Agenda for the Northern Rivers Joint Organisation Ordinary Board Meeting

Date: 8 February 2019

Location: Tweed Shire Council Chambers

Time: 11.00am

AGENDA

1 ACKNOWLEDGEMENT OF COUNTRY

We acknowledge that this meeting is held upon the land of the Bundjalung people who are the Traditional Custodians of this Land. We pay our respects to Elders past, present and future.

2 APOLOGIES

3 DECLARATIONS OF INTEREST

4 ADDRESS BY OFFICIAL VISITOR(S)

11.30am 12.00pm

Tweed Shire Council Aboriginal Advisory Committee

At its meeting on 2 November 2018, Cr Katie Milne tabled a request from the Tweed Shire Council's Aboriginal Advisory Committee to make a presentation to the Northern Rivers Joint Organisation, to share the story of their working relationship with Council on the 20th anniversary of this Committee.

A video presentation will be delivered, followed by a Q & A session. Representatives in attendance will be

Des Williams – Chair Tweed Byron LALC

Leweena Williams – Ceo Tweed Byron LALC

Jackie McDonald – Tweed Wollumbin AECG

Dale Williams – Bugalwena Aboriginal Health

Victor Slockee – Canowindra Aboriginal Aged Care

Councillor Chris Cherry – Tweed Shire

5 CONFIRMATION OF MINUTES AND BUSINESS ARISING FROM THE MINUTES

5.1 CONFIRMATION OF MINUTES OF THE ORDINARY MEETING OF THE NORTHERN RIVERS JOINT ORGANISATION HELD 2 NOVEMBER 2018

The Minutes of the Ordinary Meeting of the Northern Rivers Joint Organisation Friday 2 November 2018 are attached for information and adoption by the Board.

RECOMMENDATION:

THAT the Minutes of the Ordinary Meeting of the Northern Rivers Joint Organisation held Friday 2 November 2018 be adopted as a true and accurate record of proceedings of that meeting.

Attachment 1:

Draft minutes of the Ordinary meeting of the Northern Rivers Joint Organisation held 2 November 2018

5.2 CONFIRMATION OF MINUTES OF THE EXTRAORDINARY MEETING OF THE NORTHERN RIVERS JOINT ORGANISATION HELD 7 DECEMBER 2018

The Minutes of the Extraordinary Meeting of the Northern Rivers Joint Organisation Friday 7 December 2018 are attached for information and adoption by the Board.

RECOMMENDATION:

THAT the Minutes of the Extraordinary Meeting of the Northern Rivers Joint Organisation held Friday 7 December 2018 be adopted as a true and accurate record of proceedings of that meeting.

Attachment 2:

Draft minutes of the Extraordinary meeting of the Northern Rivers Joint Organisation held 7 December November 2018

5.3 CONFIRMATION OF CIRCULAR RESOLUTION - DECEMBER 2018

On Thursday 20 December 2018 a circular resolution regarding the appointment of the Executive Officer was distributed to all voting members.

As per Section 15.11 of the Northern Rivers Joint Organisation Code of Meeting Conduct:

Out of session decisions

15.11 Decisions that are required in between meetings may be determined by a majority written response to an email from the Chair. Any out of session decision that has recorded a majority from a quorum of responses will be brought to the Board at its next meeting for noting

RECOMMENDATION:

THAT the Board of the Northern Rivers Joint Organisation note the decisions of the Circular Resolution dated December 2018.

Attachment 3:

Circular Resolution December 2018

6 NOTICES OF MOTION

7 REPORTS

7.1 EXECUTIVE OFFICER REPORT

Update of freight and supply study

Dr Ken Doust and Mr Andrew Swan submitted the Draft version of the Northern Rivers Freight and Supply Chain Report. The draft version has been developed in consultation with local industry and council staff as well as key stakeholders such as Rail and airport organisations. The final version is intended to align with the broader strategy that Transport for NSW is undertaking, and key Transport NSW officers have been consulted. Dr Doust led a workshop to receive feedback from councils and DPC in Casino 31 January. The final version will be submitted by the end of February.

Update on Biodiversity Consultancy RFQ

Officers from Tweed Shire Council, Ballina Shire Council and NRJO Interim EO formed a committee to select the winning tender for the "Northern Rivers Joint Organisation biodiversity legislation reforms project".

The project sought quotes from suitably qualified and experienced contractors to:

a) complete a regional assessment of the needs of each council to adapt development assessment processes to meet the new legislation, identify any existing opportunities for resource sharing and report this assessment with recommendations for specific requirements; and

b) complete an assessment of the unavoidable biodiversity offset requirements likely to be generated from land already identified for development across the NRJO and report this assessment with recommendations for specific further requirements, including whether a second stage analysis of potentially available stewardship sites is required.

The tender was awarded to a local contractor; Reconeco.

Safe and Secure Water Program – expression of interest for co-funding through the Safe and Secure Water Program: Northern Rivers Regional Bulk Water Supply Investigations. This project was assessed by the SSWP Technical Review Panel (TRP) on 13 December 2018 and, following formal endorsement of the project by the Northern Rivers Joint Organisation, was deemed eligible to proceed to the next stage of the assessment process, i.e. submission of a detailed application for scoping study co- funding.

Joint Organisation Ongoing Funding

The Network of Joint Organisations have put forward a proposal to address the issue of ongoing base funding for each organisation. The network considers that future funding envelope of between $200,000 to $300,000 for the next three years is critical to ensure the sustainability of the Organisations. ISJO & CRJO drafted a joint letter to Minister Upton and Deputy Premier from the Chairs of all JOs outlining this proposal.

Strategic Priorities Publication

Consultants Muller Enterprises finalised the publication of NRJO Strategic Priorities. Hard copies are available and the electronic version will be available on the NRJO website 7th February with the formal launch to be held following the NRJO Committee Meeting, 8th February at Tweed Shire Council.

NSW Local Govt HR Skills Strategy

The EO has been introduced to and met with the Department of Industry's Damon McCarthy, Regional Industry Education Partnerships at Training Services NSW. The strategy aims to assist existing council employees to improve their skills and to provide a skills pathway for people planning careers in LG. The program gives councils better access to quality professional training to help them meet the demands of a modern LG environment. In December 2018, HR Managers responded to a request to provide workplace supervision in a trade related or outdoor role for one day per week over a 12 or 16 week period. The project targets girls/women and indigenous youth. The aim is to secure pre-employment opportunities in non-traditional roles. eg introducing female cohort to trades and outdoor employment opportunities. A follow up is scheduled for the NRHRIG meeting 7 February.

Commencement of the new Model Code of Meeting Practice for Local Councils in NSW

Following an extensive consultation process, a Model Meeting Code has been prescribed under the Local Government (General) Regulation 2005 (the Regulation) and the existing meetings provisions of the Regulation have been repealed. The new Model Meeting Code is available on OLG's website.

The Model Meeting Code has two elements:

- It contains mandatory provisions that reflect the existing meetings provisions of the Act and update and enhance the meetings provisions previously prescribed under the Regulation to reflect contemporary meetings practice by councils.
- It contains non-mandatory provisions that cover areas of meetings practice that are common to most councils but where there may be a need for some variation in practice between councils based on local circumstances. The non-mandatory provisions also operate to set a benchmark based on what OLG sees as being best practice for the relevant area of practice.

The Model Meeting Code also applies to meetings of the boards of joint organisations and county councils. The provisions that are specific to meetings of boards of joint organisations. References to councils below also include references to joint organisations and county council unless otherwise specified.

<u>What this will mean for your council</u>

- Councils are required to adopt a code of meeting practice that incorporates the mandatory provisions of the Model Meeting Code prescribed by the Regulation. A council's adopted

meeting code must not contain provisions that are inconsistent with the mandatory provisions.

- A council's adopted meeting code may also incorporate the non-mandatory provisions of the Model Meeting Code and any other supplementary provisions adopted by the council.
- Councils and committees of councils of which all the members are councillors must conduct their meetings in accordance with the code of meeting practice adopted by the council.

Key points

- Under the transitional provisions of the LGA, councils must adopt a code of meeting practice that incorporates the mandatory provisions of the Model Meeting Code no later than 12 months after the next ordinary elections.
- Until a council adopts a new code of meeting practice, its existing code of meeting practice will remain in force up until six months from the date on which the new Model Meeting Code was prescribed, (14 December 2018 – 14 June 2019). If a council fails to adopt a new code of meeting practice within this period, under transitional provisions contained in the Regulation and the LGA, any provision of the council's adopted meeting code that is inconsistent with a mandatory provision of the Model Meeting Code prescribed under the Regulation will automatically cease to have any effect to the extent that it is inconsistent with the mandatory provision of the Model Meeting Code.
- Irrespective of whether councils have adopted a code of meeting practice based on the Model Meeting Code, all councils (but not joint organisations) will be required to webcast meetings of the council and committees of which all members are councillors from 14 December 2019. The webcasting requirement may be met simply by posting an audio or video recording of the meeting on the council's website.
- Before adopting a new code of meeting practice, under section 361 of the LGA, councils are still required to exhibit a draft of the code of meeting practice for at least 28 days and provide members of the community at least 42 days in which to comment on the draft code. This requirement does not apply to joint organisations.
- In adopting the Model Meeting Code, joint organisations should adapt it to substitute the terms "board" for "council", "chairperson" for "mayor", "voting representative" for "councillor" and "executive officer" for "general manager".
- In adopting the Model Meeting Code, county councils should adapt it to substitute the term "chairperson" for "mayor" and "member" for "councillor".

OLG will be providing further guidance and assistance to councils to support implementation of the new Model Meeting Code during the six month transitional timeframe.

Copies of the Code and Procedures can be found on the OLG website https://www.olg.nsw.gov.au/strengthening-local-government/conduct-and-governance/model-code-of-conduct

RECOMMENDATION

THAT the Executive Officer's Report be received and noted.

7.2 ROUS COUNTY COUNCIL REGIONAL WATER RELATED PROJECTS

Purpose

The purpose of this report is to advise the Northern Rivers Joint Organisation (NRJO) on regionally significant water related initiatives or projects that have been identified by the region's Councils whereby NRJO can seek either State or Federal funding or lobby on behalf of the region.

Background

In October 2018, the Northern Rivers Joint Organisation (NRJO) requested that both the region's Water and NRM Managers groups submit a report on potential regional water related projects that the NRJO can use to petition State or Federal governments for funding or that NRJO can lobby these levels of Government for the beneficial outcome to the region.

Rous County Council liaised with the region's Councils and a list of projects that were tabled to be considered by the NRJO is included as Attachment 4:

RECOMMENDATION

THAT the Northern Rivers Joint Organisation receive and note the report.

Phillip Rudd

General Manager

Attachment 4:

Rous County Council – Regional water related projects

7.3 SAFE AND SECURE WATER PROGRAM –REGIONAL BULK WATER SUPPLY STRATEGY

Purpose

The purpose of this report is to advise that the Northern Rivers Joint Organisation (NRJO) has been invited to apply for co-funding for the further development of the Regional Bulk Water Supply Strategy through the Safe and Secure Water Program (SSWP). The report is also to request the allocation of funds from the NRJO to complete the detailed application in accordance with relevant guidelines.

Background

In 2013, the then Northern Rivers Regional Organisation of Councils (NOROC) resolved to develop a long-term (50-year) bulk regional water supply strategy. The objectives of this strategy were to evaluate the potential benefits to future water supply security resulting from a regionally integrated system.

The study identified five potentially feasible water supply scenarios which warranted further consideration to enable development of a preferred option for the region. The regional scenarios all involve the interconnection of the two largest water supply networks (Tweed Shire Council and Rous County Council) as well as interconnection of the smaller town water supplies to this larger network. Feasibility assessments and conceptual designs of these interconnections were recommended as a priority.

In terms of water supply sources, desalination, surface water and groundwater sources were all considered as potentially viable options within the region. The addition of seawater desalination would add climate independence to the region's supplies, however increased knowledge of cost, energy requirements and location are required to enable detailed comparison of desalination with other sources. This study has confirmed that a number of surface water storage options that have been previously identified within the region could also form the basis for the region's future water supply needs.

Irrespective of the ultimate supply configuration, to assist with future planning, improved data on secure yield and future demand is required, whilst potable water savings (demand management, water loss reduction and potable water substitution) would continue to be an integral component of the regional water supply scheme.

The NRJO has requested a review of the action plan to document the status of water resource planning undertaken individually or collectively as well as any future plans for water supply development in the region. A revised action plan has been prepared and is attached to this report. Rous County Council, on behalf of the NRJO, has prepared and lodged an expression of interest to the SSWP based on the revised action plan. The NRJO was advised on 21 December 2018 that the project was assessed by the SSWP Technical Review Panel (TRP) and was deemed eligible to proceed to the next stage of the assessment process. The NRJO has now been invited to submit a detailed application in accordance with the guidelines.

The application would address investigations for the water supplies in Casino, Mullumbimby and Wardell systems and options for supply augmentation across the region including regional interconnection options and a regional desalination facility. The progression of these

investigations will assist the region's Councils in both determining options for their strategic water security needs but equally assist in formulating an optimal option for a regionally integrated system

The NSW Government has recently announced changes to the SSWP, and as a result, detailed applications under the current guidelines will close on 1 April 2019. It is considered unlikely that the detailed NRJO Regional Bulk Water Supply Study SSWP application can be completed by this date. Advice received by the Department of Industry – Water that manages the administration of these funds confirmed that detailed applications received after this date will still be assessed. However, the TRP will reprioritise the grant applications based on the new guidelines after this date. This means that previously unsuccessful detailed grant applications may be reprioritised for funding under the new assessment guidelines.

The detailed NRJO Regional Bulk Water Supply Study SSWP application is considered to be relatively straight forward as no construction projects are proposed at this time. However, the action plan contains both regional and individual Council investigations. For the application to truly be a regional approach, a detailed consultation period with each of the NRJO Councils will be necessary prior to lodging the application. Agreements will need to be in place governing the apportionment of funds to regional investigations as well as appointment of the lead Council to manage the overall SSWP grant administration and reporting process. For this reason, the application will be submitted after the 1 April 2019 deadline.

Legal

Not applicable.

Planning: Strategic Regional Priorities 2019 - 2022

The 2013 Northern Rivers Regional Bulk Water Supply Study aligns with the Innovative, sustainable energy, water and waste management objectives from the NRJO's strategic regional priorities. The Regional Bulk Water Supply Study aims to secure the region's water supply to meet future needs of residents, businesses and visitors. The further development of an action plan will assist in determining a preferred option for a regionally integrated system and promote and deliver against the NRJO's strategic regional priorities.

Budget

The table below outlines the various costs for completing the detailed SSWP application.

Item	Amount (exc GST)
Consultancy costs - Preparation of the detailed application including business cases	$20,000
Consultancy cost for regional consultation workshops	$5,000
General project contingency	$2,750
TOTAL	$27,500

The total cost of the scoping study investigations is expected to be $1.44 million over the next three years. A request for funding under the SSWP of 37.5% ($540,000) of the total cost is suggested with the remaining $900,000 to be funded by the region's Local Water Utilities (LWUs).

Conclusion

The 2013 Northern Rivers Regional Bulk Water Supply Study recommended a regional approach to improving water supply security in the Richmond/Tweed River basins. The action plan has been updated to reflect the current status of LWU investigations and confirm the future direction for regional investigations.

The NJRO has been invited to apply for funding under the NSW Government's SSWP for investigations relating to water supply security in the region.

It is recommended that the NJRO prepare a detailed application covering all related investigations that are not subject to existing detailed applications under this program.

RECOMMENDATION

THAT the Northern Rivers Joint Organisation:

1. Receive and note this report.
2. Provide funding of $27,500 (inclusive of a 10% contingency) for Rous County Council to lead and coordinate the development of a detailed application for the Safe and Secure Water Program.

Phillip Rudd

General Manager

Attachment 5:

Northern Rivers Joint Organisation - N.R. Regional Bulk Water Supply Study - Review of Action Plan

7.4 NORTHERN RIVERS WATERSHED INITIATIVE – PROPOSAL FOR SUBMISSION TO THE NSW GOVERNMENT'S SNOWY-HYDRO LEGACY FUND

Purpose

To seek approval from the Northern Rivers Joint Organisation (NRJO) for

(i) the proposed Northern Rivers Watershed Initiative (NRWSI) as outlined in the attached discussion paper; and

(ii) the NRWI to be identified as a priority project for funding under the NSW Government's Snowy-Hydro Legacy Fund within the Northern Rivers region.

Background

The Northern Rivers region is recognised as having extremely high terrestrial, aquatic and marine biodiversity value with many species endemic to the region. However large portions of these catchment and estuarine areas have typically been extensively modified from (pre-European) heavily timbered forests to a (current) mix of intensive agriculture, grazing and urban development. As evidenced by the ecohealth status of the Richmond River, extensive modification of natural processes has placed significant stress on these Northern Rivers catchments and estuarine systems.

Pressure on ecosystems within the Northern Rivers will be heightened in the future through climate induced changes, with projections suggesting that there will be more hot days, bushfires, droughts and intense storms. These can all place human life, property and natural ecosystems at increased risk. Changes in rainfall and higher evaporation rates are likely to lead to less water for streams and rivers in the Northern Rivers catchments, which will place strain on water resources. While changes in average temperature, rainfall and evaporation will have long-term consequences for the Northern Rivers catchments, the impacts of climate change are more likely to be felt through extreme weather events.

In summary, ecosystem health, water security and flood risk all represent key water and catchment management issues for the Northern Rivers. Responding to ecosystem health, water security and flood risk in an integrated manner requires solutions that can generate outcomes across a range of policy objectives.

The NRWI would involve large-scale investment in works in upper catchment areas. This will endeavour to restore the natural hydrologic functions that deliver improvements in stream bank condition and river health including contributing to reduced flood risk within the catchment. In addition, it would involve implementation of coastal zone management plan (CZMP) actions to address high priority estuarine health issues. These measures will deliver a range of environmental, social and economic benefits.

The area to be covered by the NRWI involves every major river basin within the NRJO footprint – this includes the entirety of the Tweed River, Brunswick River, Richmond River and Evans River catchments. The NRWI will cover the local government areas of Tweed, Byron, Ballina, Lismore, Richmond Valley and Kyogle. In this way, a regional solution to water security and catchment health can be progressed.

Current situation

Implementation of the NRWI would involve expenditure of a $150 million package over a 10 to 15 year program of works. It would provide a balance between implementation of on-ground works

(like existing CZMP activities) and conducting the essential research, monitoring and evaluation activities that will guide this investment and measure progress over the duration of the program. Full details are provided in the attached NRWI discussion paper (refer Attachment 2).

Governance

Finance

Preliminary scoping of the scale of work needed to address this initiative indicates that a budget in the order of $150 million over a period of 10 to 15 years would be required.

The purpose of reporting this matter to the NRJO is to secure regional support for making an application for funding to the NSW Government's Snowy-Hydro Legacy Fund. At present, there is no indication of any requirement for co-contributions to qualify for this program.

The consultation and development costs to get the proposal to the NRJO has been funded under existing Council allocations. There is no discrete budget allocated to progress this project beyond this point. Future resourcing requirements would need to be assessed when additional information is available.

Environment

While the Northern Rivers region is recognised as having extremely high terrestrial, aquatic and marine biodiversity values with many species endemic to the region, these catchment and estuarine areas have typically been modified from (pre-European) heavily timbered forests to a

(current) mix of intensive agriculture, grazing and urban development. These changes have placed significant pressures on these natural values, leading to the compromised Ecohealth condition that has been reported. Major and landscape-scale intervention is required to prevent further decline. The NRWI is designed to achieve this required long-term improvement to the environmental values of the Northern Rivers.

Legal

Not applicable.

Planning: Strategic Regional Priorities 2019-2022

Key modules comprising the NRWI deliver against a range of goals and strategic actions identified in the Strategic Regional Priorities 2019–2022 (NRJO, 2018). Table 1 (refer Attachment 1) demonstrates the alignment of the NRWI against the regional priorities that have been established by the NRJO.

