing extinction because of habitat destruction, dams and weirs (Bino et al, A stitch in time – Synergistic impacts to platypus metapopulation extinction risk , Biological Conservation, Feb 2020) ●
There are 62 ha of Lowland Rainforest Endangered Ecological Community (EEC) on the site.
The TEIA states, under the heading of Key Threatening Processes: "The dam will alter the natural flow of Rocky Creek both upstream and downstream of the proposed dam wall. The resultant impact is considered (to) be long-term and irreversible" (p.117).

Extinction Pressure on Native Fish Another 16 native fish species are also threatened by a significant and permanent loss of this 17.5 kms of habitat, including Oxleyan Pygmy Perch and Purple Spotted Gudgeon (2011 Rous Aquatic Survey).

A Dunoon dam would extinguish nearly all of the endangered Eastern Freshwater Cod's Rocky Creek habitat due to cold water pollution downstream (NSW Fisheries, Eastern (Freshwater) Cod(Maccullochella ikei)Recovery Plan , 2004 ). The existing NSW DPI Eastern Freshwater Cod Recovery Plan aims to restore this species to the Rocky Creek and Richmond River systems. It depends on quality habitatandnaturalflows. [h ttps://www.dpi.nsw.gov.au/fishing/fish-species/endangered-species/eastern-freshwater-cod

An Integrated Water Planning report in 2014 noted that although the dam was 'technically viable', it had 'significant environmental and social constraints associated with threatened and endangered terrestrial ecology and culturally significant Aboriginal heritage".

Other Concerns
In the document: *NSW Government Regional Water Strategies states Figure 2. Regional water strategies: objectives:*

'*Recognise and protect Aboriginal water rights, interests and access to water. Including Aboriginal heritage assets.'* Destroying Aboriginal sites including burial sites and heritage assets at proposed Dunoon dam is not congruent with this objective.

The 2011 Cultural Heritage Impact Assessment states "Aboriginal stakeholders are of the opinion that the sites should remain undisturbed and that no level of disturbance is considered acceptable to them". This heritage would be destroyed by the proposed Dunoon dam. Clearly does not reflect the strategy objectives

In 2013, Rous County Council commissioned another Cultural Heritage Impact Assessment (CHIA 2013) to supersede the 2011 CHIA). Rous are now asking the Wijabal Wia-bal to repeat the CHIA process yet again. Clearly this process is disrespectful and ignoring Aboriginal peoples opposition to destruction of cultural sites (heritage assets).

Document also states *'objectives: Improve water security'*. Proposed Dunoon dam is not a solution to the water security. Dependance and reliance upon rain during droughts and climate crisis is not a smart or secure option . *No water supply option on its own is likely to meet all the needs of a city or regional town: the reality is that combinations of options need to be considered. With decreased streamflows into rivers and dams, our reliance on rainfall dependent water supply options is a risk to the water security of our cities and communities.*https://www.wsaa.asn.au/news/new-report-all-options-table-urban-water-supply-options-australia There is obviously no water security utilising a dam that is dependent on rain, Dunoon dam is not aligned with this objective.

NSW government Koala strategy for conservation of koalas states '*protecting habitat corridors is a key pillar of the Strategy'* https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/nsw-koala-strategy-18250.pdf Koala habitat corridors will be destroyed by the proposed Dunoon dam. This is clearly not aligned with NSW government Koala strategy for conservation.

Stuart White, Institute for Sustainable Futures (IFS) states in The Rous Sustainable Water Program:Towards a secure, reliable and affordable water future 4 Sep 2020 that '*There is a plausible risk that, if the Dunoon Dam was actually required by 2024, and no other action was taken, that it would not be able to provide sufficient water in time based on the secure yield - demand projections. This indicates that implementing a significant water efficiency program, as suggested here, would be a prudent course of action even if dam construction was contemplated.*

● *If paleoclimate data is used to guide water supply planning, the duration of possible droughts are so long that even the 50 Gl Dunoon Dam storage will be insufficient, and planning would need to be directed towards rainfall-independent solutions, including contingency*

