ACT Government
Environment, Planning and Sustainable Development

UNCLASSIFIED

BRIEF

To:	Technical Regulator	**Tracking No.:** 24/53542
CC:	Acting Deputy Director-General, Access Canberra	
From:	Executive Branch Manager Environment, Land and Technical Regulation, Access Canberra	
Date	4 June 2024	
Subject:	Triple Bottom Line Assessment for the Inner North Reticulation Network	
Critical Date:	In the normal course of Business	
Critical Reason:	To comply with the Ministerial Exemption condition	

Purpose

To accept the Triple Bottom Line (**TBL**) assessment for the Inner North Reticulation Network for the operating period 2017-18 to 2021-22.

Recommendations

That you:

1. **Note** the information contained in this brief;

Noted / **Please Discuss**

2. **Sign** the letter at Attachment A addressed to Transport Canberra and City Services accepting the assessment.

Signed / **Not Signed / Please Discuss**

Personal information

Ben Ponton 7/6/2024

DG Feedback

Background

1. The Inner North Reticulation Network (**INRN**) is a neighborhood scale stormwater harvesting and reuse project, located in Canberra's north-eastern suburbs, within the Sullivans Creek Catchment. The INRN, operated by Transport Canberra and City Services (**TCCS**), provides fit-for-purpose non-drinking water to customers for irrigation and dust suppression.

2. Under Section 22 of the *Utilities Act 2000,* in 2019, TCCS, were exempted from holding a utility licence in Disallowable Instrument DI2019-268 for providing a utility service in the form of the reticulation, supply and sale of non-potable water supplied from the INRN. As a result of this exemption, TCCS became an unlicensed regulated utility and was required to hold an Operating Certificate issued under Part 6 of the *Utilities (Technical Regulation) Act 2014*.

3. Condition 5(e) of the exemption required TCCS to '*provide a triple bottom line assessment of the scheme that includes a cost-benefit analysis after 5 years in operation (2017-18 to 2021-22) and then every 5 years thereafter'.* A triple bottom line (TBL) assessment involves assessment of economic, environmental, and social considerations, and provides information on the achievement of sustainability outcomes.

4. This condition was imposed to inform future decisions about water sensitive urban design, integrated water cycle management and future stormwater harvesting options for the ACT.

5. In May 2024, TCCS submitted a Wellbeing Impact Assessment (**WIA**) (Appendix B) to Utilities Technical Regulation to satisfy the initial TBL assessment requirement. The TBL assessment used the ACT Government's 'Wellbeing Impact Assessment' framework[1]. This framework allows the assessment of the environmental, social and economic costs and benefits. A detailed Economic Analysis prepared by ACT Treasury informed the WIA Attachment C.

6. Mr Laslo Nagy, Independent Certifier for the INRN, reviewed the TBL assessment and provided a letter of endorsement Attachment D.

Wellbeing Impact Assessment Findings

7. Income and operating expenses over the assessment period were $346,309 and $561,883 per year, respectively. This resulted in a net financial loss of $215,574 per year. Key reasons for the shortfall were:

    - Stormwater usage and thus revenue was significantly reduced during the years where La Nina conditions prevailed (2020-21 and 2021-22) i.e. two of the five years.
    - The water price is capped at Icon Water's Tier 2 price for potable water, which was insufficient to recover cost given the small customer base.
    - Some users have access to alternative water sources;
    - Operating expenses are relatively stable and do not vary significantly with usage.

8. The scheme provided financial savings to users by allowing them to substitute more expensive potable water with less expensive non-potable water for irrigation.

9. Environmental and social impacts were identified and were quantified economically where possible. These impacts are as follows:

[1] See ACT Government Wellbeing Framework

- Positive impacts: reducing the effects of urbanisation; water security; water quality improvement (valued at $309,000 pa); peak flows, biodiversity (valued at $30,500 pa); microclimate; health (valued at $40,900 pa); social networking (valued at $102,600 pa); customer experience; fertilizer requirements; and water quality improvements (benefit of $84,100 pa). The quantifiable positive impacts totaled to $567,000 per year.
- Negative impacts on climate change (due to use of energy).
- Irregular impacts on revenue and operational cost.

The difficulty and complexity in assessing several of the positive impacts was noted.

10. With the broader environmental and social benefits to the ACT community included in the economic assessment, the INRN delivered a positive economic benefit of $567,000 per year, exceeding the net financial loss of $215,574 per year. The INRN had overall benefit-cost ratio of 1.62.

11. Based on the initial TBL for the INRN, the ACT Government can continue to plan to extend the existing stormwater harvesting and reuse scheme and plan for new schemes.

Financial Implications

12. In simple financial terms of income versus expenditure, in the initial 5-year term of operation, the INRN operated at a loss of $215,574 per year. It is likely that the INRN will continue to operate at a net financial loss in the next term also.

Consultation

13. ACT Healthy Waterways provided input to the WIA.

Benefits/Sensitivities

14. The INRN provides fit-for-purpose water to customers, reduces demand on the drinking water, assists urban water quality outcomes and supports outdoor recreation activities with flow on health benefits.

15. The TBL shows that when the broader environmental and social benefits are considered, the INRN delivers a positive economic benefit of $567,000 per year to the ACT community.

Media Implications

16. Media interest in the TBL for the INRN is unlikely.

Signatory Name:	Matthew Kamarul	Personal information
Action Officer:	Cherie Blackburn	Personal information

Attachments

Attachment A: Letter to TCCS

Attachment B: Wellbeing Impact Assessment

Attachment C: Economic Analysis

Attachment D: Independent Certifier Endorsement

atech group

Cherie Blackburn
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Utilities Technical Regulation
Environment, Land and Technical Regulation Branch
Access Canberra
Chief Minister Treasury and Economic Development Directorate
ACT Government
Tel 02 6207 8741
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Dear Cherie,

RE: INRN Tripple Botom Line (TBL) assessment after 5 years of operation (2017-18 to 2021-22)

I would like to thank Utilities Technical Regulation for the opportunity to review the abovementioned document and supporting information, on the Inner North Reticulation Network (INRN), from Transport Canberra and City Services (TCCS).

A draft of the assessment was provided to me by TCCS and as part of my review, I indicated a number of suggested comments, changes and some additional sources of relevant information.

As you know, undertaking such a triple bottom line assessment (i.e. environmental, social and economic), is a difficult exercise for a stormwater harvesting scheme such as INRN, because the costs are often relatively large and attributable to a few entities (in this case TCCS), however the benefits accrue in relatively small amounts but to many individuals (in this case the ACT community). Furthermore, the costs can be expresses relatively easily in $ per year, but the benefits are generally non-market traded goods, which are often difficult to convert to $ per year benefits.