Consultation

Development of the NRWI concept has been informed by discussions between the Rous County Council Chair with industry, university, community, and government representatives regarding the progression of initiatives to address river health and flooding in the Northern Rivers catchments. This concept has since been reviewed internally by staff. Additional consultation has

been undertaken at officer-level with representatives from all councils, NSW Government agencies and the research community.

Should the NRJO resolve at its February 2019 meeting to approve the recommendations in this report, Rous County Council would immediately submit the project outline to the NSW Government under the Snowy-Hydro Legacy Fund. Refinement of the project outline would occur through the application process.

Conclusion

The NRWI would integrate both natural flood management measures and implementation of high priority CZMP actions throughout the Tweed, Brunswick, Richmond and Evans River catchments and estuaries. It would consist of the following key modules: soil health improvement; riparian restoration and catchment revegetation; redesigned floodplain drainage to meet contemporary standards; agronomic best management practice; sustainable agriculture reform package (including buy backs); and a scientific framework for landscape design and monitoring.

RECOMMENDATION

THAT the Northern Rivers Joint Organisation:

1. Write to the Premier and Deputy Premier to advise that improving the health of the rivers in region through a program such as the Northern Rivers Watershed Initiative is a priority for funding from the Snowy Hydro Legacy Fund.
2. Support lodgement of the Northern Rivers Watershed Initiative with the NSW Government, subject to confirmation of the Snowy Hydro Legacy Funding criteria, once finalised.

Phillip Rudd

General Manager

Attachment 6:

Table 1: Alignment of the Northern Rivers Watershed Initiative with NRJO Regional Priorities.

Attachment 7

Northern Rivers Watershed Initiative – discussion paper.

7 .5 NORTHERN RIVERS RAIL TRAIL – REQUEST FOR LETTER OF SUPPORT

In May 2014, NOROC wrote to the NSW Minister for Transport to document its support for the development of the Northern Rivers Rail Trail. A copy of this letter and accompanying media release are included below.

The Northern Rivers Joint Organisation has been approached by this group to provide a letter of support for the rail trail and to be documented on their website as a supporter

RECOMMENDATION:

THAT The Northern Rivers Joint Organisation consider providing a letter of support for the development of the Northern Rives Rail Trail

Attachment 8:

Letter from NOROC to Minister for Transport

Attachment 9

Media release – June 2014

7.6 ENQUIRY INTO PETROL AND FUEL PRICES IN THE NORTHERN RIVERS OF NSW

Background

Ballina Shire Council has asked for the Northern Rivers Joint Organisation to support their lobbying efforts to have the Australian Competition and Consumer Commission (ACCC) and the relevant Federal Government Minister to request an enquiry into petrol and fuel prices in Ballina Shire and the Northern Rivers of NSW. This resolution, which originated from a Councillor notice of motion, was unanimously supported by all Ballina Shire councillors at their January 2019 Ordinary meeting.

The following information is an extract from the notes provided in the notice of motion which was submitted by Cr Phil Meehan.

Ballina Shire residents have been expressing their concern and dismay about the high cost of petrol and fuel compared to areas such as the Gold Coast and Brisbane, only one and two hours drive away.

On 3 January, while visiting suburban Brisbane I was staggered when I purchased unleaded 95 petrol for $124.9c per litre. On returning to Ballina that evening, the same petrol from the same retail chain was $159.7c per litre. A 35c per litre or 28% increased price. The price difference for a litre of unleaded 91 was similar, being $112.9c in Brisbane and $145.9c in Ballina.

On the Gold Coast unleaded 91 petrol was as low as $109.9c per litre.

This is a price difference of $21.00 on an average car fuel fill up of 60 litres.

These ongoing high petrol and fuel prices are having a real negative impact on many Ballina Shire residents, families and businesses.

The Australian Competition and Consumer Commission (ACCC) plays a role in monitoring regional fuel prices and competition.

The ACCC states that regional fuel prices may be higher for a number of reasons including transport costs. But a transport cost of 35c per litre to Ballina from Brisbane is not believable. To baffle the transport cost reason, on the same day, 3 January, the price difference for diesel fuel, between the same Brisbane and Ballina outlets was 8c per litre.

The ACCC also states that movements in retail petrol prices in regional locations are largely driven by changes in international refined petrol prices and the AUD–USD exchange rate, just as they are in the five largest cities.

Ballina Shire residents have observed that when the international refined petrol price rises there is generally an immediate increase in local fuel prices. The ACCC states that there should be a delay in a price rise until the current fuel in stock is shifted.

However when the international price drops there is generally a prolonged lag in local prices falling.

Ballina Shire residents have also observed that during the last decade petrol and fuel outlet ownership has become increasingly dominated by the large fuel companies and supermarket chains.

The ACCC is responsible for receiving enquiries and complaints from consumers about fuel prices and related matters. It pays particular attention to issues that may result in a substantial lessening of competition.

When the ACCC identifies a particular concern about petrol prices in a regional area it will:

- *review recent price movements and the structure of the local market*
- *may seek information from local retailers to determine whether there is a need for further investigation.*

If the ACCC believes any competition and consumer laws have been broken, it will investigate the issue further and may take action.

On behalf of Ballina Shire residents I urge Councillors to support Council requesting an ACCC enquiry into petrol and fuel prices in Ballina Shire and the Northern Rivers of NSW.

Note: There is no variation in the fuel excise between Australian States. It is imposed by the Federal Government and is $0.412c per litre for petrol and diesel across Australia. There is no longer the situation where the Queensland Government subsidised the petrol price to make it lower than in Northern NSW.

RECOMMENDATION

THAT the Northern Rivers Joint Organisation support Ballina Shire Council and also make representations to the Australian Competition and Consumer Commission (ACCC) and the relevant Federal Government Minister to request an enquiry into petrol and fuel prices in Ballina Shire and the Northern Rivers of NSW.

7.7 REQUEST FOR ASSOCIATE MEMBERSHIP – DESTINATION NORTH COAST

Background

The following correspondence was received from Michael Thurston, General Manager of Destination North Coast (DNC) requesting consideration of DNC becoming an associate member of the Northern Rivers Joint Organisation.

Destination North Coast NSW

Cr Danielle Mulholland
Chair
Northern Rivers Joint Organisation

3rd January 2019

Dear Councillor Mulholland,

RE: DESTINATION NORTH COAST – ASSOCIATE MEMBERSHIP

Based in Lismore, as the lead agency, Destination North Coast NSW oversees tourism development and management in the region from MidCoast to Tweed Heads including Lord Howe Island. As you may be aware, Destination North Coast launched the 2018-2021 Destination Management Plan that is designed to be a blueprint for tourism in the region. The Plan was based on extensive research and consultation throughout the region.

The aim of the Plan is to help sustainably grow the North Coast visitor economy and in doing so support the NSW Government's goal of doubling overnight visitor expenditure by the year 2020. This includes:

- Attracting an appropriate mix of intrastate, interstate and international visitors;
- Increasing visitation in low and shoulder seasons;
- Encouraging greater dispersal and spend; and
- Ensuring tourism is managed sustainably.

Destination North Coast wishes to join your Joint organisation of Councils as an Associate member. Through greater collaboration with your organisation we believe that we can more effectively achieve common goals whilst increasing the value of tourism for the region.

We look forward to hearing from you.

Kind regards

Michael Thurston
General Manager

ACN 617 918 037 | PO Box 146 LISMORE NSW 2480 | info@dncnsw.com

RECOMMENDATION

THAT the Northern Rivers Joint Organisation invite Destination North Coast to become an Associate Member and to provide a regular report of activities to Board meetings

7.8 DEVELOPMENT OF JO EVALUATION FRAMEWORK

Background

The following letter from the Office of Local Government was distributed to all Mayors in December 2018, requesting the Northern Rivers Joint Organisation participate in designing a strategic evaluation framework for the Joint Organisation initiative

NSW GOVERNMENT Office of Local Government

5 O'Keefe Avenue NOWRA NSW 2541
Locked Bag 3015 NOWRA NSW 2541

Our Reference: A632707
Your Reference:
Contact: Melissa Gibbs
Phone: (02) 4428 4100

Clr Danielle Mulholland
Chairperson
Northern Rivers Joint Organisation
PO Box 146
LISMORE NSW 2480

By email: chair@northernriversjo.nsw.gov.au

Dear Clr Mulholland

Now that Joint Organisations (JOs) have been established across regional NSW, the Office of Local Government (OLG) is in the process of designing a strategic framework for the evaluation of the JO initiative. My purpose in writing to you is to outline the steps OLG is taking in designing the framework and to let you know how JOs and other stakeholder's can get involved.

The NSW Government is committed to ensure that all Government programs are achieving their intended outcomes and providing a net benefit to NSW. All NSW Government agencies are required to conduct evaluations of their programs – both existing and new – to assess their relevance, relationship to government priorities, and efficiency and effectiveness in delivering outcomes. A NSW Treasury Circular outlining evaluation requirements has been issued to all NSW Government agencies, and the evaluation of JOs will be carried out in accordance with the NSW Government Program Evaluation Guidelines.

To assist in the design of the evaluation framework, OLG has contacted a small number of people who have been involved in the development and implementation of the JO model to participate in scoping interviews. Early in 2019, OLG will contact all JO chairs, executive officers, and other stakeholders with an invitation to provide input to the development of the evaluation framework.

I would be grateful if you would bring this matter to the attention of your JO board, and hope your JO will participate in designing the framework when OLG makes contact again in the new year. In the meantime, should you have any queries about this process, please contact Melissa Gibbs, OLG's Director Policy and Sector Development on (02) 4428 4100 or email olg@olg.nsw.gov.au.

Yours sincerely

Tim Hurst
Chief Executive
Office of Local Government

T 02 4428 4100 F 02 4428 4199 TTY 02 4428 4209
E olg@olg.nsw.gov.au W www.olg.nsw.gov.au ABN 44 913 630 046

Strengthening local government

RECOMMENDATION

THAT the Northern Rivers Joint Organisation nominate a representative to participate in the design and development of the evaluation framework.

7.9 NRJO FINANCIAL REPORT TO 31 JANUARY 2019

Financial reports for the period ending 31 January 2019 are included in the meeting papers.

RECOMMENDATION:

THAT the contents of the NRJO financial report for the period ending 31 January 2019 be received and noted.

Created: 1/02/2019 11:41 AM

NoRJO
PO Box 146
LISMORE NSW 2480
ABN: 68 587 813 167
Email: admin@northernriversjo.nsw.gov.au

Balance Sheet

As of January 2019

Assets			
Cash			
Summerland Community First		$5,676.79	
Summerland Saver		$745,619.58	
Debit Card - Chair		$2,000.00	
Debit Card - Exec Officer		$2,000.00	
Debtors			
Trade Debtors		$4,180.00	
Total Assets			$759,476.37
Liabilities			
Current Liabilities			
Trade Creditors			$1,708.03
GST Liability			
GST Collected	$0.86		
GST paid	-$1,453.83		
Payroll Liabilities			
Provision - Staff entitlements	$81.63		
Total Liabilities			$336.69
Net Assets			$759,139.68
Equity			
Retained Earnings			$440,892.93
Current Year Earnings			$318,246.61
Historical Balancing			$0.14
Total Equity			$759,139.68

This report includes Year-End Adjustments.

Created: 1/02/2019 11:41 AM

NoRJO
PO Box 146
LISMORE NSW 2480
ABN: 68 587 813 167
Email: admin@northernriversjo.nsw.gov.au

Job Profit & Loss Statement

January 2019

Account Name	Selected Period	Year To Date
A100 Operational expenses		
Income		
Office of Local Government	$0.00	$300,000.00
Membership	$0.00	$102,893.00
LG Procurement Rebate	$0.00	$36,602.40
Interest Received	$458.90	$3,020.52
Total Income	$458.90	$442,515.92
Expense		
Computer ISP and Registrations	$150.00	$796.50
Consultants	$0.00	$1,940.00
Stationery	$52.73	$82.73
Support services - Admin contr	$3,900.00	$55,200.00
Wages	$940.84	$940.84
Superannuation	$89.38	$89.38
Provision for Staff Entitlemen	$81.63	$81.63
Mileage	$0.00	$89.76
Recruitment	$0.00	$3,818.18
Travel expenses (non payroll)	$0.00	$875.12
Workers Comp Insurance	$1,493.66	$1,493.66
Bank charges	$0.00	$76.24
Event Catering	$0.00	$50.45
Project Contributions	$0.00	$8,000.00
Meeting Catering	$0.00	$751.19
Computer Equipment	$2,129.54	$2,129.54
Total Expense	$8,837.78	$76,415.22
Net Profit/(Loss)	-$8,378.88	$366,100.70
A102 Chair costs		
Expense		
Travel expenses (non payroll)	$0.00	$289.92
Board Travel (non payroll)	$0.00	$1,280.59
Meeting Catering	$0.00	$14.82
Total Expense	$0.00	$1,585.33
Net Profit/(Loss)	$0.00	-$1,585.33
B101 Regional Priorities Workshops		
Expense		
Consultants	$5,505.00	$11,010.00
Printing	$1,284.00	$1,284.00
Event Catering	$0.00	$22.48
Meeting Catering	$0.00	$327.28
Total Expense	$6,789.00	$12,643.76

This report includes Year-End Adjustments.

NoRJO
PO Box 146
LISMORE NSW 2480
ABN: 68 587 813 167
Email: admin@northernriversjo.nsw.gov.au

Job Profit & Loss Statement

January 2019

Account Name	Selected Period	Year To Date
Net Profit/(Loss)	-$6,789.00	-$12,643.76
B102 Freight and Supply Chain Study		
Expense		
Project Contributions	$0.00	$50,000.00
Total Expense	$0.00	$50,000.00
Net Profit/(Loss)	$0.00	-$50,000.00
C101 Myroadinfo		
Income		
Myroadinfo	$0.00	$33,725.00
Total Income	$0.00	$33,725.00
Expense		
Myroadinfo costs	$0.00	$17,350.00
Total Expense	$0.00	$17,350.00
Net Profit/(Loss)	$0.00	$16,375.00

This report includes Year-End Adjustments.

8 URGENT BUSINESS

9 CONFIDENTIAL REPORTS

10 CORRESPONDENCE

10.1 RSM Community Transport Inc

RSM Community Transport Incorporated
33 Walker Street/PO Box 152
CASINO NSW 2470
Phone: (02) 66 627 940
Coordinator: coordinator@rsmct.com.au

16 November 2018

Tim Williamson
Northern Rivers Joint Organisation
PO Box 146
LISMORE NSW 2480

Dear Tim

Thank you for allowing me this opportunity to introduce myself. My name is Jodi Morriss and I am the Coordinator of RSM Community Transport Incorporated (RSMCT), which was formed in response to the pending closure of the Uniting Care Casino Transport Team (UCCTT), a service that operated locally for 19 years.

In its first year of operation, UCCTT provided 77 one-way trips to medical and specialist appointments that other local transport providers such as HART were unable to fulfil. By the end of 2017, this number had increased to 6,172 trips.

RSMCT provides transport to medical appointments for people residing within the Richmond Valley and Kyogle shires who are disadvantaged and do not have access to alternative transport. Due to our regionally isolated location, we are often required to transport clients to specialist appointments across the border, as we do not have specialist services locally. Transport has been provided from Coffs Harbour in the South, Armidale in the West to Ballina in the East and the Gold Coast and Brisbane in the North.

We have a vehicle which has been modified to take wheelchairs which we call the Caddy. We ask clients to provide a donation if they can; client donations cover the cost of fuelling the Caddy and the fundraising committee raises money to provide ongoing vehicle maintenance.

We only have one vehicle and we average approximately 100 trips per week, so volunteers are required to use their own vehicles to transport clients to medical appointments. The drivers are not paid for their time; we reimburse them for fuel at a rate of 60cents per kilometre. The client donations only cover a portion of the cost to the service.

We would appreciate any support that the Northern Rivers Joint Organisation could provide to assist RSM Community Transport moving forward.
Thank you for your time.

Kind regards

Jodi Morriss

RSMCT Coordinator

4 December 2018

Ms Jodi Morriss
RSM Community Transport Inc
PO Box 152
Casino NSW 2470

Dear Ms Morriss,

Thank you for your letter of 16 November 2018 wherein you seek assistance from the Northern Rivers Joint Organisation. Members of the Northern Rivers Joint Organisation Board are aware of your organisation and the important work that you undertake for the region, particularly in the Richmond Valley and Kyogle areas.

At this time, the Joint Organisation does not have any financial resources that it can provide your organisation, however we will make sure that you are updated with relevant funding programs that arise from time to time. Further to this, the federal government provides very useful databases of grant and other assistance programs which can be found at business.gov.au and dss.gov.au and www.dss.gov.au/grants/grant-programs.

I can also suggest that organisations such as your local Council, Regional Development Australia – Northern Rivers and Social Futures provide information on upcoming grant opportunities. You just need to sign up for their regular newsletters.

Should you find any program that will be of assistance, the Joint Organisation will be pleased to consider providing a letter of support for any appropriate funding opportunities. Should you need any further assistance or clarification please do not hesitate to contact me on 0407 724 110

Regards

Tim Williamson
Interim Executive Officer
Northern Rivers Joint Organisation

NORTHERN RIVERS JOINT ORGANISATION
Phone 0409 558 758
Email admin@northernriversjo.nsw.gov.au
Web www.northernriversjo.nsw.gov.au
Post PO Box 146, Lismore, NSW 2480
ABN 68 587 813 167

10.2 NSW Office of Fair Trading

NSW GOVERNMENT | Fair Trading

Registry Services
PO Box 22
Bathurst NSW 2795

Toll Free 1800 502 042 Ph 6333 1400
TTY 1300 723 404

ABN 81 913 830 179

Email: registryinquiries@finance.nsw.gov.au
www.fairtrading.nsw.gov.au

Our Ref: N4637584

MS DONNA MCINTYRE
PO BOX 146
LISMORE NSW 2480

admin@northernriversjo.nsw.gov.au

Dear Client

Re: NORTHERN RIVERS REGIONAL ORGANISATION OF COUNCILS INC- Y0450938

I refer to your application to cancel - **NORTHERN RIVERS REGIONAL ORGANISATION OF COUNCILS INC - Y0450938** pursuant to section 72 of the *Associations Incorporation Act 2009*.

NORTHERN RIVERS REGIONAL ORGANISATION OF COUNCILS INC – Y0450938 was cancelled 21/12/2018. Notice of the cancellation appeared in the NSW Government Gazette 21/12/2018.

If you require any further information please review the fact sheets on the Fair Trading website www.fairtrading.nsw.gov.au/ftw/Cooperatives_and_associations.page prior to contacting Registry Services.

Yours sincerely

Terri McArthur
Customer Service Officer
Registry Services
21 December 2018

Seasons Greetings

Registry Services will close for the Christmas / New Year period from Monday 24 December 2018 and will re-open on Monday 7 January 2019.

10.3 Waste to Clean Energy Technology – Concord blue Energy Australia

Attachment 10:

Concord Blue presentation

CONCORD BLUE ENERGY
Australia

18 July 2018

Cr Danielle Mulholland
President
NOROC
PO Box 146
Lismore NSW 2480

Dear Cr Mulholland

Concord blue Energy Australia - Superior Waste to Clean Energy Technology

Further to your request, wishing to assist the members of the NOROC group with establishing an informed view of Concord Blue Energy *Waste-to-Energy technology*, herewith an introductory collection of information.

The superior design and technology of Concord Blue Energy (CBE) reformers, not simply deals efficiently with the growing municipal waste burden, in addition to clean energy production, it can deliver a variety of valuable output options, subject to feed stock.

To get the *Waste-to Energy* conversation underway, it is prudent that the dialogue is focused on the technology and where on the "recovery spectrum," the NOROC collective sits.

Although much is written and talked about it at Council meetings across the nation, *Waste-to-Energy* remains, very much, an uncharted journey. Consensus to do it and actual commitment can take years.

The notion that everyone has the same garbage, is garbage. The NOROC cluster of Councils' waste orientation appears to be agribusiness, manufacturing and tourism.