**Smart water systems I am in favour of**
We need an approach that considers a variety of strategies in creating water security and not being dependant on a Dam in times of climate crisis. An approach that utilises sustainable, economic, water-wise system options. There is evidence, reports and assessments that put forward Smarter Water Options including Stuart White, Institute for Sustainable Futures (IFS) ;The Rous Sustainable Water Program:Towards a secure, reliable and affordable water future 4 Sep 2020 ; Rous Water supply augmentation proposal - brief review.Stuart White lists Residential Water Efficiency Initiative projects including;*Residential indoor retrofit program. Direct investment in replacement and installation (household assessment and retrofits) by qualified plumbers of 4-star showerheads, taps and toilets to best-practice efficiency across the entire existing residential housing stock;Targeted outdoor water use program; Leakage and pressure management. WHites estimated costs, water savings The Dunoon Dam would cost more than four times the cost of this program, and in 2030 would usefully supply about 60% of the volume of water. The unit cost of the water usefully supplied by the Dunoon Dam would be about 9 times the unit cost of the water saved by the water efficiency program.*
Rous has failed to list a wide variety of water system solution options. RCC Future Water Strategy is extremely limited in options. We need local councils to adopt policies that optimise water, instead of wasting it.
Leading Australian Water Authority Report All Options On The Table Report
Water Services Association of Australia (WSAA) says, we need a mix of strategies, including water efficiency. For resilience in drought, it's better if new supply is independent of rainfall, such as water recycling or desalination.

We are in need of an overhaul of the way society views and use water, with change in the behaviour or purchasing decisions of water customers,

Emphasis on water conservation efficiency, reconising water saving strategies

combing a suite of resilient water strategies eg Water conservation technologies+ Rain Roof water harvesting + renewable powered water recycling systems+water cycle management+ Water conservation and awareness Education + identify and reduce water wastage.

Water Recycling: Regional centre Parkes are currently implementing water recycling as a non-potable water source. Local evidence and experience related to water re-use and recycling has informed the development of options for the draft regional water strategies.

potable reuse and desalination.

Water Harvesting; stormwater harvesting; rain tanks ;urban runofff recycling and reuse potable and non-potable

Rain water roof harvesting, including independent household tank storage. Possible rebates

Water Re-use

Household Tank rebates

New housing developments can build in innovative water systems from the ground up, the cost of which can be absorbed by developers.

Seawater desalination

Stuart White (ISF) states in The Rous Sustainable Water Program:Towards a secure, reliable and affordable water future 4 Sep 2020 *'if you invest a small amount in education, communication you may get 2-5% change in the behaviour or purchasing decisions of water customers, and if you provide rebates you may get a 10-20% change. If you directly invest in retrofitting fixtures and appliances you can get a much greater, more than 50% change,'*

Solar powered water recycling system such as used in regional centre of Parkes, *capable of producing two megalitres of water per day. The system will be used to irrigate parks and public spaces, relieving stress on the town's water supply. The expansion of water recycling operations will continue to reduce the demand on drinking water sources and support regional communities across NSW* accesed at https://www.industry.nsw.gov.au/__data/assets/pdf_file/0006/308994/rws-guide.pdf

Dr. Stuart Khan on Water Re-Use, Expert in purified recycled water, Dr. Khan says a *drought-resilient system should get 30-50% of its water from rainfall-independent sources, such as water reuse or desalination. Desalination is 100% rainfall-independent, and could be powered by renewable energy.*

Water cycle management and conservation planning

Water wise. Education is important to bring community and individual awareness to water source and sustainability. Water Source Education is needed to make people more responsible, aware and connected to their water supply. People and household that use independant water systems such as rain water tanks, are the few people I know that are conscious of water and usage and plan for water security through implementing sustainable water systems including: reuse, conservation, efficient use, water saving devices, and through the use of water efficient and water economic systems. Disconnection and lack of awareness to water supply is shown in wastage and little concern for water usage. Addressing this issue of awareness through education and community incentives.

Area wide water audit is necessary to identify water leakage and wastage , usage. I request for area wide water audit be conducted and sustainable, secure, smart water options

Eliminate grass watering and driveway watering wastage.

Adopt a management approach that values water at every part of its journey

● Professor Stuart Khan (UNSW) has said a resilient water system would have 30-50% of supply from sources that don't depend on rain, such as Purified Recycled Water and desalination, both of which can be powered by renewable energy. (ABC North Coast Radio, 22/10/20)

● The NSW Productivity Greenpaper 2020 recommends water efficiencies, and the uptake of
new sources such as purified recycled water. (NSW Treasury, Productivity Commission Green Paper: continuing the productivity conversation, 2020. Accessed at http://productivity.nsw.gov.au/green-paper/water-energy )