Nevertheless, the assessment was able to make use of available information from the ACT Government, as well as from other relevant sources, to undertake a triple bottom line assessment.

As the Independent Certifier for the INRN, I endorse the INRN Tripple Botom Line (TBL) assessment for the 5 years of operation (2017-18 to 2021-22).

Please feel free to contact me should you require any further information.

Yours Sincerely

Personal information

Managing Director
Atech Group Pty Ltd

Personal information

24/04/2024

Inner North Reticulation Network – Economic Analysis

Background

1. The Inner North Reticulation Network (INRN) was introduced in 2015-16 and is Canberra's first neighbourhood-scale stormwater harvesting and managed aquifer recharge system, constructed with financial support from the ACT and Australian Governments. The system captures urban stormwater in constructed wetlands and treats it before pumping it through a reticulation network for irrigation of urban green spaces.

2. The INRN is currently used by 6 ACT Government entities belonging to either the Education Directorate or Economic Development (Sports and Recreation) within CMTEDD, 2 high-intensity club users (Yowani Golf Club and the Canberra Racing Club) and 6 other private entities.

3. Users of the INRN pay a usage charge and the non-potable Water Abstraction Charge (WAC), with the usage charge being the larger of the two revenue streams, accounting for over 90 per cent of the total revenue collected each year. Note that the non-potable WAC is not retained by TCCS as it is treated as a pass-through cost paid to the Environment Protection Authority (EPA).
    a. In 2023-24, the INRN usage charge is 3.974 per kilolitre (kL) and the non-potable WA is 0.334 per kL.

4. The ACT Government currently provides schools with a 50 per cent concession on their INRN usage charge. Since 2015-16, the INRN has provided water to three schools. Of the three schools, only one used over 100kL annually, with the other two using negligible amounts. Given the low overall usage, the total amount of concessions provided has been relatively small.

5. In accordance with the disallowable instrument Utilities (Licensing) Exemption 2019 (DI2019-268) and the Regulatory Plan, an audit of the INRN is required after 5 years in operation (2017-18 to 2021-22). The Transport Canberra and City Services Directorate (TCCS) is responsible for managing the INRN and will lead in the development of the audit. Treasury has been asked to assist TCCS in developing a benefit and cost assessment that focuses on the economic and financial aspects of the INRN.

6. In considering the INRN from a financial and economic perspective, Treasury has taken into account:
    a. The number of INRN users and level of consumption;
    b. the dollar per kilolitre cost of supplying non-potable stormwater from the INRN;
    c. the cost saving to each end user from substituting potable water use via the INRN.

Executive Summary

7. Overall, under current arrangements and based on data from 2017-18 to 2021-22, the INRN does not appear to be financially viable, i.e. revenue collected from the INRN was not able to cover its costs. Reasons are as follows:
    a. Stormwater usage and revenue collected from the INRN were highly volatile and reduced significantly during wet years like 2020-21 and 2021-22;
    b. Price set under the INRN is effectively capped at Icon Water's Tier 2 price for potable water, which is insufficient to recover cost given the existing customer base;
    c. The INRN has a small customer base, and some users have alternative water sources; and
    d. Overall costs are relatively more stable compared to revenue and does not vary significantly with usage.

8. However, the INRN was able to provide savings to users by allowing users to substitute the more expensive potable water with the less expensive non-potable water for irrigation. The INRN also provides environmental, social and economic benefits, which are not quantified in this analysis. Those benefits include:
    a. protecting Lake Burley Griffin, through reducing inflows of nutrient rich stormwater and algal blooms in the lake;
    b. securing reliable supply of stormwater for irrigation in peak season by enhancing the Territory's water storage capabilities; and
    c. reducing demands on precious potable water and costs of water, through substituting high-quality, high-value drinking water used for irrigation with cheaper, fit-for-purpose stormwater.

Analysis

Drivers of stormwater usage

9. The INRN's customer base consists of 6 ACT Government entities belonging to either the Education Directorate or Economic Development (Sports and Recreation) within CMTEDD, 2 high-intensity club users (Yowani Golf Club and the Canberra Racing Club) and 6 other private entities.

10. As shown in **Table 1**, the ACT Government is responsible for consuming the majority of the stormwater supplied by the INRN, using around 80 per cent of the annual supply between 2017-18 and 2021-22.

Table 1 – INRN stormwater consumption by user type, 2017-18 to 2021-22

User type	No. of users	Proportion of stormwater use in 2017-18 (%)	Proportion of stormwater use in 2021-22 (%)
ACT Government	6	79	89
High-intensity clubs	2	20	1
Others	6	1	10

11. The usage of stormwater from the INRN is negatively impacted by the level of rainfall, which varies significantly from year to year. As shown in **Figure 1**, during the 5-year period 2017-18 to 2021-22, the

usage of stormwater from the INRN falls whenever the level of rainfall rises.

12. Usage dropped sharply in 2020-21 and fell further in 2021-22 as a result of the high levels of rainfall in those years. Both 2020-21 and 2021-22 were considered wet years.
    a. 2021 was the wettest year recorded at Canberra Airport[1] since 2010, and the fifth-wettest year on record.

13. ACT Government and high-intensity club users are the main drivers of the fall in stormwater usage (see **Figure 2**). Annual usage by high-intensity clubs fell to extremely low levels in 2020-21 and 2021-22 as they have access to their own surface water and ground water, and they would opt to exhaust those sources before accessing the INRN given those sources incur lower costs.