A pre-feasibility study will identify the amount and assortment of waste NOROC collectively produces annually, which determines the design and size of the CBE reformer, the electricity and additional valuable output the installation can generate.

Taking into consideration population and industrial growth projections for the NOROC region, given the scalability of the CBE technology, the installation can be designed to cater for future needs.

Other factors identified, that appeal to local governments include but are by no means limited to; Concord Blue Energy Australia is not an agent, whilst the technology is German and the reformer module is built by Lockheed Martin, the overall installation and maintenance is carried out by our Australian team.

The first CBE reformer was commissioned in 2002. Since that time, CBE plants have been commissioned in the USA, Europe, India and Japan, this is reliable and proven technology that enjoys a strong social licence.

Insofar as EPA is concerned, the CBE reformer does not expel Dioxins or Furans. The CBE technology meets the EPA standards of Germany, UK, USA, India and Japan. The nearest CBE installation in our region is Singapore, the development of which is currently in progress.

"Pacific Tower" 737 Burwood Road
Hawthorn VIC 3122 Australia
(PO Box 1059, Croydon VIC 3136 Aust.)
ABN: 19 105 740 485
Phone: +61 3 8862 6363
Website: www.concordblueenergy.com

The establishment of the CBE platform in Australia is welcomed at both State and Federal levels. Additional to government funding means and options, the Australian finance sector is putting forward competitive offers for two CBE projects, currently in the pre-feasibility stages.

To allow further insight into CBE technology we have provided you with our “Frequently Asked Questions” summary, together with a short presentation.

Should there be interest, we will be pleased to share a more complete and moderately technical presentation with the NOROC collective, at a venue of your choice and mutually manageable time frame.

Our attendance is subject to NOROC providing return air travel from and to Melbourne, ground transport to and from the venue, one night’s accommodation (room only) for two (2) people.

There are inherent advantages that Municipal clusters such as NOROC can capitalize on, in dealing with the *Waste to Energy* challenge, when directly in consultation with the technology providers who are eager to establish their first Australian facility.

Kind Regards

Jennifer McQueen
Concord Blue Energy, Australia

CONCORD BLUE ENERGY
Australia

Frequently Asked Questions

What type of feedstock (waste) can Concord Blue Reformers take?
Our versatile process creates clean energy utilizing a variety of waste streams, including municipal solid waste, biomass, sewage, manufacturing waste, plastic waste, hospital waste, agricultural and slaughter waste, and any other organic waste material. Regardless of the feedstock used, we offer a variety of options for the type of output produced.

What can the syngas and other materials produced by the towers be used for?
Our Concord Blue Reformers produce sustainable energy sources, such as syngas, electricity, liquid fuels and hydrogen. These products can serve as a clean alternative to polluting fossil fuels. In addition, our process creates many desirable by-products, including biochar, clean water, ash (used in fertilizer and construction), heat for conversion of energy, heat for producing hot water, and heat for cooling (water or air conditioning).

Do Concord Blue Reformers produce any pollution?
Concord Blue's unique technology produces virtually no pollution or undesirable by-products. Unlike other waste-to-energy processes that rely on incineration of the waste material, Concord Blue Reformers use heat transfer in an oxygen-starved environment to fully convert the feedstock. With no flame, the amount of pollution created by the process is vastly reduced.

Are Concord Blue Reformers expensive to operate?
Cost-effectiveness is built into the Concord Blue system. Concord Blue Reformers operate using an energy-saving, closed-loop process that requires no additional power once the conversion begins. Additionally, because the process takes place in an oxygen-starved environment, our facilities do not produce toxic oxidized pollutants—eliminating the need for costly add-on scrubbers to clean emissions.

What problems does Concord Blue solve with its waste-to-energy technology?
Concord Blue utilizes nearly any organic waste material as a resource to produce clean energy, contributing to global sustainability by helping to reduce our society's dependence on landfills and fossil fuels. Because Concord Blue can scale up or down to meet nearly any need, we can bring the economic and environmental benefits of clean waste recycling to a wide range of communities and businesses. Additionally, our technology can enable energy independence with domestic production of renewable fuel.

Which types of waste can Concord Blue® utilize?
Waste streams can include municipal solid waste, biomass, sewage, manufacturing waste, plastic waste, hospital waste, oil sludge, and any other organic material. Because Concord Blue plants don't depend on the cost-efficient availability of a single feedstock, our technology has broad, worldwide application.

What are the possible applications for the CBR® syngas?
Concord Blue's technology produces the highest quality syngas, which is rich in hydrogen and delivers high heating values. Our syngas has five main applications: to fuel a gas engine for high-efficiency electric power production, for pure hydrogen production, for ethanol production, as a replacement or blender for natural gas, and as a raw material for synthesis gases and biofuels.

What is special about the Concord Blue® process compared with other waste-to-energy technologies?
Concord Blue® technology is far more efficient than any other waste-to-energy technology. Decomposition of the feedstock (thermolysis) and refinement of the gas produced (reforming) takes place in separate reactors. This staged reforming allows for more precise control of the process and ultimately increases the overall efficiency of the plant. Additionally, the Concord Blue process takes place in an oxygen-free environment, which means no incineration or pollution.

What is the difference between Concord Blue® and a biogas plant?
In a biogas plant, biomass is "eaten up" by micro-organisms under exclusion of air. Gas is produced as a digestive or metabolic product, referred to as fermentation or anaerobic fermentation. Biogas mainly consists of methane and carbon dioxide and is produced at temperatures below 100 °C. The micro-organisms are not able to digest all the material, so complete conversion of organic matter is not possible and there is a substantial waste by-product. Concord Blue® plants, however, operate at temperatures above 500 °C, fully converting the feedstock. Concord Blue® syngas contains a large amount of hydrogen, which usually does not exist in biogas. The Concord Blue Reformer is able to achieve much higher efficiencies without the waste by-products.

What kind of solid waste is left over in the Concord Blue Reformer®? Is waste water created?
The solid waste remaining in the Concord Blue Reformer™ consists primarily of the mineral components of the utilized regenerative feedstock (i.e., ash). Our process does not produce waste water, and Concord Blue® plants do not produce pollution. Organic pollutants are completely broken down in the CBR™, and even the remaining solid waste (ash) can be marketed profitably.

Are heavy metals or toxic gases produced in the Concord Blue Reformer®?
Heavy metals are not produced in the process. The gases formed during thermolysis (thermal decomposition) of organic wastes is further refined into high-quality syngas at a temperature of 1050 °C in the reformer by addition of steam. Our syngas contains mainly hydrogen and is a valuable product gas that can be used for hydrogen or energy production. The carbon dioxide which is still part of the syngas is CO2-neutral. Another minor component of the syngas is carbon monoxide as well as a small amount of residual methane. As a combustible gas, carbon monoxide (CO) serves as a source of energy and is therefore an important component of the gas produced by the Concord Blue Reformer®.

Where are CBE plants in operation?
The global network of CBE plants outside Germany includes United States of America, India and Japan. CBE facilities contracted or under construction are in the United Kingdom and Singapore, soon to be joined by Australia.

How long does it take to build a Concord Blue Reformer®?
From the initial order or contract to operation, the lead time is 15 to 24 months, depending on location, local conditions and infrastructure, plant specification, plant volume and feedstock.

What is the approximate footprint of a CBE Reformer?
Whereas conventional WTE installations occupy large plots of land, the CBE reformer technology relies on a gravity feed system, utilising a tower design. One of the most compact CBE plants constructed occupies just over 1000m². Dimensions however are dictated by the waste input type and volume and output requirements. A CBE plant capable of generating electricity for a small township, would still be far more compact, compared with alternative WTE installations.

Cooperative Cluster Installations
Whether a collection of manufacturing plants or a cluster of municipalities, the CBE technology is readily adapted to deliver clean energy solutions for either application. Food processors, abattoirs, bakeries and markets are ideal waste mix companions, general municipal and hospitals waste are another productive combination, for defraying system acquisition costs.

11 ATTACHMENTS

Attachment 1:

Draft minutes of the Ordinary meeting of the Northern Rivers Joint Organisation held 2 November 2018

MINUTES OF THE ORDINARY MEETING OF

THE NORTHERN RIVERS JOINT ORGANISATION

HELD IN THE KYOGLE COUNCIL CHAMBERS

STRATHEDEN ST, KYOGLE

ON FRIDAY 2 NOVEMBER 2018 AT 11.00AM

ATTENDANCE

Crs Danielle Mulholland (Chair), Isaac Smith, Robert Mustow, Katie Milne; David Wright

Louise McMeeking, Dept of Premier and Cabinet;

Tim Williamson (Interim Executive Officer), General Managers Troy Green, Vaughan MacDonald, Graham Kennett, Paul Hickey. James Brickley from Byron Shire Council attended in place of Mark Arnold

Elizabeth Tydd, Information Commissioner; Steve Robb, NSW Electoral Commission

Virginia West (Scenic Rim Council), Cr Keith Williams (Rous Water)

Ms Sue Higginson, Greens Candidate for Lismore

1. ACKNOWLEDGEMENT OF COUNTRY

In opening the meeting, the Chair provided an Acknowledgement of Country.

2. APOLOGIES

Apologies were received from Cr Simon Richardson and Mr Mark Arnold, Byron Shire Council, Ms Anita Gambhir, NSW Office of Local Government; Cr Peter Petty and Mr Terry Dodds, Tenterfield Shire Council and Ms Shelly Oldham, Lismore City Council.

02112018/1 RESOLVED

Moved: Cr Mustow/Cr Smith

THAT the apologies for the NRJO meeting held 2 November 2018 be accepted

CARRIED

FOR VOTE - All Councillors voted unanimously.

3. DECLARATIONS OF INTEREST

No Declarations of Interest were noted

4. ADDRESS BY OFFICIAL VISITORS

Ms Sue Higginson, Greens Candidate for Lismore addressed the meeting to outline their regional development policies.

Elizabeth Tydd, Information Commissioner provided an update on the role of the Information Commissioner and new initiatives being rolled out by the IPC

Steve Robb from the NSW Electoral Commission provided information relating to the upcoming 2020 local government elections.

Copies of both presentations will be circulated with the meeting minutes.

5. CONFIRMATION OF MINUTES

5.1 Confirmation of Minutes – NRJO meeting 5 October 2018

02112018/2 RESOLVED

Moved: Cr Mustow/Cr Smith

THAT the Minutes of the Extraordinary Meeting of the Northern Rivers Joint Organisation held Friday 5 October 2018 be adopted as a true and accurate record of proceedings of that meeting.

CARRIED
FOR VOTE - All Councillors voted unanimously.

6. NOTICES OF MOTION

NIL

7. REPORTS

7.1 Adoption of Northern Rivers Joint Organisation Draft Code of Meeting Conduct

02112018/3 RESOLVED

Moved: Cr Smith/Cr Wright

That the revised Sections 4, 12 and 15 of the Northern Rivers Joint Organisation Code of Meeting Practice be adopted

CARRIED
FOR VOTE - All Councillors voted unanimously.

7.2 Chair's Report

02112018/4 RESOLVED

Moved: Cr Mustow/Cr Wright

THAT the verbal report provided by Cr Smith be noted

CARRIED

FOR VOTE – All Councillors voted unanimously.

7.3 Executive Officer's Report

02112018/5 RESOLVED

Moved*:* Cr Smith/Cr Wright

THAT the Executive Officer's Report be received and noted.

CARRIED
FOR VOTE - All Councillors voted unanimously.

A proposal to support an event being organised by NSW Business Chamber, Sourdough Group and RDA Northern Rivers was discussed.

02112018/6 RESOLVED

Moved*:* Cr Smith/Cr Wright

THAT the NRJO provides $8,000 from its operational funds to support the NSW Business Chamber event.

CARRIED
FOR VOTE - All Councillors voted unanimously.

7.4 Biodiversity Shared Resource

02112018/7 RESOLVED

Moved: Cr Smith/Cr Wright

THAT the Committee:

1. *Receive and note the report*
2. *Review and comment on the draft consultant's brief*
3. *Confirm funding of $41,500 for the proposed work and that a request for quotation is to be issued accordingly*

CARRIED
FOR VOTE - All Councillors voted unanimously

7.5 Regional Strategic Priorities

02112018/8 RESOLVED

Moved: Cr Mulholland/Cr Milne

THAT the Strategic Priorities and Year One Action Plan for the Northern Rivers Joint Organisation be adopted as tabled

CARRIED
FOR VOTE - All Councillors voted unanimously

7.6 NRJO Financial reports to end September 2018

02112018/9 RESOLVED

Moved: Cr Mustow/Cr Smith

THAT the contents of the NRJO financial report for the period ending 30 September 2018 be received and noted.

CARRIED
FOR VOTE - All Councillors voted unanimously

8. URGENT BUSINESS

8.1 NOROC Financial Reports

Documentation circulated to members 31/10/18

02112018/10 RESOLVED

Moved: Cr Mustow/Cr Milne

THAT the audited financial statements for NOROC be accepted

CARRIED

FOR VOTE - All Councillors voted unanimously

8.2 Tweed Aboriginal Advisory Committee

Item raised by Cr Milne via email 1/11/18

02112018/11 RESOLVED

MOVED: Cr Milne/Cr Smith

THAT the NRJO accept the request of the Aboriginal Advisory Committee to make a presentation to the Committee at its February meeting

CARRIED

FOR VOTE - All Councillors voted unanimously

8.3 Recruitment of Executive Officer

Documentation circulated to members 31/10/18

02112018/12 RESOLVED

MOVED: Cr Mustow/Cr Milne

That the Joint Organisation considers the confidential business of the Appointment of the Interim Executive Officer in a meeting closed to the public in accordance with Section 10A(2)(a) of the Local Government Act 1993.

CARRIED

FOR VOTE – Unanimous vote

The meeting moved into closed session at 12.17pm

Non-voting members Cr K Williams and Ms L McMeeking remained

02112018/13 RESOLVED

MOVED: Cr Mustow/Cr Milne

1. *THAT interviews be conducted as recommended in the October 30, 2018 Recruitment Report from Mr Mike Rayner (ie the top SEVEN)*
2. *THAT the interview process consist of an initial interview with the nominated panel, with the top 2 (max 3) candidates from this process to then present to the full NRJO Board to determine and appoint the preferred candidate.*
3. *THAT the interview panel consist of Mike Rayner, the Chair Cr Danielle Mulholland and any other NRJO Mayors that are available to attend and the interim Executive Officer Tim Williamson*

02112018/14 RESOLVED

MOVED: Cr Mustow/Cr Smith

THAT the Joint Organisation moves out of closed meeting session and into open meeting session and the Chairperson read the resolutions made during closed meeting session.

CARRIED

FOR VOTE – Unanimous vote

The meeting moved out of closed session at 12.23pm. The resolutions from the closed session were read out loud by the Chair.

9. CONFIDENTIAL REPORTS

No confidential reports were received.

10. CORRESPONDENCE

Correspondence was noted

Meeting closed 1.17pm

Next meeting Friday 8 February 2019

Tweed Shire Council

Minutes approved

D Mulholland

Chair

Attachment 2:

Draft minutes of the Extraordinary meeting of the Northern Rivers Joint Organisation held 7 December November 2018

MINUTES OF THE EXTRAORDINARY MEETING OF

THE NORTHERN RIVERS JOINT ORGANISATION

HELD IN THE BALLINA SHIRE COUNCIL CHAMBERS

CHERRY ST, BALLINA

ON FRIDAY 7 DECEMBER 2018 AT 11.00AM

ATTENDANCE

Crs Danielle Mulholland (Chair, via teleconference), Isaac Smith (via teleconference), Robert Mustow, Katie Milne; David Wright;

Tim Williamson (Interim Executive Officer)

1. ACKNOWLEDGEMENT OF COUNTRY

In opening the meeting, the Chair provided an Acknowledgement of Country.

2. APOLOGIES

3. DECLARATIONS OF INTEREST

No Declarations of Interest were noted

4. CONFIDENTIAL ITEM FOR CONSIDERATION

4.1 RECRUITMENT OF EXECUTIVE OFFICER

07122018/2 RESOLVED

Moved by Cr Robert Mustow, Seconded by David Wright

1. the Board accepts the Interview Panel's recommendations for the Executive Officer position.
2. Subject to successful referee checks, the Chair and Interim Executive Officer negotiate terms and conditions within the Standard Contract guidelines.

CARRIED

FOR VOTE – Unanimous vote

Attachment 3:

Circular Resolution December 2018

CIRCULAR RESOLUTION

DECISION TO BE RATIFIED – December 2018

Background

An Extraordinary Meeting of the Northern Rivers Joint Organisation was held on Friday 3 December to accept the Interview Panel's recommendations for the Executive Officer position. Following successful referee checks, the Chair and Interim Executive Officer negotiated terms and conditions within the Standard Contract guidelines. An offer of employment was made and accepted by Ms Isabel Perdriau. The following resolution is required to confirm the appointment:

1. *That the Board appoint Ms Isabel Perdriau to the position of Executive Officer of the Northern Rivers Joint Organisation, commencing Monday 21 January 2019.*

Following the appointment of the Executive Officer, changes will need to be made to the delegations held for the Northern Rivers Joint Organisation by Summerland Credit Union. To comply with the banking regulations the following resolutions will need to be ratified:

1. *That the Board nominates Executive Officer Isabel Perdriau as a "Beneficial Owner" of the Joint Organisation bank accounts.*
2. *That two of following three signatories be required to sign and approve payments: The Chair, the Executive Officer and the General Manager of the Council to which the Chair belongs*
3. *That Tim Williamson be removed as authorised signatory and beneficial owner of the NRJO bank accounts*
4. *That the Board approve Visa debit cards to be issued to Isabel Perdriau. This card will be attached to an individual Everyday account under the Northern Rivers Joint Organisation main account. This account will be 'one to sign' only. A limit of $2000 will apply to this card.*
5. *That the debit card issued to Tim Williamson be cancelled*

These changes are to take effect from 21 January 2019

Approved:

_____

Attachment 4:

Rous County Council – Regional water related projects

Regional Water Related Projects

Purpose

The purpose of this report is to advise the Northern Rivers Joint Organisation (NRJO) on regionally significant water related initiatives or projects that have been identified by the region's Councils whereby NRJO can seek either State or Federal funding or lobby on behalf of the region.

Background

In October 2018, the Northern Rivers Joint Organisation (NRJO) requested that both the region's Water and NRM Managers groups submit a report on potential regional water related projects that the NRJO can use to petition State or Federal governments for funding or that NRJO can lobby these levels of Government for the beneficial outcome to the region.

Rous County Council liaised with the region's Councils and below is a list of projects that were tabled to be considered by the NRJO:

Northern Rivers Regional Bulk Water Supply Strategy	
Synopsis	To progress the action plans to assist in determining a preferred option for the region
Estimated project cost	$1.44M

Overview:

In 2013, the Northern Rivers Regional Organisation of Councils (NOROC) developed a long-term regional water supply strategy. The objectives of this strategy were to evaluate the potential benefits to future water supply security resulting from a regionally integrated system. That study identified numerous interconnection and supply scenarios that warranted further development in future stages for the long-term strategy.

The study included a prioritised Action Plan with budget cost estimates for the short-term (2015-2018), medium-term (2019-2024) and long-term (2025-2035) of the plan.

The Regional Bulk Water Supply Study - action plan is subject to a separate report to the NRJO.

Synopsis	Toonumbar Dam and potential integration into the Bulk Water Supply Strategy
Estimated project cost	Total cost is unknown at this stage.

Overview:

Toonumbar Dam is operated by WaterNSW. Potential exists to raising this dam and utilising this additional capacity in the regional bulk water supply strategy. Interconnection between the Casino and Rous distribution systems would also be required. The key actions that are required to progress to the potential of integrating Toonumbar Dam as part of the regional source options are:

1. WaterNSW to assess secure yield and supply capacity from existing Toonumbar Dam.
2. WaterNSW/NRJO to assess the feasibility of options for increasing capacity of Toonumbar Dam as part of a regional water strategy.
3. Richmond Valley Council to review the potential for Toonumbar Dam (both existing and augmented) for alternative source options for Casino water supply secure yield assessment.