Water efficiency is cheap and effective ( All Options on the Table p3) . It is also recommended by the 2020 NSW Productivity Commission Green Paper. (NSW Treasury, Productivity Commission Green Paper: continuing the productivity conversation, 2020. Accessed at http://productivity.nsw.gov.au/green-paper/water-energy )
Purified and recycled water
Implementing systems that create independence such as rain water harvesting for individual houses

**I am concerned by Rous governance due to:**

Failure to respect and listen to huge community opposition of which 91% off community opposed to Dam proposal through letters, petitions etc.. The Dunoon dam is not wanted by the community. Why is Rous ignoring the results of the community consultations?
Rous Water commenced investigations into the proposed Dunoon Dam in 2008. Public consultation undertaken at the time indicated that the community's preference was for Rous Water to consider the future water supply issues more broadly before proceeding with Dunoon Dam.Clearly community opposition has been recognised, why is RCC still proposing it?
Failure to respect Aboriginal peoples opposition to destruction of cultural sites. Why is Rous ignoring the results of the community consultations?
Disgusting handling of process of repeated Cultural Heritage Impact Assessment (CHIA)
Rous Future Water 2060 fails to mention system resilience as important,
All options need to be given serious attention including water efficiency, roof and stormwater harvesting (including tanks), and water sources that don't need rain such as purified recycled water and desalination.
We need Modern water strategy solutions to future (2060) water issues. RCC FNC water Strategies do not reflect the latest technologies available to us and are extremely limited. Why are the majority of FNC Water Strategies so outdated? Who are these dinosaur, hasn't anyone told them its 2020and there are many more options than they are proposing? Maybe they should be supplied with a copy of
RCC has ignored system-wide water efficiency which is cheap and recommended. Water efficiency is cheap and effective ( All Options on the Table p3) . It is also recommended by the 2020 NSW Productivity Commission Green Paper. (NSW Treasury, Productivity Commission Green Paper: continuing the productivity conversation, 2020. Accessed at http://productivity.nsw.gov.au/green-paper/water-energy )
I am disappointed and amazed Rous County Council omitted water efficiency from its 2020 Integrated Water Cycle Management Development options for increasing supply and undertook no specialist studies on it. ( https://rous.nsw.gov.au/page.asp?f=RES-HOV-71-65-36 )
RCC failed to provide leadership in presenting increasing knowledge of innovative water management. There is a lack of familiarity with options showcased by WSAA in All Options on the Table (WSAA) and on the Cooperative Research Centre Water Sensitive Cities website . The narrow focus on Dunoon Dam has stunted water literacy in the region. This is a deficit that DPIE needs to rectify in the Regional Strategy.
Because of this failure of leadership and governance, Rous Future Water 2060 is a flawed plan that reflects an outdated, stunted approach to water system planning, and must not be used to underpin the Regional Strategy.
RCC has ignored system-wide water efficiency which is cheap and recommended
Rous County Council omitted water efficiency from its 2020 Integrated Water Cycle Management Development options for increasing supply and undertook no specialist studies on it. ( https://rous.nsw.gov.au/page.asp?f=RES-HOV-71-65-36 )
Professor Stuart White identified significant potential increase in Rous supply through efficiency measures neglected by Rous.
( https://waternorthernrivers.org/wp-content/uploads/2020/11/Prof-Stuart-White-Brief-Review-Rous-Water-augmentation-20200904-1.pdf )
● The lack of attention to water efficiency is evident from the fact that during the past 2 years there was a significant amount of time in which RCC did not employ a Demand Management officer. The position is now filled part-time, reflecting the low priority that RCC still attaches to water efficiency.
The destructive impacts of Dunoon Dam have been noted in numerous reports. In 2010 Terrestrial Ecology, Aquatic Ecology, and Cultural Heritage reports all found serious impacts from a dam in this location on Rocky Creek. Members of a Public Reference Group voiced their concerns and opposition. (SMEC, Dunoon Dam Terrestrial Ecology Impact Assessment , 2011)

In 2013 a Technical Report noted that the dam was constrained by significant environmental and social impacts, high capital cost, and the fact that it was 'highly climate influenced" (p52).
There is widespread concern about the destructiveness of Dunoon Dam and also the failure of RCC to plan for water resilience using modern technologies.

I have run out of time to add everything, I hope this submission sees an end to the Dunoon Dam and in doing so saves our precious eco system for future generations.

Thank you for considering my submission

Life long resident of Dunoon

[redacted]

[redacted]

*Please do not include my address if publishing for public viewing