Figure 1 – INRN stormwater consumption and rainfall, 2017-18 to 2021-22

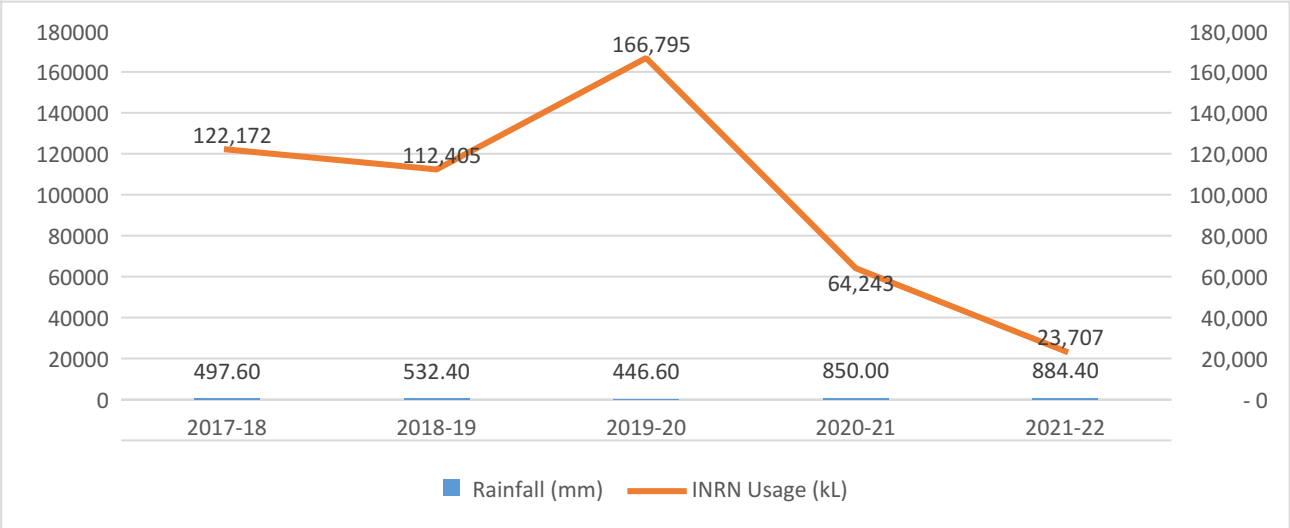
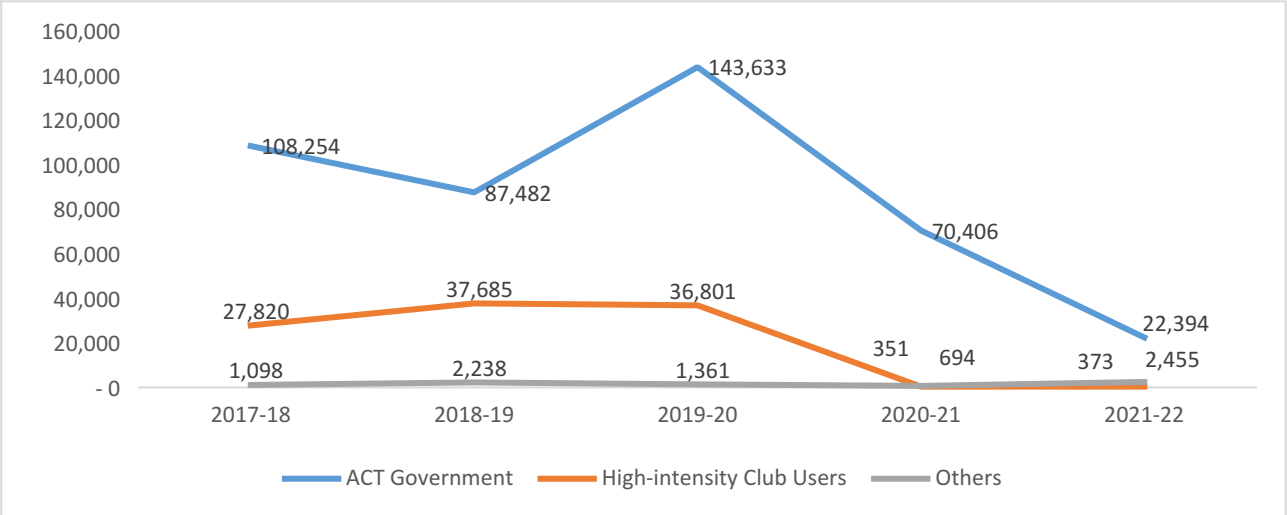


Figure 2 – INRN stormwater consumption by user type, kilolitre, 2017-18 to 2021-22



[1] ACT in 2021 (bom.gov.au)

Revenue from INRN

14. Users of the INRN pay a usage charge and the non-potable WAC. The INRN usage charge was indexed at the beginning of each financial year using the Wage Price Index, while the non-potable WAC appeared to increase by 3 per cent per annum (see **Table 2**).

Table 2 – INRN charges

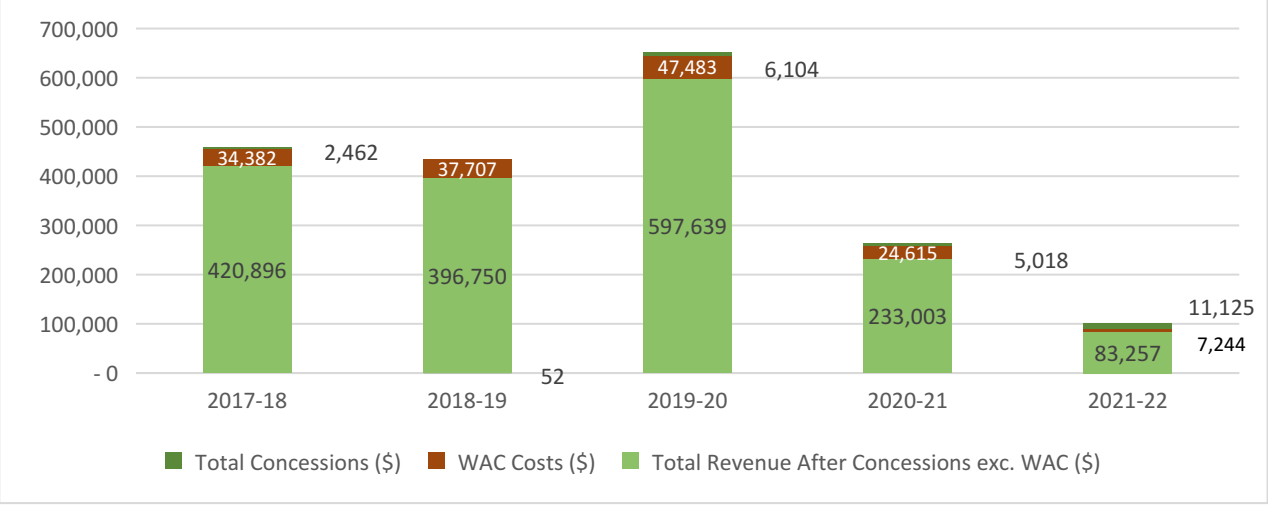
Financial year	INRN usage charge ($/kL)	Non-potable water WAC ($/kL)	Total charge ($/kL)
2017-18	3.46	0.278	3.74
2018-19	3.53	0.287	3.82
2019-20	3.61	0.296	3.91
2020-21	3.69	0.305	4.00
2021-22	3.74	0.314	4.06

15. Figure 3 provides a breakdown of the total revenue that are supposed to be collected through both the INRN, including the INRN usage charge, WAC and the concession provided to schools (i.e. 50 per cent discount on their INRN usage charges).

16. On average, total revenue actually collected through the INRN is $376,595 per year, including $346,309 from the INRN usage charge and $30,286 from the non-potable WAC. The average annual concession provided to schools was around $5,000.

17. As with the stormwater usage, total revenue collected fell sharply in 2020-21 and 2021-22 due to high levels of rainfall and decisions by individual users to access alternative water sources.