Given the potential costs and resources required to complete these investigations, it is requested that the NRJO lobby WaterNSW to fully fund these items and finalise as soon as practicable.

Tweed Shire Council water security projects	
Synopsis	To progress initiatives to improve the overall water security within the Tweed Shire.
Estimated project cost	$37M

Overview:

1. Raising of Clarrie Hall Dam

Undertaking the planning and land acquisition for the raising of the dam with the objective of securing the water supply to 2046.

Cost of this first stage is $20M. Total project cost is estimated to be in the order of $68M.

The raising of Clarrie Hall Dam will provide secured water supply for the Tweed Shire and the potential of source water for the region.

2. Link to SEQ

Undertaking feasibility and options study plus conduct of cross border negotiations. This will provide a contingency supply in the event of a gross failure of the Tweed District Water Supply system.

Estimated total cost: $15M.

Outcome will provide a pipeline link between the Tweed District Water Supply and the SEQ Grid.

3. Bray Park Weir

Undertaking optional study to determine measures to mitigate against the salt water contamination of the Tweed District Water Supply caused by sea level rise and lower stream flows. Identify and implement mitigation measures.

Cost at this stage is not known.

With sea level rise and lower stream flows there is a greater propensity for salt water to enter the Bray Park weir pool where Tweed draws its raw water. The salt water contamination of the weir pool is considered an unacceptable risk to the Tweed District Water Supply.

4. Uki WTP

Upgrade the Uki WTP so that it meets current health based targets.

Estimated total cost: $2M.

Concept design completed. Tweed Shire Council will be completing a design and construction tender for the project.

LWU Management of Biosolids containing PFAS	
Synopsis	To determine feasible options for reuse of Biosolids containing PFAS.
Estimated project cost	Estimated project cost: $15,000 (+ sampling which is $250 per sample).

Overview:

PFAS has recently emerged as a contaminant of concern, and the cost of managing biosolids containing PFAS has the potential to significantly adversely impact local water utilities (LWU). In particular, beneficial reuse of biosolids may no longer be feasible for biosolids containing PFAS. This project aims to quantify the impact on LWUs of managing biosolids containing PFAS and investigate feasible management options for biosolids containing PFAS that are affordable for communities.

The investigations will take about six months.

Coastal Zone Management Plan	
Synopsis	Total Catchment Management – Northern Rivers Watershed Initiative
Estimated project cost	$150 million over 10 to 15 years

Overview:

To provide long-term funding or leveraged funding for a large and diverse range of initiatives that both increase the quality of the natural waterways while reducing flood risks and recovery costs.

Satisfies a number of funding key principle areas:

- Decrease in flood risks means less impact to regional centres.
- Absolute focus on improving water quality, groundwater supplies, better management of water, floodwater.
- Water is one of the regions natural strengths to support agriculture, rural lifestyles, fisheries and tourism.
- Best practise water management is a key ingredient for sustained social, economic, and environmental wellbeing.
- Promotes commercial opportunities through an innovative approach to water management, new research and through strategic investment to enliven environments and reduce flood risk to urban economies.
- A path to skilling labour force through new industries, world leading services and approaches, research and development, and on ground work. Part of the ambition of smarter, cleaner and greener economies.

Poor water management leads to a range of issues which reduce opportunities (e.g. oyster farming not viable), waste environment assets (e.g. soil), have a direct impact for state/private sector funds (e.g. flood damage).

The Northern Rivers Watershed Initiative is subject to a separate report to the NRJO.

Richmond River Coastal Zone Management Plan continued	
Synopsis	Richmond River catchment wide water quality/river health strategy and works program
Estimated project cost	TBC

Overview:

The condition of upstream catchments is a major determinant of river health downstream. Investment in upstream catchments assists in the management of pollution risks (erosion/sediments, nutrients) at the original source of this pollution. This has the effect of improving the ecological condition/water quality conditions at the upstream source and downstream locations. To complement and leverage from the investment (and outcomes) within the CZMP footprint major investment in river health in the Richmond River catchment is required.

Key elements of the recommended catchment-wide approach:

1. **Oversight/Governance framework:** A major river health program requires substantial planning, assessment, implementation, monitoring and reporting of actions. This will be the subject of the OEH Governance Review.

   Est. funding required: Dependent on the outcome OEH Governance Review.

2. **Catchment-wide riparian condition assessment and prioritisation process:** While a desk-top study has been conducted within the CZMP-footprint only (i.e. not whole of catchment) a systematic catchment-wide riparian condition assessment and prioritisation is required.

   Est. funding required: $250,000. This could be implemented immediately.

3. **Catchment-wide river health improvement strategy and scheme:** It will be critical that following completion of the systematic catchment-wide riparian condition assessment and prioritisation process, that funds are available to first develop detailed plans and then implement and monitor the on-ground works.

   Est. funding required: Subject to further discussion and scoping.

   Landscape-wide change will require significant investment, and a commitment to work across all key land uses in partnership with relevant stakeholders (comparable to the Wilsons River Catchment Management Plan (CMP)). For example, the CMP recommended a 10-year investment of approx. $1.4M p.a (in 2018 costs) for 566 km^2. The Richmond River catchment is 6,862 km^2 which equates to a $17M p.a. investment.

4. **Catchment-wide Ecohealth assessment:** Regular (5 yearly) assessments of eco-health status of the catchment should be completed. The last assessment was published in 2014.

   Est. funding required: $200,000 every 5 years. This could be implemented immediately in order to meet the 5-year interval target.

Wastewater management	
Synopsis	Ongoing onsite sewerage management inspections and movements – regional improved homeowner management, education and engagement
Estimated project cost	$100,000

Overview:

The project has been developed from a need to enable regional Councils/water utilities to effectively deliver education, resulting in decreased system failure. Current approaches to education and engagement with landholders/owners are inconsistent with the lack of regionally-specific educational resources and tools being a significant barrier to system performance.

A funding application to the NSW Environmental Trust is being prepared for lodgement by RCC on behalf of NRJO Councils to develop this program. Further lobbying on behalf of this project by the NRJO is recommended.

NJRO - Strategic Regional Priorities 2019-2022

The NRJO strategic regional priorities are the guideline principles whereby working collaboratively will achieve positive outcomes for the Northern Rivers as a whole. The water related projects nominated in this report are linked to goals 9 as well as goals 1 and 2. Advocacy for the region's interests in relation to justifiable new water sources or augmentation projects as well as long term sustainable sewage services are a foundation of the strategy. The water related projects identified in this report are also linked to the Strategic Regional Priorities by ensuring the biodiversity and the health of our waterways to enhance environmental, economic and recreational benefits for current and future generations.

Budget

The budget for the relevant initiatives or projects has been identified within the relevant sections of this report.

Conclusion

The NJRO has requested that the regions Water and NRM managers identify initiatives or projects that can progress through the NJRO. Whilst there are a significant number of water related projects currently progressing in the region, only a select few have a regional element. These projects have been included in this report for the NRJOs consideration on their future involvement.

RECOMMENDATION that the Northern Rivers Joint Organisation receive and note the report.

Phillip Rudd
General Manager

Attachment 5:

Northern Rivers Joint Organisation - N.R. Regional Bulk Water Supply Study - Review of Action Plan

Hydrosphere Consulting

Northern Region Joint Organisation

Northern Rivers Regional Bulk Water Supply Study:

Review of Action Plan

Final Draft

November 2018

Disclaimer:

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PROJECT 18-040 – REVIEW OF BULK WATER SUPPLY ACTION PLAN

REV	DESCRIPTION	AUTHOR	REVIEW	APPROVAL	DATE
0	Draft for review	R. Campbell	M. Howland	M. Howland	30 July 2018
1	Final draft	R. Campbell			14 November 2018

CONTENTS

TABLES

1. INTRODUCTION

In 2013, the Northern Rivers Regional Organisation of Councils (NOROC, now the Northern Region Joint Organisation) developed a long-term (50-year) regional water supply strategy in order to evaluate the potential benefits to future water supply security resulting from a regionally integrated system. The study (Hydrosphere Consulting, 2013) investigated numerous interconnection and supply scenarios to identify options that warrant further development in future stages of the strategy development. To progress the development of a regional water supply strategy, the study recommended various investigations including:

- Regional investigations that are specific to the regional approach and would require cooperation between the Local Water Utilities (LWUs, Rous County Council, RCC; Tweed Shire Council, TSC; Kyogle Council, KC; Ballina Shire Council, BaSC, Byron Shire Council, BySC; Lismore City Council, LCC and Richmond Valley Council, RVC); and
- Strategic planning including yield studies, monitoring, water loss management and demand management.

The study included a prioritised Action Plan with budget cost estimates for the short-term (2015-2018), medium-term (2019-2024) and long-term (2025-2035) of the plan.

The Northern Region Joint Organisation has requested a review of the Action Plan to document the status of water resource planning undertaken individually or collectively as well as any future plans for water supply development in the region. A revised Action Plan has been prepared with consideration of potential external funding (through the current NSW Government's Safe and Secure Water Program).

2. ACTION PLAN STATUS

2.1 Recent LWU Strategic Planning

Liaison with the Joint Organisation LWUs has been undertaken to establish the activities undertaken since the 2013 study was prepared and the future direction for water supply planning and water source development (refer Table 1).

Table 1: Summary of recent LWU strategic planning

LWU	Recent Action	Planned Future Direction
Rous County Council	• The Future Water Strategy adopted in 2014 includes the following main components: o Enhanced Demand Management; o Groundwater investigations. • Bulk supply system yield study completed in 2015; • Regional Drought Management Plan (RCC, BaSC, BySC, LCC and RVC) adopted in 2016; • Regional Demand Management Plan (RCC, BaSC, BySC, LCC and RVC) adopted in June 2018; • Feasibility of groundwater supplies is currently being investigated; and • Feasibility of extending Marom Creek supply to bulk water supply area is currently being investigated in association with BaSC.	• Implementation of new water source by 2024. A feasible coastal sands groundwater source has not yet been found. Additional investigations are being undertaken in the Woodburn area. RCC is investigating the feasibility of the development of multiple small borefields and treatment facilities; • Further investigation of the Marom Creek water source including storage volume and potential raising options; • If groundwater is found to be non-viable as a stand-alone future source, further investigation and community consultation around water reuse (indirect potable reuse of wastewater) to complement groundwater supplies; • Investigation of potential wastewater discharges as return flow credits to offset flow release requirements; and • Implementation of the Regional Demand Management Plan including preparation of Water Loss Management Plan.
Tweed Shire Council	• Secure yield studies completed 2016; • Review of efficacy of demand management initiatives; • Preliminary development of emergency supply from the south-east Queensland (SEQ) water grid; and • Investigations into raising of Clarrie Hall Dam including engineering design and environmental assessment.	• Preferred option for future water security is raising of Clarrie Hall Dam by 8.5 m to 43,000 ML by 2026. Land acquisition and planning is underway. TSC has submitted a detailed application for funding under the Safe and Secure Program for the EIS phase; • Review of demand management initiatives in parallel with source augmentation; • TSC has submitted a detailed application for funding under the Safe and Secure Program for the feasibility and options assessment for the SEQ link for contingency supply; and • Investigate the construction of new Byrill Creek dam by 2046.

LWU	Recent Action	Planned Future Direction
Kyogle Council	• Construction of 200 ML off-river storage and WTP upgrade (completed in 2017); and • Secure yield assessments for Kyogle water supply completed..	• Kyogle water supply is considered to be secure for the next 20 years; • Review of IWCM Strategy (council-wide); • Review of Drought Management Plan; • Investigation of water supply for Tabulam (from Clarence River) with funding through Safe and Secure program; • Beyond 20 years, source augmentation for Kyogle water supply is likely to involve additional releases from Toonumbar Dam.
Ballina Shire Council	• Regional Demand Management Plan (RCC, BaSC, BySC, LCC and RVC, 2018); • Regional Drought Management Plan (RCC, BaSC, BySC, LCC and RVC, 2016); • Secure yield investigations for Marom Creek/Wardell supply (2017).	• Current supplies are adequate for the planning horizon although weir storage and water access licence restrictions are still to be confirmed; • Wardell Asset Master Plan being developed; • Implementation of Regional Demand Management Plan including preparation of Water Loss Management Plan; and • Wardell Drought Management Plan in accordance with the Regional Plan.
Byron Shire Council	• Regional Demand Management Plan (RCC, BaSC, BySC, LCC and RVC, 2018); • Regional Drought Management Plan (RCC, BaSC, BySC, LCC and RVC, 2016); • A review of the 2009 Integrated Water Cycle Management (IWCM) Strategy and revised Strategic Plan (2018) confirmed the need to: o Prepared a detailed forecast of future demand in Mullumbimby; o Assess the security of Mullumbimby's water supply and determine the requirements for augmentation of the water supply scheme; and o Prepare a revised drought management plan for Mullumbimby in accordance with the regional approach – currently in draft form. • Review of Mullumbimby secure yield has commenced.	• Implementation of Regional Demand Management Plan including preparation of Water Loss Management Plan; • Finalise Mullumbimby drought management plan; and • Finalise secure yield assessment for Mullumbimby.

LWU	Recent Action	Planned Future Direction
Lismore City Council	• Regional Demand Management Plan (RCC, BaSC, BySC, LCC and RVC, 2018); • Regional Drought Management Plan (RCC, BaSC, BySC, LCC and RVC, 2016) – adopted as an operational plan; • Nimbin Drought Management Plan (2016) in accordance with the Regional Plan; • Secure yield assessment – Nimbin water supply (2014); • Nimbin water supply upgrade design and construction (Stage 1); and • Water Loss Management Plan (2015).	• Nimbin water supply upgrade Stage 2 (WTP); • Implementation of Water Loss Management Plan; and • Implementation of Regional Demand Management Plan.
Richmond Valley Council	• Regional Demand Management Plan (2018); • Regional Drought Management Plan (2016); • A review of the RVC 2008 IWCM Strategy and revised Water Supply and Sewerage Strategic Plan (2018) confirmed the need to: o Undertake detailed analysis of current and forecast dry weather unrestricted demand in Casino; o Assess the secure yield of Casino water supply in accordance with the current security of supply methodology including consideration of the impact of climate change on secure yield; o Develop an emergency water source for Casino; and o Prepare a drought management plan in accordance with the Regional Plan.	• Implementation of Regional Demand Management Plan including preparation of Water Loss Management Plan; • Investigation of potential funding sources for detailed planning and emergency source investigations. RVC will submit a detailed application for funding under the Safe and Secure program (EOI has been successful); and • Potential options for source augmentation include groundwater, accessing dead storage, off-stream storage, interconnection with RCC bulk supply and additional releases from Toonumbar Dam.

2.2 Status of Bulk Supply Study Actions

A summary of the status of the 2013 Bulk Supply Study Action Plan is provided in Table 2.

Table 2: Status of 2013 Action Plan

#	Action	Responsibility	Timing	Status
Study coordination		All	Ongoing	Included in each project as required.
1. Secure Yield Studies				
1A	Existing system secure yield (current and future) in accordance with security of supply methodology:			
1A-1	Tweed/Bray Park	TSC	Short-term	Completed 2014-2016.
1A-2	Mullumbimby	BySC	Short-term	To be completed in 2018/19.
1A-3	Kyogle	KC	Short-term	Completed.

#	Action	Responsibility	Timing	Status
1A-4	Casino	RVC	Short-term	Assessment of current yield was undertaken in 2012. Assessment of impact of climate change is required.
1A-5	RCC bulk supply	RCC	Short-term	Completed in 2015.
1A-6	Nimbin	LCC	Short-term	Completed in 2014.
1B	Assessment of secure yield of interconnection scenarios in accordance with security of supply methodology:			
1B-1	RCC – Tweed/Bray Park	RCC/TSC	Short-term	No progress. TSC's preferred option for future water security is the raising of Clarrie Hall Dam. RCC's Future Water Strategy includes enhanced demand management and groundwater as a future supply source.
1B-2	Mullumbimby – Brunswick Heads	RCC/BySc	Short-term	The 2018 IWCM Strategy acknowledged the regional investigations undertaken by NOROC but determined that demand and yield deficit would be confirmed prior to investigation of augmentation options.
1B-3	Casino – RCC	RCC/RVC	-	Completed in 2012.
1C	Assessment of secure yield of augmentation scenarios			
1C-1	Toonumbar Dam and raising scenarios	All	Short-term	RVC, RCC and KC have been in discussions with Water NSW recently about the potential to access additional releases from Toonumbar Dam. WaterNSW is currently undertaking modelling to determine the available capacity for allocation of additional extraction licences.
1C-2	Clarrie Hall Dam scenarios	All	Short-term	Completed 2016.
1C-3	Dunoon Dam scenarios	All	-	Completed as part of 2014 Future Water Strategy.
2. Interconnection Options				
2A-1	Investigate feasibility of a Tweed/RCC interconnection	RCC/TSC	Short-term	No progress.
2A-2	Tweed/RCC interconnection concept development	RCC/TSC	Short-term	No progress.
2B-1	Mullumbimby/RCC permanent interconnection concept development	RCC/BySC	Short-term	No progress. An existing pipeline connects the low level Mullumbimby distribution system with the Rous Water bulk supply for emergency drought supply (0.5 ML/d).

#	Action	Responsibility	Timing	Status
3. Desalination				
3A	Desalination feasibility study	All	Short-term	No progress.
3B	Desalination concept development	All	Short-term	No progress.
4. Development of Surface Water Options				
4A	Raising Clarrie Hall Dam	All	Short-term	Underway. To be completed by 2020. EIS to be determined by 2021.
4B	Raising Toonumbar Dam	All	Short-term	No progress. WaterNSW has recently approached RCC and RVC about the potential for creation of high security town water licences from Toonumbar Dam for RCC bulk supply and Casino's water supply.
4C	Dunoon Dam scenarios	All	-	Completed as part of Future Water Strategy.
5. Development of Groundwater Options				
5A	Feasibility assessment	All	Short-term	Water Sharing Plan for the North Coast Coastal Sands Groundwater Sources commenced in 2016. To be reviewed in 2026. RCC has been investigating the feasibility of various new groundwater sources. TSC considered groundwater options as part of previous options assessment. RVC has considered groundwater sources as an emergency supply option.
5B	Groundwater concept development	All	Short-term	No progress.
6. Assessment of Regional Supply Options				
6A	Comparison of feasible supply options	All	Short-term	No progress.
7. Implementation of Regional Supply Strategy				
7A	Detailed design and construction	All	Medium-term	No progress.

#	Action	Responsibility	Timing	Status
8. Data Collection and Monitoring				
8A	Development of regionally consistent approach to collection and reporting of water demand and demand forecasting.	All	Short-term	No region-wide approach. Actions are included in Regional Drought Management Plan for RCC, BaSC, BySC, LCC and RVC. A long-term demand forecast was prepared in 2012. TSC continues to monitor demand in accordance with its 2009 Demand Management Strategy. A long-term demand forecast was prepared in 2014.
8B	Ongoing data collection and monitoring.	All	Ongoing	Ongoing.
9. Demand Management				
9A	Ongoing development and review of demand management programs including options for potable water substitution.	All	Ongoing	Regional Demand Management Plan for RCC, BaSC, BySC, LCC and RVC. All houses in new developments in the Ballina and Lennox Head area built since 2003 have a dual water supply system or dual reticulation in place with recycled water supplied through the system since 2017. Non-potable supplies in these areas are available for flushing toilets, washing clothes and watering gardens. Recycled water is available in some parts of Byron Bay for toilet flushing to supplement potable supplies. TSC is currently reviewing demand management measures in parallel with source augmentation.
10. Water Loss Management				
9A	Ongoing development and review of water loss management programs.	All	Ongoing	LCC has developed a Water Loss Management Plan and commenced implementation. Water loss management planning is included as an action in the Regional Demand Management Plan for RCC, BaSC, BySC and RVC to be undertaken in 2018/19. TSC is currently reviewing water loss management measures in parallel with source augmentation.

3. POTENTIAL GRANT FUNDING

The NSW Government has established the Safe and Secure Water Program to improve economic growth and productivity in NSW. The program will fund eligible projects that will deliver public health, environmental and/or social benefits to regional communities. The NSW Government encourages proponents to work together through their relevant regional organisations to identify projects that involve more than one Local Government Area and/or have been identified as regional priorities.

Funding is available for three project phases - scoping study (needs assessment, feasibility study, and/or options assessment), business case and construction.

The first stage of the application is an Expression of Interest (EOI) which is assessed on whether the project is eligible and whether the need for the project is adequately described in the application form. If the EOI is successful, detailed applications will be invited and assessed against criteria based on the affordability of the project, ability to deliver the project and the project's contribution to improving economic growth and productivity in the State. In addition, projects will be subject to strategic and economic assessments, including a requirement for infrastructure projects to demonstrate a benefit cost ratio (BCR) greater than 1.

A discussion of eligibility and funding requirements for a Stage 2 detailed application (once an EOI is successful) is provided below.

Table 3: Information required in a stage 2 funding application

Project phase	Information required	JO eligibility
Project Scoping Studies	• Clearly defined problem / project justification; and • Statement of eligibility in accordance with the guidelines.	• The application would be supported by the 2013 study and this review. • JO and individual LWUs are eligible to apply.
Business Case Development	• Project scoping documentation such as needs assessment, feasibility study, and/or options assessment; and • Demonstrated alignment with sound strategic planning, such as an Integrated Water Cycle Management (IWCM) strategy.	• Business case would not proceed until Scoping Studies are completed and if warranted. • The RCC, TSC IWCM Strategies and associated strategic plans were prepared prior to the 2013 Regional Study. However, investigations undertaken by NOROC in 2013 support the regional approach. Proposed regional approaches align with current RVC and BySC strategic plans.
Design and Construction	• Detailed Business Case that compares options including cost-benefit analysis showing a BCR > 1. Also would include items such as the following, where applicable - concept design for recommended option, environmental assessment, implementation timeframes, risk management and procurement approach, statutory approvals etc.	• To be determined after business case is developed.

Preliminary discussions with NSW Department of Infrastructure (DI) - Water personnel (Glenn George) and the Safe and Secure Program Manager (Vince Keogh) have been undertaken to discuss the proposed approach for the funding applications.

The available funding is based on the annual water supply and sewerage revenue of the proponent. On this basis, separate applications from RCC, TSC, BSC and BySC are eligible for up to 25% funding, RVC is eligible for up to 50% funding and KC is eligible for up to 75% funding under the program. An application from a Joint Organisation may propose a level of funding based on the revenue of the partners in the application. For example, the Northern Rivers Joint Organisation could apply for 37.5% funding (the average of the funding level for the six LWUs).

The funding guidelines suggest that applications from Joint Organisations would be considered favourably and this has been confirmed through discussions with DI - Water. On this basis, a single application from the Joint Organisation is recommended. This would cover all investigations relating to supply security in the region that are not subject to existing detailed applications.

4. FUTURE REGIONAL WATER SUPPLY REQUIREMENTS

The 2013 study found that major additional water supplies will be required to meet the growth in demand within the Rous bulk supply area and the TSC Bray Park system and the yield deficit in these systems has not yet been resolved. TSC will continue to pursue the investigations relating to the raising of Clarrie Hall Dam and the emergency connection to SEQ water link. RCC will continue to investigate groundwater supplies and the potential for the Marom Creek (Wardell) water supply to partially meet water supply needs within the bulk supply area.

The 2013 study also found that Mullumbimby and Kyogle also required significant additional supply compared to current sources. Kyogle has since established a secure supply with the construction of the off-stream storage. The supply deficit in Mullumbimby has not yet been resolved.

A smaller increase in yield was found to be required in Casino and this deficit has also not yet been resolved. RVC is planning to investigate source augmentation and emergency supply options with funding from the Safe and Secure Program.

Water supplies were found to be adequate to serve future demand in Tyalgum, Bonalbo, Woodenbong and Muli Muli. Recent secure yield assessments have confirmed that current supplies are also adequate for Wardell and Nimbin.

5. REVISED ACTION PLAN

The 2013 study concluded that a regional approach may provide improved financial outcomes through economies of scale as well as access to a wider range of options to improve efficiency, system resilience and operational flexibility. A regional approach would allow the best solutions to be drawn from across the region, rather than separate supply solutions restricted within the water utility boundaries. While a local supply option has been implemented by KC for Kyogle and LCC for Nimbin and preferred solutions are being developed separately by RCC and TSC to ensure water supply security, these conclusions from the 2013 study are still valid.

The interconnection of RCC and TSC systems is still considered to be a major component of a true regional approach. The potential non-regional supply options (raising Clarrie Hall Dam, SEQ link and groundwater supplies) have not yet been developed to a point where the future TSC and RCC supplies can be considered secure. TSC has confirmed that its current priority is the investigations for the raising of Clarrie Hall Dam and an emergency connection to SEQ water grid, however, the resulting augmented supply is expected to be sufficient to 2046 only. The recommendations of the 2013 study in relation to interconnection of the RCC and TSC systems are still considered to be appropriate, even if this is not implemented in the short-medium term.

The current priority actions from the 2013 study are:

- Investigate feasibility of a Tweed/Rous bulk supply interconnection;
- Investigate the feasibility of the connection of the smaller systems (Casino and Mullumbimby) to a regional supply in order to better define the regional network supply requirements and to enable comparison with local supply options.; and
- Desalination study to develop a concept for the large-scale regional desalination facility to enable a full assessment of the attractiveness of this option.

Additional investigations to be undertaken to ensure future water supply security for the region are:

- Continuation of TSC investigations into raising of Clarrie Hall Dam and an emergency connection to SEQ water grid;
- Continuation of RCC groundwater investigations;
- Investigation of the capacity of Marom Creek water supply and the ability to supply part of RCC bulk water supply needs;
- Continuation of scoping and options investigations for Casino water supply augmentation;
- Continuation of scoping and options investigations for Tabulam water supply augmentation; and
- Continuation of scoping and options investigations for Mullumbimby water supply augmentation.

The revised action plan is provided in the following table with budget cost estimates and expected timing. It is recommended that Safe and Secure funding is pursued for the above investigations in a combined application from the Joint Organisation. Costs for study coordination for the scoping study components have also been included in the action plan. Scoping study actions are assumed to be undertaken over the next four years (2019 – 2022). Progression of the actions to a business case is expected to occur beyond this time frame if warranted.

Table 4: Revised regional action plan

Project component	Ten year total	2019	2020	2021	2022	2023 -2028
Scoping Studies						
CHD raising design	2,245	1,118	1,127			
CHD raising land acquisition	6,762	2,236	2,254	2,273		
CHD raising approvals	2,145		1,691	454		
SEQ link design and approvals	968	461	507			
Casino water supply secure yield assessment	30		30			
Casino water supply source augmentation options	130			130		
Tabulam water supply investigations	160	80	80			
Mullumbimby water supply secure yield assessment	45	45				
RCC effluent reuse investigations	300		150	150		
Secure yield assessment - regional augmentation options	50		25	25		
Feasibility assessment - TSC-Rous bulk supply area interconnection	100			100		
Concept development - TSC-Rous bulk supply area interconnection	150				150	
Mullumbimby source augmentation options	100			100		
Feasibility assessment - desalination	100			100		
Concept development - desalination	150				150	
Marom Creek capacity investigations	100		100			
Study coordination - JO application	150		30	70	50	
Sub-total - JO Application	*1,440*		*415*	*675*	*350*	
Safe and Secure funding EOI	*9*	*9*				
Safe and Secure funding detailed application	*30*	*30*				
Source development						
CHD raising	58,040		254	228	11,744	45,814
SEQ link	25,103			14,771	10,332	
Rous bulk supply area borefield development	33,700					33,700
Casino source augmentation	500			500		
Tabulam water supply source	2,440			1,220	1,220	
Mullumbimby source augmentation	500			500		
Marom Creek capacity augmentation	1,000			1,000		

Legend:

Existing Safe and Secure detailed application	Existing/proposed Safe and Secure EOI	Existing LWU funding	Subject to potential future business case/construction funding applications	Proposed JO application

The actions relating to demand management, water loss management, source substitution and data collection and monitoring in the 2013 Action Plan are still appropriate. LWU yield studies should be reviewed on a regular basis (every 5 years) or sooner if alternative sources are identified. These actions have not been included in the revised action plan.

It is also recommended that further investigation is undertaken with regard to the proposed review of water sharing plans and implications for water resources. The feasibility of utilising Toonumbar Dam to augment the region's water supply needs is dependent on WaterNSW plans regarding Toonumbar Dam and the potential for this source to supply some of the region's needs. Investigation of this option can be undertaken once additional information on WaterNSW operation of the dam, spare capacity in the dam and the outcomes of the review of the Water Sharing Plan are available.

6. SUMMARY OF RECOMMENDATIONS

The 2013 *Northern Rivers Regional Bulk Water Supply Study* recommended a regional approach to improving water supply security in the Richmond/Tweed River basins. This current review of the 2013 action plan has updated the current status of LWU investigations and future direction and confirmed the recommendation for regional investigations.

The Northern Rivers Joint Organisation has the opportunity to apply for funding under the NSW Government's Safe and Secure Funding program for investigations relating to water supply security in the region. Applications from a Joint Organisation that have been identified as a regional priority are encouraged by the NSW Government. It is recommended that the Joint Organisation submit an EOI (initially) covering all related investigations that are not subject to existing detailed applications under the program. The EOI would address investigations for the water supplies in Casino, Mullumbimby and Wardell systems and options for supply augmentation across the region including regional interconnection options (TSC Bray Park to Rous bulk supply area, Casino to Rous bulk supply area, Mullumbimby to Rous bulk supply area, Rous bulk supply area to Wardell) and a regional desalination facility. The total cost of the scoping study investigations is expected to be $1.44 million. A request for funding of 37.5% of the total cost ($540,000) is suggested with the remaining $900,000 to be funded by the Joint Organisation LWUs. If the EOI is successful, a detailed application for funding would then be required.

The EOI would highlight the planning undertaken to date, the security of supply status in the region, the required scoping studies and infrastructure outcomes, the integration with other projects in the region that are subject to Safe and Secure funding applications and the commitment of the funding partners.

The suggested timing of the application process is as follows:

- EOI submitted in November 2018;
- EOI response received in December 2018;
- Detailed application submitted by March 2019;
- Scoping studies to commence in July 2019.

REFERENCES

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Attachment 6:
Table 1: Alignment of Northern Rivers Watershed Initiative with NRJO Regional Priorities.

Attachment 1

Table 1: Alignment of the Northern Rivers Watershed Initiative with NRJO Regional Priorities

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	**Strategic actions**	**Addressed?**	**How?**
1. Enhanced biodiversity across the region, including an increase in the volume of healthy, stable, interconnected habitat and increased populations of threatened species.	1.1 Investigate the feasibility of establishing a regional biodiversity offset / biobanking program.	✓	Due to the scale and longevity of the NRWI, this initiative has the potential to incorporate regional biodiversity offset/biobanking measures as part of the implementation process.
	1.2 Advocate for changes to forestry policy and planning regulations to encourage native forestation.	✓	Large-scale reafforestation would be part of the natural flood management approach that underpins the NRWI – allowing demonstration of the need for supportive forestry policy and planning regulation.
	1.3 Engage with the NSW Office of Environment and Heritage to identify partnering opportunities as part of the Saving our Species program.	✓	The nature and extent of actions to be completed as part of the NRWI would offer significant opportunities for partnerships with OEH as part of the *Saving Our Species* program.
	1.4 Partner with Landcare, Local Land Services and community groups to identify ways the Joint Organisation can support efforts to engage the community and land owners in biodiversity conservation.	✓	Partnership-based implementation would be a key operating principle for NRWI implementation.
2. Improved water quality and overall health of the Tweed, Richmond, Clarence, Brunswick and Wilson river systems to deliver positive environmental, recreational and economic outcomes.	2.1 Develop a healthy waterways action plan which identifies: • Projects for funding and delivery • Opportunities for partnering with government, community groups and others on project implementation.	✓	This strategic action would be a core component of NRWI implementation.
	2.2 Partner with the NSW Department of Planning and Environment to progress relevant directions in the North Coast Regional Plan 2036, including: • Direction 1: Deliver environmentally sustainable growth	✓	Implementation of NRWI would be consistent with Direction 1 and 2 of the *North Coast Regional Plan 2036*.

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	**Strategic actions**	**Addressed?**	**How?**
	• Direction 2: Enhance biodiversity, coastal and aquatic habitats and water catchments.		
	2.3 Develop standardised measures for river health and coordinate monitoring and reporting to provide a regional view of river health.	✓	Development of a scientific framework for landscape design and monitoring would be one of the key NRWI modules.
3. Protect and enhance the region's natural coastal environments to maintain natural character, scenic value, biological diversity and ecosystem integrity.	3.1 Work collaboratively as a region on the development and implementation of Coastal Management Programs and other activities under the *Coastal Management Act 2016*.	✓	Notwithstanding the focus of natural flood management measures in the upper catchment, the NRWI adopts a catchment-wide approach, and would integrate with actions identified in coastal management programs under the *Coastal Management Act 2016.*
4. Increased availability, affordability and choice of housing to meet the needs of current and projected Northern Rivers population.	4.1 Update the evidence base in the Northern Rivers Affordable Housing Strategy 2012 and review, prioritise and progress relevant actions.	—	
	4.2 Partner with the NSW Department of Planning and Environment to progress relevant directions in the North Coast Regional Plan 2036, including: • Direction 22: Deliver greater housing supply • Direction 23: Increase housing diversity and choice • Direction 24: Deliver well-planning rural residential housing areas • Direction 25: Deliver more opportunities for affordable housing.	—	

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	Strategic actions	Addressed?	How?
	4.3 Work collaboratively to: • Define the joint organisation's advocacy position regarding planning regulations • Identify opportunities for knowledge-sharing and collaborative action between member councils • Engage with public and private stakeholders • Identify potential demonstration projects and attract government or private investment.	—	
	4.4 Partner with relevant government and non-government organisations to support increased access to social housing and homeless and crisis accommodation services across the region.	—	
5. Access to a full range of health and wellbeing services including specialist, aged care, mental health and community services, that meet the needs of a growing, aging and geographically dispersed population.	5.1 Use available regional health data to build understanding of: • the availability of health and wellbeing services, by location, relative to current and projected demand • new and planned government health and wellbeing facilities and services • strategies for attracting and retaining private health providers and professional health staff across the region.	—	

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	Strategic actions	Addressed?	How?
	5.2 Develop the Joint Organisation's advocacy priorities for addressing gaps, including opportunities for specialisations.	—	
6. An efficient, safe and sustainable regional transport system that enables improved productivity, connectivity and social inclusion for businesses, residents and visitors.	6.1 Work with Regional Development Australia Northern Rivers, NSW Department of Premier and Cabinet and Southern Cross University on the Northern Rivers Freight and Supply Chain Study.	—	
	6.2 Adopt an integrated approach to progressing the regional transport-related actions in the Northern Rivers and Tweed Transport Plans and corresponding Regional Economic Development Strategies.	—	
	6.3 Represent the region's interests in the Transport for NSW-led process to develop region-specific, place-based and corridor plans for the Northern Rivers with a focus on: • Improved connectivity between regional centres, including east/ west connectivity • More public, community and active transport options • Use of innovative technology and materials in transport • Low emissions transport.	—	
7. Equitable access to fast, reliable, competitively priced digital connectivity and mobile phone coverage for businesses and	7.1 Advocate for improved telecommunications infrastructure and services across the region with a focus on:	—	

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	**Strategic actions**	**Addressed?**	**How?**
residents across the region to enhance economic opportunities and liveability.	• Comprehensive coverage • Fast, reliable, affordable services • Standards and regulations for infrastructure installations which consider community expectations, sensitive sites, visual amenity and access to third party property.		
8. To strengthen its emerging position as a NSW leader in renewable energy generation, storage and use, in accordance with widespread community support for reduced emissions and action on climate change.	8.1 Champion and promote the increased use of renewable energy for residential, public and commercial purposes.	—	
	8.2 Advocate for changes to energy generation, purchasing, pricing and retailing regulations with a focus on: • Increased use of renewable energy • Reduced energy costs • Reliable supply.	—	
	8.3 Develop a Northern Rivers Renewable Energy Investment Prospectus that identifies opportunities for public, private and community investment in renewable energy projects.	—	
9. A secure and sustainable water supply to meet current and future needs of residents, businesses and visitors.	9.1 Review and progress recommendations of Bulk Water Supply and Demand Management Strategies.	✓	The NRWI is based on an emerging approach to flood mitigation with potential benefits for long term water security and natural resource management outcomes and is therefore consistent with regional bulk water supply strategies.
	9.2 Advocate for the region's interests in relation to scientific justification, consultation and regulation associated with commercial water extraction arrangements.	✓	Development of a scientific framework for landscape design and monitoring will assist understanding of the sustainability of water extraction and water management arrangements on a sub-catchment basis.

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	Strategic actions	Addressed?	How?
10. Increased recycling, reduced landfill and improved, cost-effective service delivery through collaborative, innovative approaches to waste management.	10.1 Review and update the North East Waste Regional Waste Management Strategy 2013-21.	—	
	10.2 Identify opportunities for implementation of pilot or demonstration projects to establish the Northern Rivers as a 'centre of excellence' for innovative waste processing and/or waste to energy technology.	—	
	10.3 Advocate for a review of waste management regulations with a focus on: • Alignment with global best practice • Review of the EPA and agency requirements to implement other regional strategies • Enhancing viability of innovative waste management approaches • Waste to energy policy and guidelines • Review of the waste levy to make funding available for local initiatives • Streamlining the regulatory framework.	—	
11. Improved preparedness for and ability to respond to and recover from flooding events.	11.1 Seek funding to develop and where applicable, implement floodplain risk management plans for rivers and applicable creeks for the Northern Rivers.	✓	The NRWI would involve large-scale bio engineering solutions including reintroducing woody debris to channel beds, encouraging channel sinuosity, and re-establishing riparian forest for flood and other benefits. The project would integrate a research program in partnership with the Southern Cross University *National Centre for Flood Research* that will bring together a number of issues relating to land management in the catchment, and flood mitigation.

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	Strategic actions	Addressed?	How?
	11.2 Collaborate with the Southern Cross University National Centre for Flood Research on flood modelling, catchment management and community resilience.	✓	As above.
12. A strong, diverse regional economy which provides local employment by attracting new enterprises, enabling existing enterprises to innovate and expand, and offering the conditions required for emerging industries to flourish.	12.1 Implement actions from the relevant Regional Economic Development Strategies to enable economic development through a focus on: • The 'Engines of Growth' including agriculture, manufacturing and tourism • Enabling infrastructure • Investment attraction and retention • Capability development • Innovation • Decreasing general and youth unemployment.	✓	Poor ecohealth outcomes across the Northern Rivers lead to compromised economic, social and ecological values within the catchment and estuarine systems. A key thread that runs throughout the NRWI is the need to foster sustainable behaviour and support farmers to adopt restorative farming practices and move towards sustainable agricultural enterprises, thereby providing attractive location and conditions for investment, and competitive advantages for key industries including both sustainable agriculture and nature-based tourism.
	12.2 Partner with the Department of Industry as it delivers key actions in the Making it Happen in the Regions: Regional Development Framework including working with local bodies to develop and publish Regional Investment Prospectuses.	✓	As above.
13. Increased contribution to the regional economy from tourism and dispersal of tourists across the region, while protecting the Northern Rivers' unique character, environment and quality of life.	13.1 Partner with the NSW Department of Planning and Environment to progress Direction 8 of the North Coast Regional Plan 2036 to sustainably "promote the growth of tourism".	✓	As above.
	13.2 Deepen the relationship between the Northern Rivers Joint Organisation	✓	As above.