Figure 3 – INRN revenue and concession, exclusive of non-potable WAC



Costs of INRN

18. The INRN's costs comprise primarily of operating and maintenance costs, depreciation costs and staffing costs. A breakdown is shown in **Figure 4** below.

19. Costs have remained relatively stable across the five years at around $510,000 per annum, with the exception of 2019-20 which saw higher operating and maintenance costs and one-off Utilities Technical Regulator (UTR) costs[2].

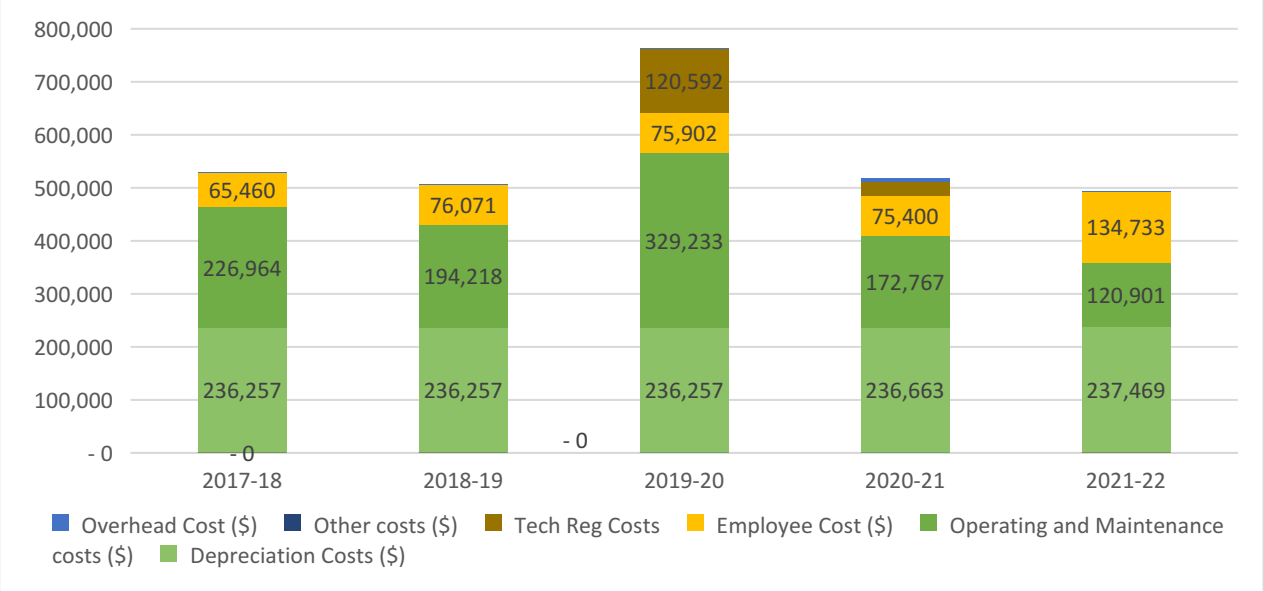
20. The largest contributor to the INRN's total cost in most years has been its depreciation costs, which account for around 42 per cent of total costs. These costs are calculated based on a number of infrastructure assets which directly relate to the INRN's water supply elements, such as the pumps and pipes used to supply water to users.

21. The second largest contributor is operation and maintenance costs, which account for approximately 37 per cent of total costs. These costs have varied significantly each year as it depends on usage levels and the need for maintenance to the network.

22. Staffing costs for the INRN have averaged $85,513 each year and account for 15 per cent of the total costs each year. Staffing costs almost doubled in 2021-22 due to higher staffing level required.

23. Other cost components include the overhead costs and regulatory costs incurred by the UTR.

Figure 4 – INRN costs, exclusive of non-potable WAC

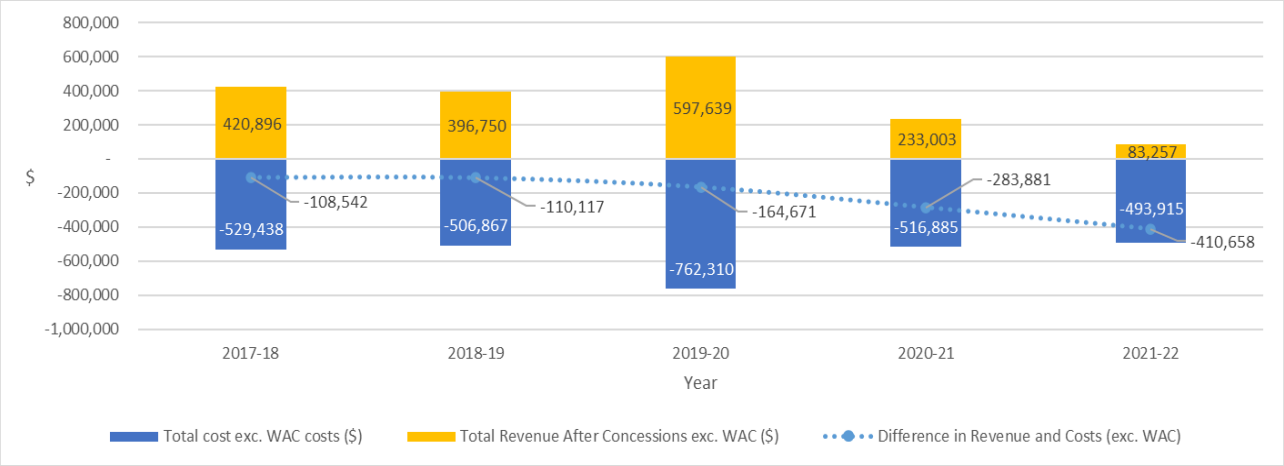


[2] The UTR costs in 2019-20 relate to providing the INRN with a Service Operating Certificate in accordance with a Service Regulator Plan.

Appropriateness of the current pricing framework for the INRN

24. **Figure 5** compares the total revenue and costs associated with the INRN from 2017-18 to 2021-22 with total revenue being consistently lower than total costs at an average deficit of $217,574 each year. It should also be noted that the deficit has increased nearly 4 times over the 5-year period, which highlights the fact that the INRN would incur significant net cost to the Government in a year with high level of rainfall.

Figure 5 – Revenue and cost comparison, exclusive of non-potable WAC



25. **Table 3** provides a summary of the average annual usage, revenue and costs of the INRN, based on the level of rainfall, with dry years referring to 2017-18 to 2019-20 and wet years representing 2020-21 and 2021-22. While the INRN is shown to be making a net loss in both dry and wet years, it is apparent that the INRN's net revenue is severely impacted in wet years, with the net costs being close to triple that in a dry year.