Thriving, healthy and biodiverse natural environments			Northern Rivers Watershed Initiative
Goals	Strategic actions	Addressed?	How?
	and Destination North Coast to facilitate regional input into: • tourism planning and development • regional branding and promotion.		



Northern Rivers Watershed Initiative

DISCUSSION PAPER

December 2018

Future supporting organisations [insert constituent council logos]

ROUS COUNTY COUNCIL

DISCUSSION PAPER

Northern Rivers Watershed Initiative

1. INTRODUCTION

1.1 Context

The Northern Rivers region is recognised as having extremely high terrestrial, aquatic and marine biodiversity values with many species endemic to the region. However large portions of these catchment and estuarine areas have typically been extensively modified from (Pre-European) heavily timbered forests to a (current) mix of intensive agriculture, grazing and urban development (Cavanagh *et al*., 2006). As evidenced by the ecohealth status of the Richmond River, extensive modification of natural processes has placed significant stress on these Northern Rivers catchments and estuarine systems.

Pressure on ecosystems within the Northern Rivers will be heightened in the future through climate induced changes, with projections suggesting that there will be more hot days, bushfires, droughts and intense storms. These can all place human life, property and natural ecosystems at increased risk. Changes in rainfall and higher evaporation rates are likely to lead to less water for streams and rivers in the Northern Rivers catchments, which will place strains on water resources. Whilst changes in average temperature, rainfall and evaporation will have long-term consequences for the Northern Rivers catchments, the impacts of climate change are more likely to be felt through extreme weather events (CSIRO, 2007).

In summary, ecosystem health, water security and flood risk all therefore represent key water and catchment management issues for the Northern Rivers. Responding to ecosystem health, water security and flood risk in an integrated fashion requires solutions that can generate outcomes across a range of policy objectives.

The Northern Rivers Watershed Initiative (NRWI) is based on a holistic approach to the management of water within the catchments that will utilise modern, best practice approaches in catchment modelling and natural flood mitigation to target improvements in stream bank condition and river health that also contribute to reduced flood risk within the catchments.

1.2 Overview of the Northern Rivers Watershed Initiative

When rain falls on a catchment, the amount of rainwater that is converted via overland flow into surface water flow down waterways (and potential flooding) and the amount that is converted into longer term landscape storage (such as soil, groundwater and wetlands) depends on catchment characteristics. The NRWI is premised on the concept of natural flood management (NFM) that consists of a range of measures that aim to restore the natural functioning of river catchments, floodplains and rivers to retain water in the landscape in order to reduce downstream flood risks.

The NRWI would involve large-scale investment in catchment works in upper catchment areas that restore natural hydrologic functions that deliver both improvements in stream bank condition and river health and that also contribute to reduced flood risk within the catchment. In addition, it would also involve implementation of coastal zone management plan actions to address high priority estuarine health issues. These measures will deliver a range of environmental, social and economic benefits.

The area to be covered by the NRWI consists of the entirety of the Tweed River, Brunswick River Richmond River and Evans River catchments, covering an area of approximately 8,220 km^2. The NRWI will cover the local government areas of Tweed, Byron, Ballina, Lismore, Richmond Valley and Kyogle. In this way, a truly regional solution to water security and catchment health will be achieved.

1.3 Structure of this report

This discussion paper is structured as follows:

Section 1..... introduces the NRWI.

Section 2..... sets out the background to the NRWI, including the need to act, the current opportunity for funding, and the need for catchment-focussed action.

Section 3..... highlights the key ecohealth issues to be addressed by the NRWI.

Section 4..... outlines the key principles of natural flood management and how this would be applied within the NRWI.

Section 5..... outlines the key elements of the NRWI.

Section 6..... identifies considerations that need to be addressed as part of implementation of the NRWI.

Section 7..... lists the references used in compilation of this report.

2. KEY DRIVERS FOR THE NORTHERN RIVERS WATERSHED INITIATIVE

2.1 Need for Action

Ecohealth status

Ecohealth is an aquatic ecosystem monitoring program that measures how healthy our rivers and estuaries are for the plants and animals that live in them. Ecohealth looks at key environmental indicators including water quality, riparian vegetation, geomorphic (channel) condition, macroinvertebrates (waterbugs), fish (distribution and population sizes) and plankton, and reports on their condition. This information enables natural resource managers to determine where our rivers are under stress and where to invest in environmental management activities. It also helps Councils and State Government agencies meet local and state monitoring, evaluation and reporting requirements.

For the Richmond cohealth assessment (Ryder *et al*., 2014), 48 study sites were selected across the Richmond catchment (23 freshwater sites and 25 estuarine sites) - these were sampled monthly (estuarine) or bi-monthly (freshwater) over a 12-month period in 2014 to contribute to the assessment of the ecological condition of the catchment.

The Overall Grade for the Richmond catchment was D-, ranging from an F in the Wilsons River and upper Richmond estuary to a C in the headwater streams of the catchment. Twelve of the 17 river systems recorded a score of D or less.

The upper freshwater reaches of the Richmond catchment had better water quality, aquatic macroinvertebrates and geomorphic condition than the lower freshwater reaches, but no better riparian condition. The upper estuary (upstream of Woodburn) was consistently in the poorest condition, with very high nutrient concentrations, turbidity and algal biomass.

Whilst a comparable Ecohealth assessment has not been completed in the Tweed or Brunswick catchments, these catchments and estuaries share similar challenges to that in the Richmond and are also in need of attention.

Poor ecohealth outcomes across the Northern Rivers lead to compromised economic, social and ecological values within the catchment and estuarine systems.

Flood status

RCCs service delivery requirement in relation to flood mitigation in the rural environment involves the prevention and mitigation of the menace to the safety of life or property from floods and natural resource management issues arising therefrom. All local government authorities will have similar roles and responsibilities within their jurisdictions throughout the Northern Rivers.

Water security status

In relation to the long-term (50 year) bulk water supply demand forecast for the region, by 2060, the Northern Rivers water supplies are predicted to serve approximately 146,000 residential properties and 14,000 non-residential connections with a regional demand of approximately 40,000 ML/a, an increase of approximately 74%. Despite this increasing demand, the current secure yield of the region's water resources (approximately 32,000 ML/a) is expected to decrease with the impacts of future climate change by approximately 6,000 ML/a or 26% by 2060 (Hydrosphere (2013). Although there is some uncertainty with these predictions and there has also been some additional work conducted in the Tweed since the NOROC Bulk Water Strategy was prepared, there is little doubt that additional water supplies will be required due to population growth and the reduction in available water resources, meaning that water security is an important factor in the Northern Rivers.

2.2 Administrative arrangements

RCC is ideally positioned to lead this initiative given the regional footprint that it operates across its service delivery focus and given that it holds service level agreements with all Councils in the subject river basins. Whilst RCC is an organisation with the capacity to partner with all Councils within the Richmond River basin, the leadership role of Tweed Shire Council in the Tweed River, Byron Shire Council in the Brunswick River and Richmond Valley Council in the Evans River is also recognised and would be a key part of the NRWI. As the project is based on an emerging approach to flood mitigation with potential benefits for long term water security and natural resource management outcomes, the NRWI is considered to be consistent with the County's existing proclamation and organisational activities. This leadership may take a number of forms, from a lead organisation administering NRWI funding arrangements through to an on-ground project delivery agency. Administrative arrangements for the management of NRWI grants and NRWI on-ground delivery would be subject to further consultation.

2.3 A Potential Opportunity - The NSW Government Snowy Hydro Legacy Fund

Preliminary scoping of the scale of work needed to address this imitative indicates that a budget in the order of $150 million over 10 to 15 years would be required to affect the necessary changes across the landscape and if supported by the region would be suitable for funding from the Snowy-Hydro Legacy Fund.

The NSW Government outline of the $4.2 billion Snowy Hydro Legacy Fund (https://www.nsw.gov.au/improving-nsw/regional-nsw/snowy-hydro-legacy-fund/) states that this fund is a once-in-a-lifetime opportunity to invest in major and transformative infrastructure across regional NSW. Five priority areas for investment are identified:

- Water security
- Rain and road passenger connectivity
- Freight linkages
- Digital connectivity
- Industry activation precincts.

In promoting the NRWI, RCC is seeking to establish a regional project that addresses two of the five areas of immediate focus:

- **Providing water security in priority catchments**: recognising the Hunter, Gwydir, Macquarie, Lachlan, ***Richmond*** and Bega as the highest priority areas for water security improvements through policy and infrastructure solutions.

  Implementation of the NRWI would improve the quantity and quality, and security of regional surface water and groundwater resources in the Richmond and is therefore well aligned with this priority area for investment. Restoring natural hydrologic functions in upstream catchments will have a positive influence on water resources by retaining water in the landscape for longer periods of time.

- **Activating regional locations for increased business investment:** providing attractive locations and conditions for targeted industries to invest in regional NSW.

  The subtropical climate and fertile soils within the region are suitable for growing a diversity of crops and the Northern Rivers has long been viewed as a potential 'food bowl' not just for our own region but for South-East Queensland and beyond. Sustainable agriculture generates substantial income for our region and employs many people, not to mention the numerous flow-on effects – for this reason, sustainable agriculture within the Northern Rivers is considered to represent an 'industry activation precinct' worthy of support. A key thread that runs throughout the NRWI is the need to foster sustainable behaviour and support farmers to adopt restorative farming practices and move towards sustainable agricultural enterprises, thereby providing attractive location and conditions for investment, and competitive advantages for key industries.

2.4 Catchment-wide science-based solution critical to long term ecohealth improvement regardless of the funding opportunity

Regardless of the momentum or subsequent success of the NRWI or other river health 'rescue package', it will be critical that additional prioritisation work be completed to guide any future catchment investment. This needs to target sediment sources and riparian condition and provide an integrated framework for moving forward. This does not exist at present. Therefore, regardless of the success of the NRWI funding application to the Snowy-Hydro Legacy Fund, there is an urgent need to undertake this prioritisation work to guide any subsequent catchment wide investment.

3. KEY ECOHEALTH ISSUES TO BE ADDRESSED BY THE NORTHERN RIVERS WATERSHED INITIATIVE

This section provides a brief summary of the ecohealth issues that would be the focus of the NRWI. This description is based on content reproduced from the *Estuary Management Study* for the Richmond River Estuary (Hydrosphere, 2011) and readers are referred to that document for additional information and references on this material.

Section 3 highlights key issues influencing river health in the Richmond River catchment and estuary – given comparable conditions within the Tweed, Brunswick, Richmond and Evans River catchments and estuaries, it is likely that these will apply in all locations.

3.1 Key Catchment-wide ecohealth issues

Diffuse pollutant loadings from agricultural land

Agriculture is an important contributor to the local economy and is a key component in the social fabric of the region. Agricultural land use and some management practices are also identified as one of the major causes of poor water quality in the catchment and contribute to a broad range of issues in both upstream catchment areas and the estuary including the contribution of significant sediment, chemical and nutrient loads to the estuary during runoff (rain) events. Agricultural fertilisers are reported as a major source of nutrients. Transportation of nutrients to waterways during rainfall events dominate annual nutrient budgets. Grazing is a dominant land use in the Richmond River catchment and unrestricted stock access to waterways creates issues of bank instability and erosion through trampling, damage to riparian vegetation and direct input of nutrients and contaminants from direct contact. Contaminant inputs and increased turbidity have flow-on effects to estuarine ecosystems and productivity in the immediate vicinity and downstream in the estuary.

Addressing the impacts of agricultural land use on both upstream catchments and the estuary, while continuing to enhance the local economy and protecting rural lifestyles, is one of the biggest challenges facing long-term management of the catchment/estuary.

Poor condition of the riparian zone

The riparian zone (the interface between land and waterways) bordering the Richmond River estuary and upstream tributaries is generally devoid of vegetation for much of the area. Where riparian vegetation is present it is generally degraded, with only a few examples of intact riparian vegetation in good condition.

The issues associated with the poor condition or lack of vegetation within the riparian zone are associated with the loss of the functions and values of this important zone. Riparian zone functions include fisheries habitat, terrestrial habitat, bank stability and maintenance of soil structural integrity, land use buffering, water quality filtering, lowering water temperature and reducing aquatic weeds as well as providing scenic amenity.

Vegetation management

Except for the Bungawalbin Creek sub-catchment and the Border Ranges, the majority of the Richmond River catchment has been extensively cleared of native vegetation. The effects of vegetation clearing include:

- Loss of vegetation and associated fauna species resulting in reduced biodiversity values of the Richmond River and its catchment;

- Fragmentation of habitats where fauna rely on vegetated “movement” corridors to move between remaining vegetation remnants. In many places these corridors do not exist;
- Increased sediment and nutrient loads to waterways and the estuary; and
- Changes in morphological (erosion, accretion) processes within both upstream areas and the estuary.

Any further clearing will exacerbate these issues and therefore remaining vegetation needs to be protected and enhanced wherever possible.

3.2 Key floodplain-specific ecohealth issues

Poor water quality episodes and fish kill events

The Richmond River estuary has a history of poor water quality episodes, particularly following flood events which are periodically associated with fish kills. There is now recognition of the significant detrimental impact of historic broad-scale land clearing and floodplain drainage and regulation on floodplain wetlands, acid sulfate soils (ASS) management and water quality affecting the overall health of the estuary. While fish kills are a periodically occurring natural phenomenon, research has indicated that their frequency and severity are greatly exacerbated by catchment and floodplain modification.

Floodplain vegetation clearing and modification

From early colonisation, European land clearing on the floodplain has replaced flood adapted native trees and shrubs with exotic grasses and crops which quickly die and decompose in summer when flooded. This was found to be a major factor in fish kill events in the Richmond River in the estuary process study and recent studies have offered greater insight into the nature and extent of blackwater events. Prolonged inundation of the floodplain during and immediately following flooding can cause the decay of the underlying vegetation and rapid decomposition of accumulated organic matter. The decomposition process strips oxygen from the overlying water, creating ‘blackwater’. The mass drainage of this ponded blackwater via the drainage network and tributaries as floodwaters recede can cause hypoxic (very low dissolved oxygen) conditions along large stretches of the estuary. Low dissolved oxygen levels in water causes stress to fish and other aquatic organisms and in extreme cases can result in widespread fish kills such as those observed in the Richmond River in 2001 and 2008.

Floodplain drainage infrastructure

The Richmond River floodplain has been extensively modified by a complex network of constructed drains, modified canals, artificial levee banks and floodgates. Installation of floodplain drainage channels began in 1888 and accelerated in the early 1900s for the purpose of draining wetlands for agriculture and for flood mitigation. Floodgates were installed to prevent back-flooding of drains, creeks and tributaries and subsequently the inundation of agricultural land on the floodplain during minor flood events or by salt water from high tides. The impacts of historical and on-going drainage works are now known to have significant environmental impacts on the estuary. These include the exposure and oxidation of ASS, formation of monosulfidic black ooze (MBO) drainage providing a conduit to more effectively convey pollutants to the estuary and disruption of tidal flushing regimes affecting water quality and ecological processes.

Addressing the environmental impacts of floodplain drainage infrastructure whilst maintaining adequate protection against flooding is a key challenge for managing the on-going health of the estuary.

Acid Sulfate Soils (ASS) and Monosulfidic Black Ooze (MBO)

ASS is the common name given to naturally occurring sediments and soils containing iron sulfides. The exposure of these soils to oxygen by drainage or excavation leads to the generation of sulfuric acid often also releasing toxic quantities of iron, aluminium and heavy metals. Approximately 68,000 ha of the Richmond River floodplain is classified as having some level of ASS risk. Disturbance of these areas by historical and on-going drainage and agricultural practices has resulted in the oxidation of ASS resulting in chronic and acute discharges of acid and associated pollutants to adjacent waterways.

Five priority areas for the management of ASS in the study area have been identified and mapped during a state-wide study of ASS. These are Tuckean Swamp, Rocky Mouth Creek, Sandy Creek – Bungawalbin Creek, Maguires Creek - Emigrant Creek, and Newrybar Swamp-North Creek.

MBO is created by rotting organic matter in ASS environments and typically occurs on drain bottoms and sides. When disturbed and transported during flow events, MBOs have the capacity to rapidly deoxygenate water and severely disrupt the ecology of waterways. MBOs are known to occur in the Richmond River estuary and have been identified as a factor in fish kills. The Tuckean has one of the highest recorded concentrations of MBOs in the world.

3.3 Key catchment-wide structural or systemic-issues

Administration and Governance

The existing catchment and estuary management and governance model for the Richmond River estuary needs improvement. Key issues include the lack of a holistic approach to catchment and estuary management and poor coordination between the various management entities. It is believed that this presents a significant barrier to successful delivery of on-ground programs and effective catchment and estuary management. The issues have come about due to the large number of stakeholders with a range of responsibilities including local Councils, a County Council, and various government agencies and organisations. Current legislated responsibilities do not allow any one party to provide an over-arching governance and administration role. Community confusion about the role of the various local and state departments in catchment and estuary management has been identified as an issue.

Improved governance arrangements will rely on clearly defined responsibilities and adequate funding to implement these responsibilities.

Climate change adaptation

The NSW Government's Sea Level Rise Policy (DECCW, 2009) states that sea level rise is inevitable and establishes planning benchmarks to be adopted in NSW. These benchmarks are an increase above 1990 sea levels of 40 cm by 2050 and 90 cm by 2100, an average increase of 0.8 cm per year.

Sea level rise in the Richmond River estuary is anticipated to result in a broad range of issues including tidal inundation and landward recession of low-lying ecosystems, increased salt penetration through the estuary and adjoining wetland systems, increased bank erosion and implications for drainage and flooding in urban and agricultural areas. This issue has broad implications, affecting most of the other estuary issues in some way and therefore needs to be considered as part of all management and planning for the estuary.

Monitoring and evaluation

Current monitoring does not provide a consistent approach over the catchment. It is generally carried out by a range of agencies and organisations for various reasons and over varying timescales. This means that there is currently no way to monitor the on-going health of the catchment and estuary over time or to compare relative sources of water quality degradation across the catchment. These are fundamental requirements to implement effective and on-going catchment and estuary management. Additionally, there is no integrated environmental monitoring and reporting system in place at a scale that is meaningful to determine the effectiveness of management and investment in programs and projects that affect the catchment and estuary.

4. CONCEPTUAL BASIS FOR THE NORTHERN RIVERS WATERSHED INITIATIVE

Natural flood management (NFM) embodies the broad range of efforts and is pursued in a number of countries over several decades to attenuate flood flows by restoring the natural hydraulic function of the floodplain, using a catchment-wide approach to flood control. It employs nature-based, bioengineering solutions including reintroducing woody debris to channel beds, encouraging channel sinuosity, and re-establishing riparian forest (Kemp *et al*., 2017).

A key aspect of the NFM approach is that whilst actively seeking to manage flood risks by undertaking action in catchment areas, these same measures will address river health issues, allowing multiple objectives to be met with the same investment. The NRWI aims to apply three main/broad NFM mechanisms/strategies to manage flood risk in rural catchments:

4.1 Increasing infiltration (changing agricultural practices to reduce soil compaction, improve soil quality and promote absorption of water)

How does this NFM measure work?

Soil types in a catchment are important as they control the amount of rainfall that can infiltrate into the soil, and hence the amount of rainfall which becomes flow.

Healthy soils are essential for good plant growth, increased crop yields, livestock carrying capacity and reducing pest and disease problems. Good soil structure increases water and nutrient infiltration and retention, making farms more resilient to drought and reducing run-off into waterways. Farms lose nutrients through natural processes such as denitrification, through soil cultivation, effluent from livestock, farm run-off and removal of animals and crops. There is potential to improve on-farm retention and re-use of nutrients, particularly in intensive industries such as dairying (Tweed Shire Council, 2016).

What would this NFM measure consist of?

In the Tweed, Brunswick, Richmond and Evans River catchments, many soils have been compacted through intensive farming practices for over 150 years. If de-compacted, improved soil structure has potential to take in and store considerably more of the incident rainfall.

Organic carbon is the basis of healthy and productive soils and has declined over time, impacting on the fertility and productivity of many Northern Rivers landscapes. Increased water infiltration can also be achieved by various means of increasing soil organic carbon levels.

4.2 Storing water (restoring functioning floodplains and wetlands)

How does this NFM measure work?

Natural storages such as wetlands and natural ponds or lakes have the capacity to store floodwater and release it slowly. Soil and land management techniques can reduce peak flow by slowing and storing surface water runoff and encouraging infiltration with the soil. Storing water can decrease the magnitude of the flood peak and reduce downstream flood depths especially for high frequency, low return period floods.

What would this NFM measure consist of?

This can include a wide range of different measures including floodplain restoration works that aim to restore the hydrological connectivity between the river and floodplain which encourages more regular floodplain inundation and flood water storage. There is also potential for the development of offline storage areas which are areas of floodplain which have been adapted to store and then release floodwaters in a controlled manner. They can provide temporary flood storage which can reduce peak flow. Strategies for retention of water on backswamp areas would potentially offer similar potential benefits, however the extent to which specific options will affect overall estuary health need to be carefully assessed.

Increasing the extent of woody riparian vegetation can also increase hydraulic roughness in the channels during floods, which has the combined effect of slowing the flow and reducing the amount of channel erosion. Slowing flows and increasing flood transmission time in the upstream catchment can lead to the attenuation of flood peaks in the lowland river reaches.

4.3 Slowing flows (restoring natural processes and landforms to the river corridor, riparian buffer strips, coarse woody debris)

How does this NFM measure work?

A portion of the rain that falls on a catchment is captured by soil and vegetation. Generally, the more vegetation there is in an area, the greater the amount of rainfall that is captured and the less water there is available to flow over the surface. Following the major flooding in South-East Queensland in 2011 and 2013, the Queensland Government invested considerable effort, funds and resources into understanding flood risk and improving flood resilience (refer Queensland Audit Office, 2016). The following extract from this report provides a useful overview as to how vegetation interacts with flows from catchments:

> *Empirical evidence has shown that deforestation increases both flood risk and severity.*
>
> *In 2012, the Queensland Government developed its own synthesis on the role of natural assets in flood resilience and concluded that the evidence that human changes to the landscape impact on flooding is overwhelming.*
>
> *This is because water flow speed is determined by the:*
>
> - *volume of water*
> - *size of the channel*
> - *slope of the landscape*
> - *roughness of the landscape and channel.*
>
> *The presence or absence of vegetation affects the volume of water, speed of the water and roughness of the landscape and channel.*

Vegetation affects the volume of runoff in two main ways. The presence of vegetation increases infiltration by aerating the soil and creating cracks and fissures which allow more rainfall to soak into the ground. Deep-rooted vegetation allows for water infiltration to a greater depth than shallow rooted plants.

In addition, vegetation temporarily impedes the flow of water across the landscape causing it to spread out and slow, thereby encouraging further infiltration until the point of saturation.

Vegetation increases the roughness of floodplains and channels, temporarily impeding the flow of water. Vegetation also reduces the amount of energy and the erosive and destructive power of floodwaters. High velocity water is a very hazardous aspect of flood risk and damage.

Vegetation, particularly riparian vegetation (i.e. within close proximity to creeks and rivers), delays the delivery of water into creeks and rivers. In doing so, it can reduce the size of the downstream flood peak by holding back the water so that it takes longer to flow downstream and arrives after the downstream water has drained away. Slowing and spreading the water will result in a minor or limited increase in localised flooding and is most suited to areas where there is reduced risk (that is, sparsely populated areas of the catchment).

The presence of vegetation also affects and protects the size of the channel. Riparian vegetation protects creek banks by binding soil and armouring the banks and bed of the stream, thereby preventing erosion and maintaining physical and ecological integrity.

Riparian vegetation also reduces the scour of valuable agricultural land on adjacent floodplains by slowing the flow of water and reducing the risk of channel avulsion (tearing away or eroding the river banks to create a new path). This reduces the amount of sediment that is carried downstream. This prevents drinking water supplies from becoming highly turbid (cloudy and thick with suspended matter) and protects the health of downstream environments.

Revegetation of other lands, particularly steep land, can also contribute a small but positive reduction in the rate of discharge into streams and the volume of sedimentation in water. Much of this land is privately owned and, in some cases, revegetation may negatively impact on the economic viability of the land. In such cases, government and council efforts are limited to land-owner engagement and education.

What would this NFM measure consist of?

There is increasing evidence that the additional channel roughness created by dense riparian and floodplain vegetation can provide significant benefits for flood mitigation - re-establishment of native vegetation in riparian areas and floodplains can slow flood flows and help reduce sediment delivery to the watercourse and reduce stream bank erosion. This can help reduce flood peaks, delay peak timing, desynchronise flood peaks and reduce peak height.

4.4 Notes on the Australian setting

The approaches described above (and presently being evaluated in the Hunter River catchment), centre on native revegetation of river corridors for flood and other benefits and can be described as a nature-based approach to river management.

Elsewhere in the world, nature-based river management has broad appeal as a potentially inexpensive approach with low costs for ongoing maintenance. It employs nature-based, bioengineering solutions including reintroducing woody debris to channel beds, encouraging channel sinuosity, and re-establishing riparian forest. However, it is thought that these efforts might be diffuse over the catchment or concentrated in certain areas, and their effectiveness depends on their hierarchy in the river network. Some empirical support for the effectiveness of NFM has been provided but the empirical evidence is not unequivocal. Theoretical considerations of tributary network configuration, vegetation characteristics, hydraulic geometry and sediment type, basin size, and the variability in storm patterns suggest that the effectiveness of NFM will be different in each river system. Its application in Australia needs to be carefully examined in relation to storm characteristics and vegetation type, flow variability, and the scale of the basin, before it can be recommended as a robust flood mitigation strategy (Kemp et al). This would occur as part of the NRWI.

5. OVERVIEW OF THE NORTHERN RIVERS WATERSHED INITIATIVE

The NRWI would integrate both NFM measures and implementation of high priority *Coastal Zone Management Plan (*CZMP) actions throughout the Tweed, Brunswick, Richmond and Evans River catchments and estuaries. By 2020, the CZMP will transition to a new framework consistent with the guidelines under the *Coastal Management Act 2016*. Any actions in a *Coastal Management Plan* (CMP) need to be implemented through a council's Integrated Planning and Reporting (IP&R) framework and land-use planning systems. The injection of external resources will be needed, otherwise high priority actions within future CMPs will be truncated to align with a council's existing budgetary process.

The NRWI would consist of the following key modules:

5.1 Soil health improvement

The soil health program will restore essential ecosystem functions in soils such as nutrient cycling, water infiltration, carbon sequestration and biological pest control leading to healthy, more resilient agricultural landscapes. The program will be delivered through education, extension, research and on-ground activities that build land managers capacity to understand soil issues and adopt practices that improve soil function for productivity and ecosystem benefits.

5.2 Riparian restoration and catchment revegetation

The riparian restoration and catchment revegetation program will be based on an integrated approach to the management of river channels and riparian areas. Catchment-wide priorities and the locations to be targeted will be informed by leading scientific approaches (refer Section 5.6) – this will consist of both riparian restoration as well as broader scale revegetation programs. Within identified priority areas this program will seek to work with landholders to rehabilitate sections of river (river reaches) to achieve a desired *target condition. Target condition* would be defined at the outset of the program and is specific to a project reach/site. It would be defined based on:

- stock being excluded/ managed;
- achieving an appropriate width of riparian vegetation (e.g. minimum of 10 metres);
- achieving continuous native riparian vegetation;
- eradicating/reducing the extent of weeds (e.g. less than 10% of vegetation);
- addressing channel degradation (e.g. headcuts, bank erosion);
- removing/modifying artificial barriers to fish passage (e.g. pipe culverts, weirs etc.).

Reach-scale plans would be prepared identifying required rehabilitation works - this may include stock management, weed control, planting and erosion control works. All of the actions identified within the plan would be informed by the reach-scale assessments, with property-specific plans developed in consultation with participating landholders.

The NRWI recognises the valuable contributions being made by people and organisations who live and work in the respective catchments – the NRWI approach also understands the importance of working in cooperation with landholders in protecting water quality. As with other elements of the NRWI, landholders entering into property agreements would do so on a voluntary basis. Development of these plans do require a commitment from landholders to participate in the development of management options for their property and a willingness to be part of future project agreements to allow implementation of the plan. Key steps would involve:

- Completing project planning
- Co-ordinating reach-scale assessments of watercourse condition, focusing on bed and bank stability and channel sediment profiles.
- Preparation and implementation of reach-based rehabilitation plans addressing key river health threats (lack of riparian vegetation, emerging weeds, stock access, and bank erosion).
- In consultation with the subject landholders, preparation of and implementation of property-based rehabilitation plans addressing key river health threats.
- Preparation of scope of works for contractor engagement as required on a property-specific basis.

5.3 Agronomic best management practice

The NRWI aims to encourage sustainable agricultural enterprises and so a best management practice (BMP) scheme will be developed that aims to minimise transport of contaminants to waterways, maximise long-term farm viability and improve the natural environment. Key objectives of this program will be to identify and widely adopt efficient farm production practices that support long-term farm viability and improve the natural environment; reduce contaminant loads from agricultural land to appropriate levels that protect water quality; provide incentives, information and support across rural industries to encourage farm practices that protect water quality and improve environmental outcomes. This will be implemented across the catchment with a focus on:

- Sugar cane
- Macadamias
- Livestock grazing
- Dairying.

There will also be investigation of potential ‘river health’ marketing and branding advantages that could be realised by individual farmers or industry groups that actively support implementation of these programs.

5.4 Redesigned floodplain drainage to meet contemporary standards

As recognised in the CZMP (Hydrosphere, 2011a), the management of agricultural lands both in the catchment and on the floodplain has a major influence on water quality and riparian vegetation condition within the estuary. The CZMP identifies actions involving development of farm management plans for priority properties. These plans will identify estuary-friendly land management practices and document farm-by-farm implementation strategies which aim to preserve the economic benefits of agriculture in the catchment while meeting the needs of the estuary.

The component of the NRWI would involve the redesign and retrofitting of floodplain drainage to meet contemporary standards, backed by contemporary understanding of the associated issues. The key aspect of this module would involve minimising environmental impacts associated with floodplain drainage infrastructure whilst maintaining flood mitigation levels of service.

For example, infilling, shallowing and reshaping drains can be an effective means of reducing acid discharge and other negative impacts of over drainage, particularly in ASS-affected backswamps. Raising drain invert levels, while maintaining the effective drain cross-sectional area, acts to reduce acid seepage and maintains the drainage capacity of the existing system. These drains are commonly referred to as 'swale drains' and are depicted in Figure 1 below (WRL, 2018)

Narrow, deep drains are ideal candidates for drain reshaping, as the drain cross-sectional area required to provide efficient drainage can be maintained by conversion to a shallow, wide swale drain. Conversely, a wide, deep drain would require a significantly wider swale drain to be constructed to maintain the effective cross-sectional flow area. This strategy is applicable where the acid soil layer is sufficiently deep enough to enable an efficient drainage slope from the back swamp to the estuary without the drain invert disturbing the acid layer.

There are a range of approaches that could be applied to redesign and retrofit the floodplain drainage network to meet 2018 standards. This module would work together with other NRWI modules including the implementation of best management practices (refer Section 5.3) and the sustainable agriculture reform package (refer Section 5.5).

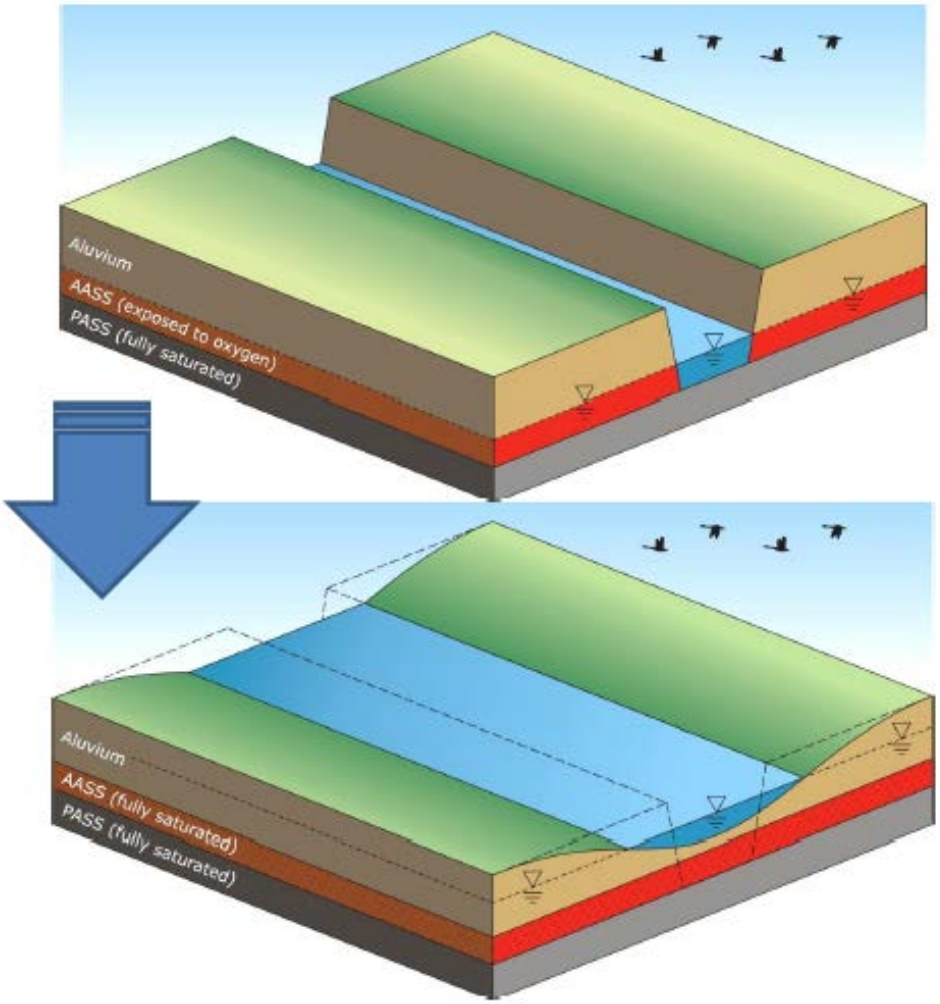

Figure 1: Before and After Swale Drain Construction (WRL, 2018)

5.5 Sustainable agriculture reform package (including buy backs)

Where farming is being undertaken in marginal country (challenged by issues associated with farming at or near sea level, or adjacent to or nearby major acid hot spot areas and extreme riverbank erosion areas), the NRWI will provide landholders with opportunities to access a reform package to get out of farming marginal lands – this will be on a strictly voluntary basis.

In the absence of any meaningful stewardship scheme to recognise landholder efforts for the provision of 'ecosystem services', a scheme will be developed that will provide landholders in designated priority restoration zones the opportunity to access a land buyback program that will allow landholders to sell parcels of land, access funds and continue farming profitable country. This will allow marginal land to be taken out of production, land that can then be placed into restoration. This reform package is an acknowledgement that in some instances and farming situations, remediation of chronic environmental problems such as blackwater and acid drainage while continuing existing farming practices is unlikely to be successful, and a less costly option would be to undertake strategic buyback, undertake suitable land restoration, and then return land to the market or place suitable environmental management covenants on it. Lands which may be considered for the buy backs include:

- heavily modified backswamp areas prone to blackwater generation
- acid hot spot areas
- extreme riverbank erosion zones.

Landholders will not be 'punished' if choosing not to participate in buy backs but will be supported to continue with improved land management practices. Lands that are bought back from landholders would be managed for river health outcomes, as demonstrated by numerous similar successful actions undertaken along the NSW coast in recent years.

5.6 Scientific framework for landscape design and monitoring

Integrated management of river channels and riparian areas

Recommendations arising from the Richmond Ecohealth assessment are summarised in the box below:

- *Geomorphic condition:* Strongly linked to riparian condition, the active restoration of riparian zone vegetation as a long-term action for improving geomorphic condition must be a priority in the Richmond catchment. The poor geomorphic condition is directly linked to low scores in water quality, macroinvertebrates and riparian vegetation. Improving geomorphic condition, particularly in the mid and lower (including estuary) reaches will lead to an improvement in all other indicators.

- *Riparian condition:* Restoration of the riparian revegetation must be a priority in the Richmond catchment. The lack of streambank vegetation is linked to poor bank condition and localized erosion, sediment deposition and benthic habitat smothering throughout rivers, reduced habitat for biota, and poor water quality (evidenced by high nutrients and turbidity throughout the year).

Water quality: Total and available nitrogen was consistently high throughout the catchment and should be a focus for future water quality monitoring. The highest concentrations of nutrients were not associated with increased flows (freshes) in the Wilsons or Richmond Rivers, suggesting the channels contain high loads of nutrients at all times, either transported with sediment in high flows or released during low oxygen conditions under low flows. Reducing nutrient concentrations in the channel may require a reduction in catchment inputs over the long term.

- *Water quality:* The clear longitudinal pattern of increasing turbidity and nutrients with distance downstream highlights the need to improve riparian and bank condition throughout the catchment as a management priority. Improvement of water quality in the Richmond catchment therefore requires significant investment in reducing diffuse sources of fine sediments and their associated nutrients. Reducing stock access to the steep and fine-grained banks in the upper reaches would be an important step, as would vegetating those riparian zones to increase their buffering capacity for terrestrially derived nutrients.
- *Water quality:* The poorest water quality was recorded from the sites closest to the tidal limit, highlighting their role as depositional environments for both freshwater and estuarine contaminants, and the importance of this zone as a focal point for future monitoring programs. Low DO concentrations, low pH and high Chlorophyll a (algal biomass) and nutrient concentrations were a feature of estuarine reaches. Focal reaches for future monitoring are from upstream of Tatham on the Richmond River and upstream of Lismore on the Wilsons River, as well as North Creek in the lower estuary.
- *Aquatic macroinvertebrates*: Macroinvertebrate scores were low throughout the catchment. This reflects poor water quality and habitat conditions, particularly the geomorphic change to channels (U-shaped channels) and smothering of habitat with fine sediment. The potential for localized increases in macroinvertebrate condition (e.g., upper Richmond, Rocky Creek) suggest habitat restoration (e.g., riparian zone, woody and organic debris, macrophytes, riffles) and therefore food availability, disturbances such as sediment smothering, and water quality (nutrients and turbidity) must be targeted to improve macroinvertebrate condition.

These recommendations emphasise the significance of riparian restoration, stabilisation of erosion and sedimentation processes and habitat restoration works across the catchment areas. The CZMP includes strategies to implement these types of works.

Whilst the CZMP provides an effective framework of strategies and supporting actions and describes in detail the associated tasks, these are described at a fairly high level - neither the CZMP itself nor any supporting document provides a specific defined set of tasks and on-ground works, with an accompanying budget. Whilst the CZMP does provide indicative funding requirements, this is not based on a specific understanding of the overall quantum of work to 'fix' the river, but an estimate of a reasonable investment.

Without a defined, costed and mapped schedule of works, there is the risk that projects will be undertaken in a manner that is inconsistent with the priority/intentions of the CZMP as described above. A prescribed and mapped 'schedule of works' and associated costs would allow projects to be rolled out in a prioritised manner and in a way that progress can be accurately tracked.

Whilst the need to undertake additional planning/riparian restoration work is not always a popular thing to do when the need for urgent on-ground work is apparent, this is also a required critical element of any future catchment rehabilitation plan such as the NRWI.

There has been excellent research on sediment yields and transport in the Richmond catchment and some prioritisation work completed, and there are also some known areas for high priority works. Nevertheless, it is critical that any significant investment in river health into the Tweed, Brunswick, Richmond and Evans River catchments and estuaries be based on a detailed understanding of the primary sources of sediment delivered to waterways and the interactions with riparian and floodplain vegetation.