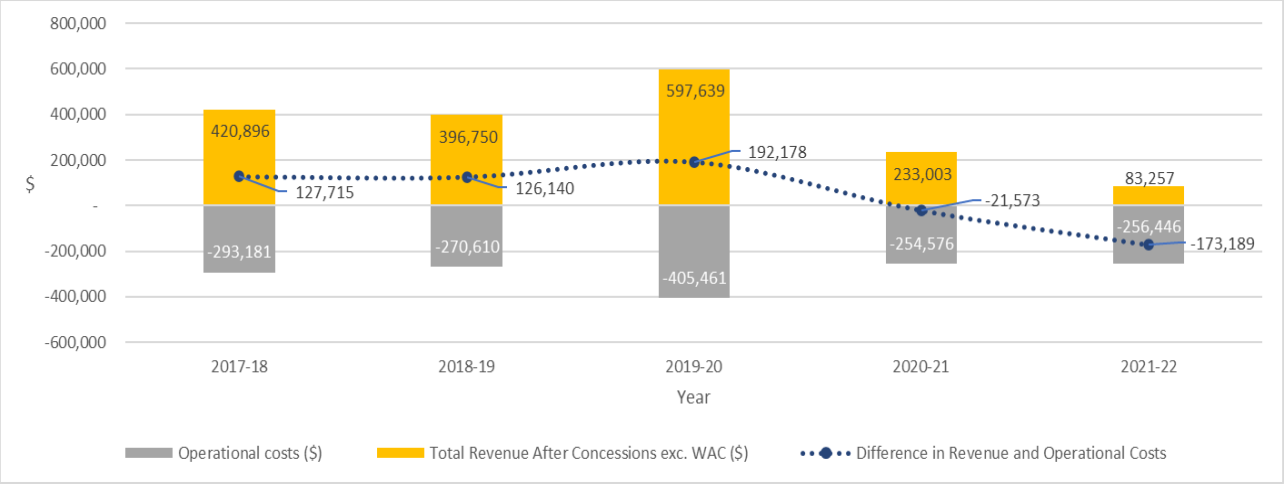
Table 3 – INRN metrics in dry and wet years

	Annual usage	Annual revenue	Annual costs	Net revenue/cost
Dry years	148,790	471,762	599,538	127,777
Wet years	48,337	158,130	505,400	347,270

26. Figure 6 compares total revenue to the operational costs[3] only and shows that revenue exceeds operational costs in 2017-18 to 2019-20. However, in the wet years of 2020-21 and 2021-22, the revenue collected is still insufficient to offset the operational costs.

[3] Operational costs contain all costs other than the depreciation costs of the INRN.

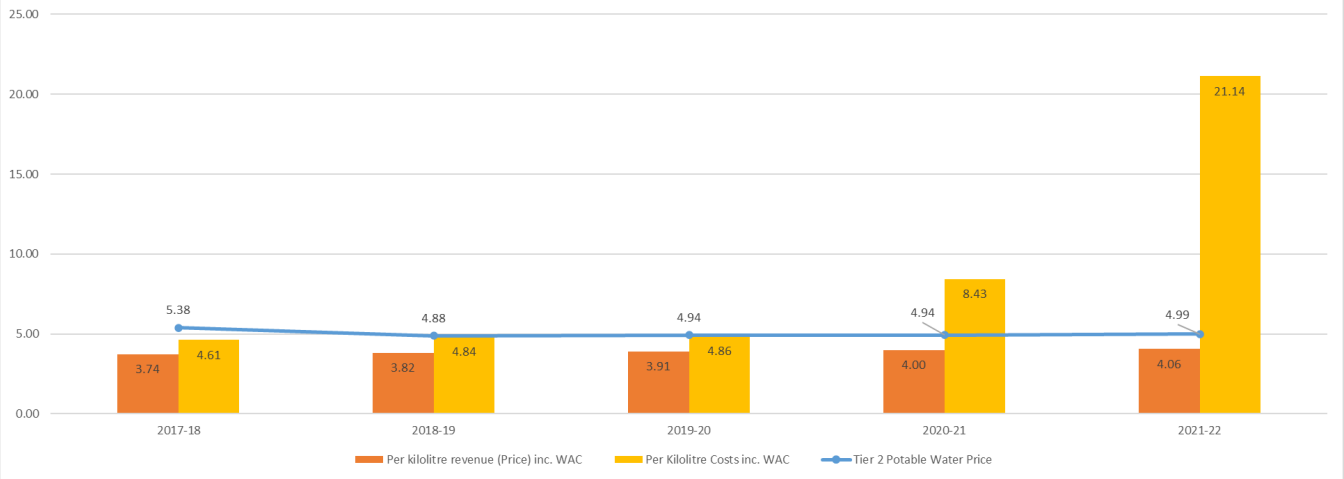
Figure 6 – Revenue and operational cost comparison



27. **Figure 7** compares the actual stormwater price of the INRN to a full cost recovery price necessary for the INRN to recuperate its total costs. We compare the price with Icon Water's Tier 2 potable water price (potable water price) to see if a full cost recovery price in a year is viable.[4] We treat potable water price as the highest price the INRN can set for the stormwater, as we consider potable water and stormwater are substitutes and it is only beneficial for the users to use water at the cheaper price.

28. It appears that a full cost recovery price may be viable in dry years, like from 2017-18 to 2019-20, where the total per kL costs (inclusive of the non-potable WAC) do not exceed the potable water price. However, cost recovery is not viable in wet years like 2020-21 and 2021-22, given that doing so would require charging at a rate higher than the potable water price, which would see INRN users switch to potable water instead.

Figure 7 – Per kilolitre revenue and cost comparison to the Tier 2 potable water price, I



[4] Icon Water's Tier 2 potable water pricing applies to usage in excess of 50kL per quarter. We consider the Tier 2 price a price ceiling for the INRN, given that most users of the INRN are expected to treat potable water as a perfect substitute for water supplied from the INRN. Furthermore, given that the INRN charge at present already exceeds Icon Water's Tier 1 potable water price, from a pricing perspective the Tier 1 price should not impact demand for the INRN given that it's already in their interest to use up to 50kL of potable water per quarter.

Other benefits of the INRN

29. A benefit of the INRN is that it provides financial benefits to its users given it grants users access to lower cost water for irrigation. **Table 4** shows that the INRN delivered potential savings of $637,880 in total over the period 2017-18 to 2021-22, or an average of $127,576 per annum.
    a. The ACT Government users had the most potential savings of around $505,218 over the five years, followed by high-intensity club users, which had around $124,153 worth of save over the same period.
    b. Note savings are calculated based on the assumption that users would use the same amount of potable water in spite of the higher price. However, in reality, a higher price could result in a reduction in water consumption.
        i. On average, potable water price is around 30 per cent higher than the INRN stormwater price (inclusive of non-potable WAC).

Table 4 – Savings to INRN users

	ACT Government	High-intensity Club Users	Others	Total Savings
2017-18	177,536	54,625	1,801	224,962
2018-19	92,731	39,946	2,372	135,049
2019-20	147,942	37,905	1,402	187,249
2020-21	66,182	330	652	67,164
2021-22	20,827	347	2,283	23,457
Total	505,218	124,153	8,510	637,880

30. There are also environmental, social and economic benefits, including protecting Lake Burley Griffin from algal blooms, providing reliable supply of stormwater for irrigation, and maximising the benefit of different water sources. Those benefits are not quantified in this analysis; however, they should be considered in determining the overall efficacy of the INRN.

31. By harvesting stormwater, the INRN is able to reduce nutrient loads flowing downstream, which could lead to lower instances of algal blooms in Lake Burley Griffin. This helps improve the water quality in Lake Burley Griffin, which an iconic landmark for the Territory and where many events and activities take place around or on the lake.
    a. We consider this benefit could be partially quantified through determining the effect of the INRN on algal blooms, and by calculating the amount of expenses the Government would have saved in mitigating algal blooms.

32. In addition, the nutrients in stormwater can also represent a valuable resource for irrigation, reducing the amount of fertiliser required by end users.

33. There are also health benefits of a reduction in algal blooms, although this would be more difficult to quantify.

34. Another benefit of the INRN is that it provides users a reliable source of water for irrigation purposes, given that one of its functions is to store filtered stormwater in an aquifer during cooler months, thereby replenishing the groundwater system and enabling this stored water to be used during peak irrigation periods in summer or in times of drought.

35. This helps reduce the need for INRN users to irrigate using potable water, which is a more valuable source of water and creates greater utility when used for human consumption, particularly in a dry year.

Further Consideration

36. This analysis is not intended for providing recommendation to the pricing structure for the INRN. Further work may be required to help determine the appropriate methodology to set up and index the price for stormwater from the INRN.

37. Further work can be undertaken to analyse the economic viability (rather than the financial viability) of the INRN, by quantifying the environmental, social and economic benefits of the infrastructure. While the INRN may not be financially viable for the Government, it could be economically beneficial to the Territory.

38. The Government may wish to consider whether to continue the operation of INRN, balancing the financial and economic viability of the INRN, water security of the Territory, as well as the fact that Government users are the main beneficiaries of the infrastructure.

39. The Government may also wish consider ways to expand the consumer base of the INRN as this may help provide stability in the stormwater usage and recover the costs of the INRN.

WELLBEING IMPACT ASSESSMENT

Name	TCCS	Inner North Reticulation Network Audit

Purpose of Assessment

INRN is required to undertake an audit of the network, including customers and cost-benefit analysis after 5 years in operation (2017-18 to 2021-22) in accordance with DI2019- 268 Utilities (Licensing) Exemption and the Regulatory Plan.

Assessment by

Tutu Subeih (Assistant Director – Stormwater Harvesting, ACT Government)

Reviewed by

Ralph Ogden (Program Manager- ACT Healthy Waterways, ACT Government)
Laslo Nagy (Independent Certifier INRN, Atech Group Pty Ltd)

Background

The Inner North Reticulation Network (INRN) is the Sullivans Creek component of the Canberra Integrated Urban Waterways Project, which was jointly funded in 2007 by the Australian and the ACT Governments as part of the Water Smart Australia Program (Gilles, 2014).

The main aim of INRN was to capture stormwater in constructed wetlands and use the harvested stormwater (following treatment), to irrigate urban green spaces such as sporting fields and parks. The expected environmental, social and economic benefits included (ACT Government, 2015):

- reduced nutrient loads and algal blooms in Lake Burley Griffin,
- reduced demand on potable drinking water supplies, and
- provision of greater urban green spaces such as sporting fields and parks (especially during droughts).

Over the period between 2009 and 2012 the ACT Government, through significant financial commitments, increased the ACT's water security, with additional potable water sources such as the Enlarged Cotter Dam and the Murrumbidgee to Googong Transfer.

Consequently, a review by the Independent Competition and Regulatory Commission (2012), recommended that investments in public secondary water (for example greywater, stormwater, treated effluent and rainwater), should not be undertaken in the foreseeable future, given the high water security of the ACT, and the relatively high cost of secondary water (compared to that of drinking water).

Based on the ICRC (2012) review, the ACT Government decided to complete the soon to be finished INRN project, but did not go ahead with the other components of the Canberra Integrated Urban Waterways Project (ie. in Yarralumla, Weston and Ginninderra Creek catchments).

The INRN was to be evaluated after a five-year trial period to inform future decisions about water sensitive urban design, integrated water cycle management and future stormwater harvesting options for the ACT (Gilles, 2014).

This report provides the abovementioned evaluation for the five-year period from 2017-18 to 2021-22, in two main components:

- A financial analysis, which by definition is a relatively focused assessment as it only considers the income and expenditure for the provider of a service, in this case Transport Canberra and City Services (TCCS).
- An economic analysis. This is sometimes called wellness impact assessment, cost-benefit analysis, or triple -bottom-line assessment, as it considers (or tries to consider), environmental, social and economic costs and benefits of a service. An economic analysis is thus broader and relatively more complex, as it often involves valuing costs and benefits that are not traded in a market and thus have no readily available associated $ values. It is also more complex as care must be taken to not double-count some of these non-traded costs or benefits. Furthermore, cost are often incurred by a few relatively identifiable entities, whereas the benefits often flow to many individuals (but potentially in small amounts).

WELLBEING IMPACT ASSESSMENT

Financial Analysis

The detailed analysis was undertaken by TREASURY (ACT Government), and is provided as Attachment A to this report. For the five-year period from 2017-18 to 2021-22, the INRN had an average:

- Revenue (income) of $346,309 per year.
- Expenditure (cost) of $561,883 per year.

Thus the INRN resulted in a financial loss of $215,574 per year to TCCS.

Economic Analysis

The remainer of this report provides an economic analysis of INRN. As mentioned previously, this is sometimes called a wellness impact assessment, which is the terminology used in this report. Other names (for the same or similar assessment), include triple-bottom-line assessment (i.e. environmental, social and economic), cost-benefit analysis, cost effectiveness analysis and/or regional economic impact assessment.