"Erosion mitigation measures differ depending on the erosion process being treated it is important to correctly identify the dominant source of erosion before attempting local or catchment-wide management to control it" (Olley et al. (2013). Therefore, a key element of the NRWI is considered to be a detailed investigation of vegetation change and geomorphology in the catchments, including detailed riparian condition assessments and associated sediment tracing studies.

This approach has been applied in the Hunter Catchment (Pietsch et al., 2017) and is now being applied in the Manning Catchment in a refined form using catchment-wide LiDAR data. This allows the current riparian vegetation condition to be precisely quantified and a strategy developed for prioritising the implementation of riparian works. These data then enable detailed plans to be developed and costed. They also provide a basis for monitoring the progress of the program implementation and measuring the success of the program in achieving the core goals, such as reducing bank erosion. Examples of these outputs are provided in Figure 2 and Figure 3.

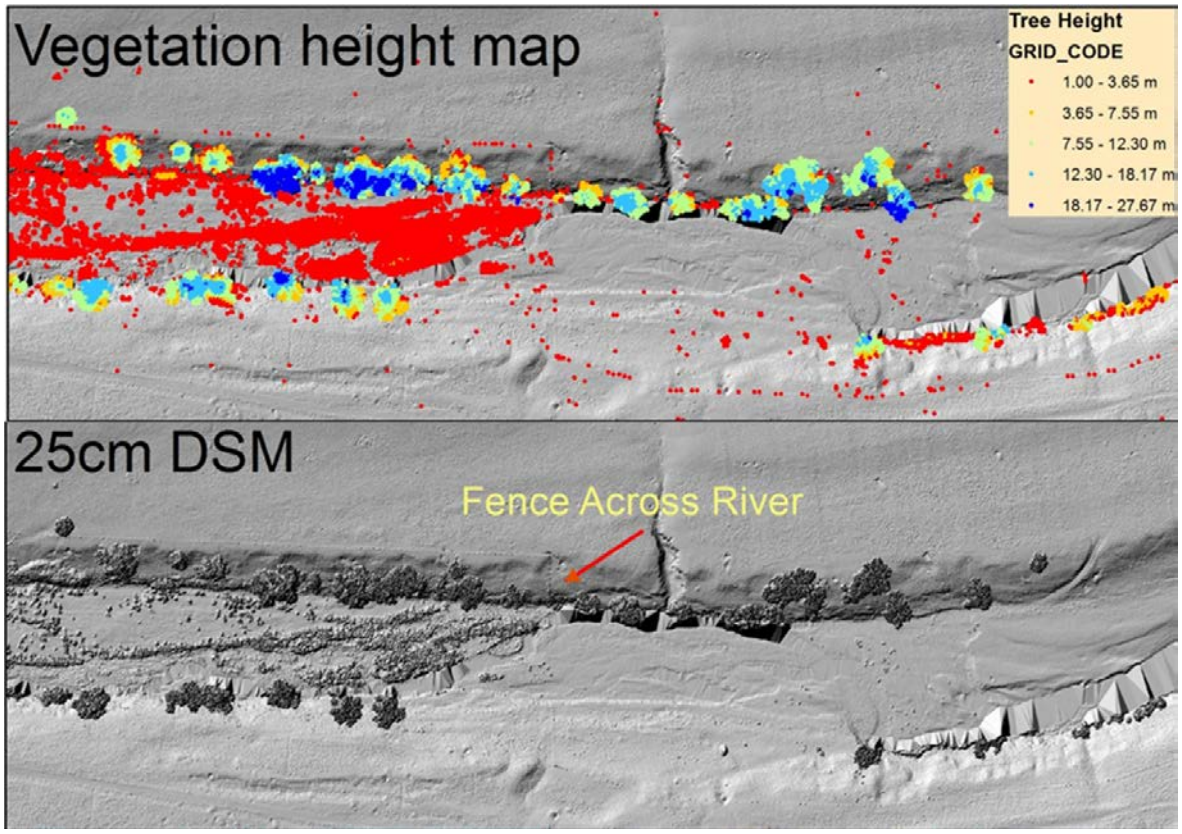

Figure 2: Example of the LiDAR data in the Hunter catchment and how it is used to quantify riparian vegetation cover and community structure (Pietsch et al., 2017)

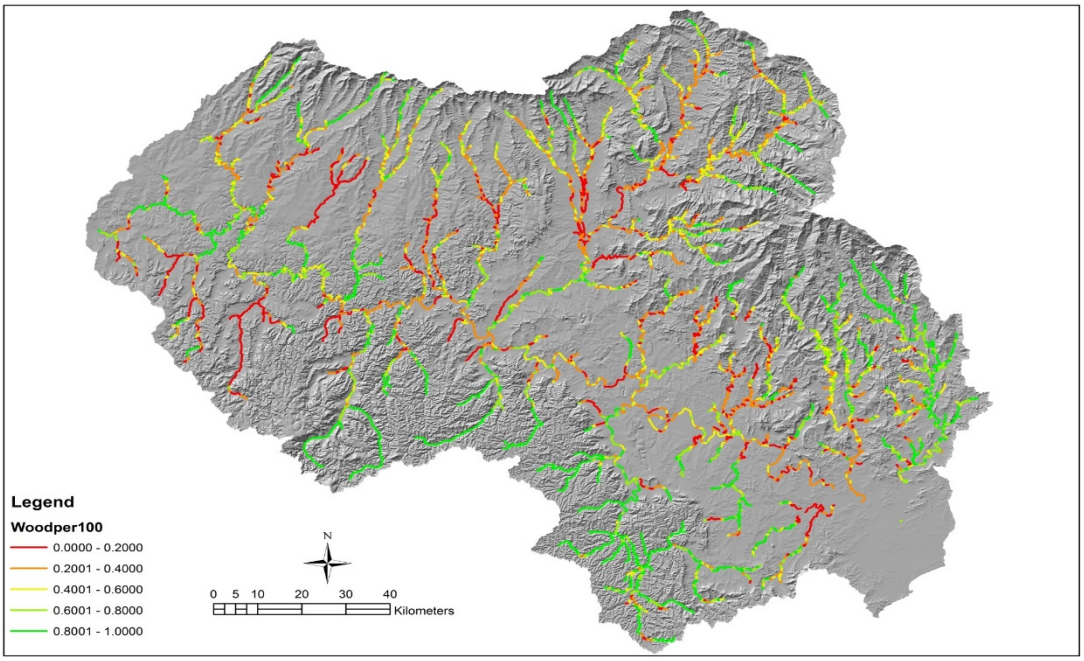

Figure 3: Example of the catchment scale woody riparian vegetation assessment undertaken in the Hunter Catchment. Red = low cover green = high cover (Pietsch et al., 2017)

Potential Research Program - *Will blending natural and physical capital strengthen flood resilience*?

Southern Cross University (SCU) has developed an ARC linkage grant proposal, which will bring together a number of issues relating to land management in the catchment, and flood mitigation under the auspices of the National Centre for Flood Research with affiliated researchers. Potential elements would include:

- landholder communications
- hydrological modelling
- vegetation planning and assessment
- soil and topography
- livelihood opportunities and financial assessment
- river governance and flood risks
- building nature into engineering.

In designing this research program, it will be important to learn from the experience that has been gained in the Great Barrier Reef catchments involving the management of agricultural fertiliser and pesticide runoff. Recent policy development has involved the development of ReefCredits (https://www.reefcredit.org/) – a market-based approach that is being applied to encourage farmers to minimise the application rates of fertilisers and pesticides. It can also provide financial incentives for implementing riparian revegetation works. A program such as *"Exploring environmental market-based mechanisms for reducing fertilizer and pesticide application rates, and riparian management"* will be considered in the design of the NRWI.

6. IMPLEMENTATION

Implementation of the NRWI would be based on the following:

6.1 Consultation

This report provides an outline of a **potential program only**. This will now be subject to additional consultation with a range of stakeholders including constituent councils, industry groups, community organisations, and leading researchers.

Any subsequent model pursued needs to be developed with the input of leading researchers to ensure that any subsequent investment is well targeted and is focussed on achieving multiple outcomes.

Development of the initial concept has been informed by discussions between the Rous County Council Chair, and a number of industry, university, community, government representatives regarding the progression of initiatives to address river health and flooding in the Richmond River catchment.

Additional consultation has been undertaken at officer-level with representatives from constituent councils, NSW Government agencies and the research community.

6.2 Integration

A key aspect of the further development of the NRWI will be to integrate with existing initiatives across all stakeholder groups, including the rollout of the NSW Government Marine Estate Management Strategy and the Governance review within the Richmond River catchment being undertaken by the Office of Environment and Heritage (OEH).

6.3 Early wins / planning for the future

Whilst the need to undertake additional planning work is not always a popular thing to do when the need for urgent on-ground work is apparent, this is also a critical element of the governance/administration that is required and so whilst any such initiative needs to deliver some 'early wins', it will be equally important that any subsequent investment is well targeted and informed by science.

6.4 Landholder involvement

As emphasised throughout this document, works undertaken on the NRWI would be done so on a voluntary basis executed through property agreements with landholders.

6.5 Timeframe

Should this discussion paper be endorsed for further consultation, Rous County Council shall take this to the Northern Rivers Joint Organisation early in 2019.

Implementation of the NRWI would involve expenditure of the $150 million package over a 10-year or 15-year program of works.

7. REFERENCES

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Attachment 8:

Letter from NOROC to Minister for Transport

noroc

Northern Rivers Regional Organisation of Councils inc

9 May 2014

The Hon. Gladys Berejiklian, MP
NSW Minister for Transport
Level 35 Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Dear Minister

RE: Casino to Murwillumbah Rail Trail

On behalf of the councils in the Northern Rivers I wish to declare our support for the development of a rail trail on the Casino to Murwillumbah Rail Line.

NOROC acknowledges the ARUP report on the Casino to Murwillumbah Rail Trail Feasibility Study is expected to be released shortly and we look forward to reviewing and commenting on the report. In the meantime the Mayors believe the development of a rail trail along the rail corridor from Casino to Murwillumbah has the potential to significantly enhance the economy of the region, as well as being an attraction that will disperse visitors throughout the Northern Rivers.

Whilst there is strong community support in some local government areas for the retention of rail services on the line, the Mayors also see the benefits of the development of a rail trail along the corridor to ensure that it is kept in public hands. Indeed we continue to see the rail line as a vital future transport link for the entire region. NOROC Mayors also agree on the potential for the rail trail to operate in unison with a possible rail line-based public and group transport within a the Byron township precinct at some time in the future.

I reiterate our support for the development of a rail trail on the Casino to Murwillumbah Rail Line and we look forward to discussing the proposal with you at a later date.

Yours faithfully

Cr Barry Longland
President

Attachment 9

Media release – June 2014

27 May 2013

noroc

Northern Rivers Regional Organisation of Councils inc

MEDIA RELEASE

NOROC SUPPORTS RAIL TRAIL AND BYRON COUNCIL'S PLANS FOR RAIL-BASED PUBLIC TRANSPORT

The Northern Rivers Regional Organisation of Councils (NOROC) supports the development of a rail trail along the corridor of the Casino to Murwillumbah rail line as a way of ensuring the land remains in public hands.

Whilst the Mayors agree on the benefits of the development of the rail trail in the absence of trains, they do also acknowledge the Byron Shire Council's aspirations to develop a rail-based transport system that would utilise existing local infrastructure on the Casino to Murwillumbah rail line.

NOROC President, Cr Barry Longland, said the immediate enhancement of public transport systems within the Byron shire, and indeed across the Northern Rivers, is a priority for NOROC councils, and the development of a rail trail should not compromise this.

"The Byron Council is confident local rail services can operate within its shire, and that this form of public and group transport could co-exist with the development of a rail trail," Cr Longland said.

The NOROC Mayors believe the Casino to Murwillumbah rail trail will create a significant opportunity to enhance the economy of the entire region, encouraging visitors to travel beyond the coast to discover the other facets of the Northern Rivers.

Cr Barry Longland, said the rail line was seen as a vital transport link for the whole region.

"The Northern Rivers is a scenically diverse area and the Casino to Murwillumbah rail corridor cuts through some of the most stunning parts of the region," Cr Longland said.

"NOROC is now awaiting the release of the ARUP report on the Casino to Murwillumbah Rail Trail Feasibility Study and we look forward to reviewing and commenting on the report," he said.

NOROC represents the Tweed, Byron, Lismore, Kyogle, Richmond Valley and Byron Local Government areas.

For more information contact NOROC President Cr Barry Longland on 0458 525 372 or Executive Officer Annie Lewis on 0404 046 152.

NOROC | PO Box 816 Murwillumbah NSW 2484 | Ph: 0404046152 | info@noroc.com.au | www.noroc.com.au

Attachment 10:

Concord Blue presentation

WHAT IS
CONCORD BLUE REFORMER®?

World-wide patented & patent pending waste conversion process.

Advanced gasification steam thermolysis using staged reforming.

WHAT IS
CONCORD BLUE REFORMER®?

Biomass

Agriculture waste

Sewage Sludge

Plastics

Municipal solid waste

Hospital waste

...and many more

CONCORD BLUE REFORMER®

Electricity

Biofuels

Biochar

CONCORD BLUE REFORMER®
WHO IS IT FOR?

Cost savings transportation and **disposal**

Industrial

Sustainability

- Reduction of carbon footprint
- Overall emission reduction
- Self generation of power and fuel

CONCORD BLUE REFORMER®
WHO IS IT FOR?

On site conversion to value

Transportation cost savings

Commercial/ Institutional

Disposal cost savings

Sustainability

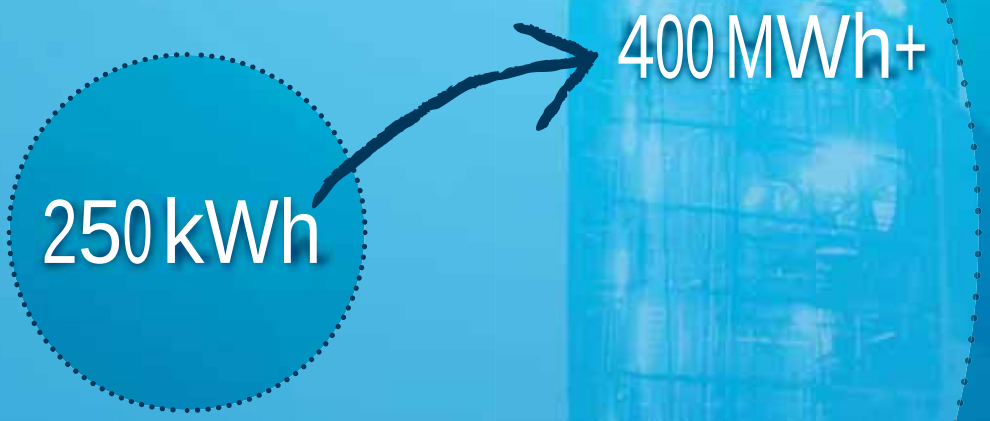
What no one else can do

1. Size
2. Input
3. Output
4. Environment

WHY **CONCORD BLUE REFORMER®**?
WHAT NO ONE ELSE CAN DO

1 Size Infinitely Scalable

Modular solution can be built as small as 250kWh and larger than 400MWh



2 Input Multi-feedstock

Any non-inert material is suitable in any combination

WHY **CONCORD BLUE REFORMER®**?
WHAT NO ONE ELSE CAN DO

3 Output Ultra-clean Syngas

Suitable for high efficiency engines and fuel production

Environment

Super Low Emissions

No formation of dioxins and furans

Reduces residual waste volumes going to landfills and incinerators

Concord Blue Solution

Generates baseload energy

WASTE TO ENERGY
DRIVERS / ADVANTAGES

Tipping fees are rising ~6% yearly, making our reformers **increasingly financially attractive**

Concord Blue Solution

- **NON INCINERATION, low emissions**
- **Reducing greenhouse gasses created by landfills**

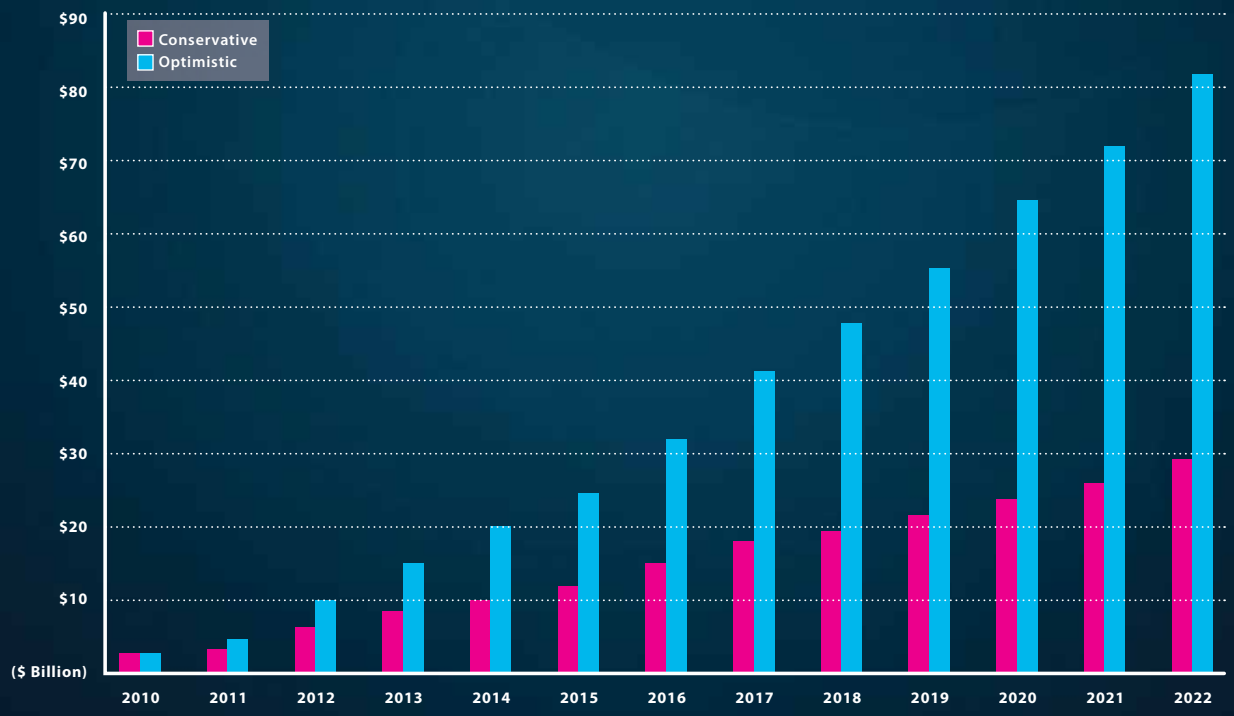
WASTE TO ENERGY
DRIVERS / ADVANTAGES

Recovery of metals/ high value materials

Concord Blue Solution

High value byproduct options such as **biochar**

WASTE TO ENERGY
DRIVERS / ADVANTAGES



Waste to Energy Market Value

by **Forecast Scenario, World Markets: 2010–2022**

OUR TECHNOLOGY
OUR PROCESS

Concord Blue® Technology

The Ceramic Beads

Ceramic heat carrier beads used to achieve a constant, thorough and equal heat transfer to the waste material.

The flue gas from the char/gas oxidizer is used to heat the carrier beads.

Why is **Concord Blue**® better?

Modular, scalable with proven feedstock flexibility

Oxygen-free process, assisted by nitrogen purge system

OUR TECHNOLOGY
WHY IS **CONCORD BLUE**® BETTER?

Why is **Concord Blue**® better?

Steam reforming eliminates tars

Flexible, adjustable fully automated system results in operating costs lower than competing technologies.

Why is **Concord Blue®** better?

The hydrogen rich syngas produced can be used directly in reciprocating engines to create electricity, separated to produce pure hydrogen, or further refined to produce liquid fuel and chemicals.

Global Market Approach

Work with qualified developers and local partners

Master License Agreements afford developers the right to obtain the requisite licenses for multiple projects

Thank you

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