The wellness impact assessment included the following identified environmental, social and economic INRN impacts (some resulting in positive, some in negative impacts):

1. Positive impact on reducing the effects of urbanisation
2. Positive impact on water security
3. Positive impact on water quality improvement
4. Positive impact on peak (i.e. flood) flow
5. Negative impact on climate change (due to use of energy)
6. Positive impact on biodiversity
7. Positive impact on microclimate
8. Positive impact on health
9. Positive impact on social networking
10. Irregular impact on Revenue and Operational Costs
11. Positive impact on customer experience
12. Positive impact on fertilizer required
13. Positive impact on Water Quality Improvements
14. Positive Cost-Benefit Analysis (CBA)

Not all of these impacts could be expressed in $ terms, due a lack of sufficient, or relevant or comparable information. Furthermore, some impacts were not expressed in $ terms, or counted in $ terms, as they overlapped to some extent with other impacts (and it would have resulted in some double-counting).

A description of the impacts, along with their metrics, benefit flows and benefit calculations (where relevant or appropriate), are indicated in the sections below.

These assessments indicated an economic benefit (or wellness benefit, or triple-bottom line benefit, or cost-benefit) of about $567,000 per year for the ACT community. This mostly consisted of:

- Benefit of $309,000 per year from impact 3 above.
- Benefit of $30,500 per year from impact 6 above.
- Benefit of $40,900 per year from impact 8 above.
- Benefit of $102,600 per year from impact 9 above.
- Benefit of $84,100 per year from impact 13 above.

A separate, self-contained cost-benefit analysis was carried out for comparative purposes (impact 14 above). This indicated that INRN is estimated to have a net present value of $10.43 million and a benefit–cost ratio of 1.62.

Based on these assessments, the INRN economic benefit of $567,000 per year to the ACT community exceeded the financial loss of $215,574 per year to TCCS.

WELLBEING IMPACT ASSESSMENT

Impact description

The INRN has wellbeing impacts on the following domains:

Environment

Impact	**1. Positive impact on reducing the effects of urbanisation**
Description	The INRN is located in urban suburbs within the Sullivans Creek catchment. It reduced the negative impact of urbanisation by reducing the volume of high-pollutant stormwater within waterways. This stormwater was trapped and treated in ponds before being used for irrigation and construction purposes.
Metrics	During the reporting period 767,884 kL of stormwater was harvested including 545,982 kL of stormwater, which was supplied to customers.
Major/minor	This impact is sustained every year and is a direct result of normal operations so is defined as major under the wellbeing framework.
Benefit flows to	This benefit flows to the ACT community, as a non-market benefit.
Benefit calculation	The positive impact on reducing the effect of urbanisation is an important benefit. However, to avoid potential double counting of benefits, the benefit calculation for this impact is included in the benefit calculation for impact 3 (positive impact on water quality improvement).

Impact	**2. Positive impact on water security**
Description	The INRN reduced demand on the ACT's drinking water supplies by supplying stormwater for irrigation and construction purposes. As a result, more drinking water was available for future droughts.
Metrics	During the reporting period 767,884 kL of stormwater was harvested including 545,982 kL of stormwater, which was supplied to customers.
Major/minor	This impact is sustained every year and is a direct result of normal operations so is defined as major under the wellbeing framework. It is noted that the results are subjectively more apparent during dry weather conditions.
Benefit flows to	This benefit flows to the ACT community, as it reduces the demand for drinking water and thus delays the time when an additional water source may be needed by Icon Water.
Benefit calculation	The amount of INRN treated stormwater used per year is about 110,000 kL, which is similar to 1 day's drinking water use during water restrictions, by the Canberra population. This could slightly delay the need for an additional water source by Icon Water. However, given that the next water source for Canberra may not be needed for some time, the additional water security provided by INRN is difficult to express in $ per year. Consequently, although increasing water security is a benefit of INRN, the $ per year amount of this benefit is not included in this assessment.

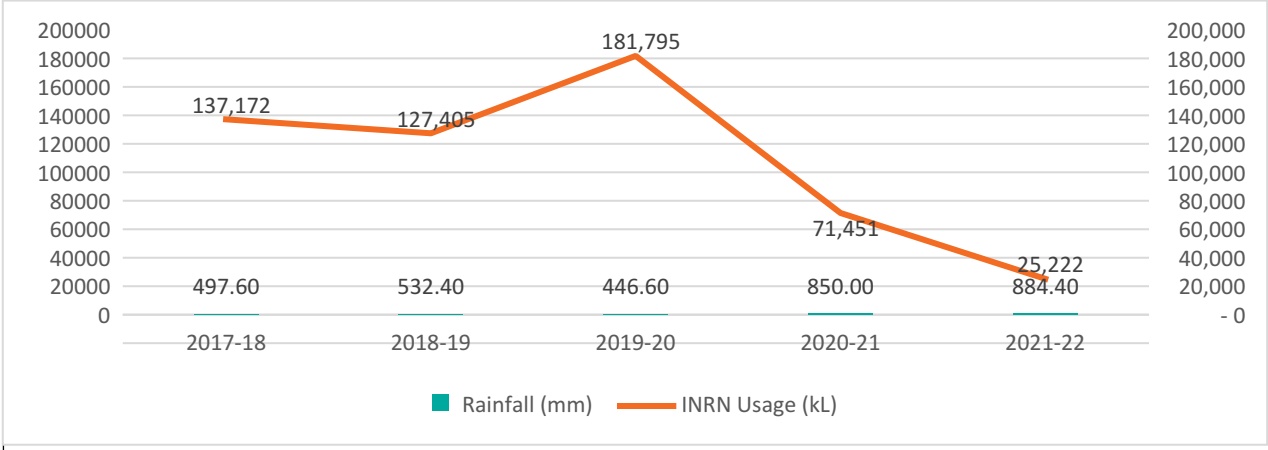


Figure 1 – Annual rainfall and INRN supply volumes

Impact	**3. Positive impact on water quality improvement**
Description	The INRN network and ponds removed nutrient-rich stormwater from Sullivans Creek and used it for irrigation which directly reduced nutrient loads and indirectly reduced algal blooms in Lake Burley Griffin.
Metrics	Using MUSIC model of Lyneham and Dickson ponds and WQ data for the reported period, the INRN network and ponds were able to remove **337,500 kg** of **TSS**, **452 kg** of **TP** and **3,548 kg** of **TN** and diverted these loads from waterways to irrigation. This has a substantial impact in terms of protecting Lake Burley Griffin from the risk of algal blooms by cutting a significant portion (about **0.0015mg/L per annum**) of the threshold concentration of 0.025 mg/L dissolved P, where the risk of algal blooms is increased.
Major/minor	This impact is sustained every year and is a direct result of normal operations so is defined as major under the wellbeing framework.
Benefit flows to	This benefit flows to the ACT community.
Benefit calculation	INRN represents a reduction of about 5% in the threshold dissolved P level in Lake Burley Griffin each year. Assuming that INRN provides a water quality improvement for Lake Burley Griffin of just 1% (possibly a conservative estimate), it is possible to express this in $ per year, using information provided on Lake Burley Griffin by the Office of the Commissioner for Sustainability and the Environment (2012), Report on the State of the watercourses and catchments of Lake Burley Griffin. This report, authored by Robert Neil contains in Appendix B an economic impacts report entitled 'Investigation into the state of Lake Burley Griffin and catchment: economic impact of

	water quality issues' compiled by Ian Lawrence. The report identified in detail 'the economic benefits flowing to the Canberra community as a result of activities based on or associated with the Lake values and amenity, and the impact on these benefits as a result of actual or perceived water quality issues and Lake closures'. The assessment found that the total annual economic value attributable to the Lake was $23.3 million (in 2012 $). This is the equivalent of about $30.9 million in 2024 $ (using the increase in CPI over the 11 years as provided by the Reserve Bank of Australia (2024). As indicated above, assuming 1% of this could be attributed to INRN, this provides a water quality improvement to the ACT community of $309,000 per year.

Impact	**4. Positive impact on peak (i.e. flood) flow**
Description	The INRN's ponds reduce the peak flow from storm events more frequent than the 20% Annual Exceedance Probability (AEP). Reducing peak flow also reduces the downstream flood risk to life and property, the risk of erosion from high velocity flows, and the mass of sediment carried by flows into downstream lakes and ponds. As stated in the Dickson and Lyneham Ponds FSP Report (2010), "the wetlands have been designed to provide significant attenuation for small flood events (up to [20% AEP]) but with limited space for further flood mitigation, there will be little to no attenuation for the larger flows."
Metrics	Qualitative measure. The flood attenuation benefit has not been quantified during the design and operation of the pond assets, nevertheless the ACT Healthy Waterways Program will be able to quantitatively estimate this measure in the next year as models are developed.
Major/minor	This impact is sustained every year and is a direct result of normal operations so is defined as major under the wellbeing framework.
Benefit flowing to	This benefit flows to the ACT community, particularly those residing in the Sullivans Creek catchment.
Benefit calculation	As indicated above, the INRN provides significant attenuation for small flood events (up to [20% AEP]) but with limited space for further flood mitigation, there will be little to no attenuation for the larger flows. Consequently, INRN provides some flood reduction benefits, but the $ per year amount of this benefit is not included in this assessment.

Impact	**5. Negative impact on climate change (due to use of energy)**
Description	The INRN's greenhouse gas emissions were quantified using the Greenhouse Gas Protocol across scopes based on electricity use and transport data. The emissions due to vegetation, pond aerobic conditions, office energy use, purchased goods, indirect services, and waste disposal were not accounted in this assessment as it was judged that these would be minor contributors and be costly to quantify.

Major/minor	This impact is sustained but is indirect so is defined as minor under the wellbeing framework.
Dis-benefit flowing to	This particular dis-benefit (i.e. negative impact) flows to the Australian (and world) community, as greenhouse gas emissions are released into the atmosphere.
Dis-benefit calculation	Given that the majority of the calculated greenhouse gas emissions are from Scope 2 (consisting of indirect emissions associated with the use of electricity/energy), and that the ACT will be net-zero emissions by 2045 (ACT Government 2019, ACT Climate Change Strategy 2019-2025), the $ per year amount of this dis-benefit is not included in this assessment.

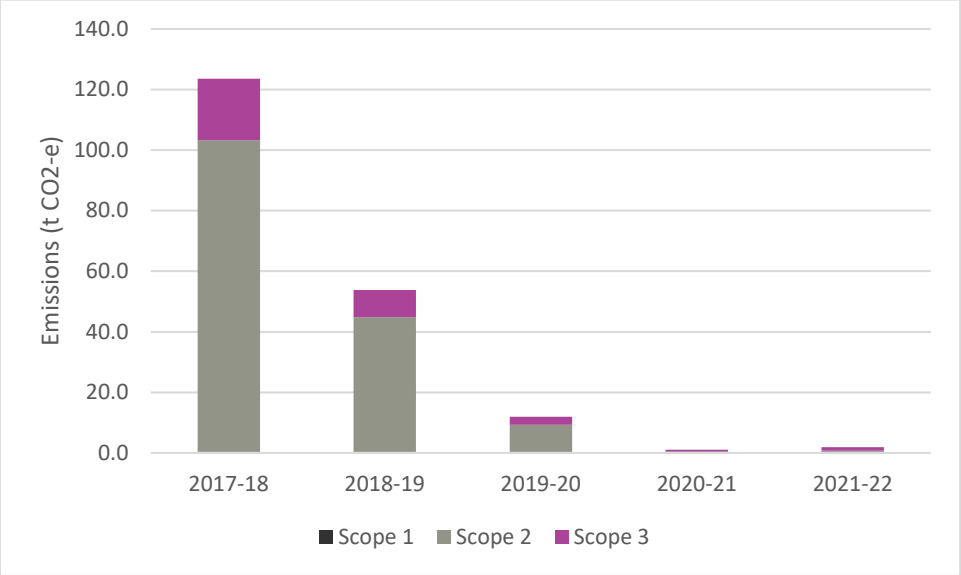


Figure 2 – Annual INRN greenhouse gas emissions

Impact	**6. Positive impact on biodiversity**
Description	INRN ponds created aquatic habitat for plants and wildlife within Sullivans Creek, where native water plants trap nutrients and bolster biodiversity in the territory. Diverse and connected habitats are primary drivers of healthy and biodiverse ecosystems. This important impact attracted the ACT Government to develop a long-term aspirational vision and landscape plan for Sullivans Creek and its surrounding waterways, wetlands, and reserves.
Metrics	During the reporting period INRN ponds provided 40,000m2 of aquatic habitat.
Major/minor	This impact is sustained every year and is a direct result of normal operations so is defined as major under the wellbeing framework.
Benefits flowing to	This benefit flows to the ACT community, particularly those residing in the Sullivans Creek catchment.
Benefit calculation	The biodiversity benefit of INRN is a non-market benefit. To express this benefit in $ per year, information was used from the CRC for Water Sensitive Cities, which has compiled an Investment Framework For Economics of Water Sensitive Cities (INFFEWS). This provides a Benefit Cost Analysis tool, guidelines and resources that can be used for the estimation of non-market benefits of infrastructure such as stormwater harvesting schemes, with benefits

	expressed in $ per year. INFFEWS tool was used for a case study in Taralla Creek, Victoria, which was a stormwater harvesting project, with wetland creation (E2Design for CRC for Water Sensitive Cities, 2020). This provided a willingness-to-pay value of $37 per person for ecological improvement (a generally similar benefit to biodiversity improvement). There are 16,506 people in the INRN suburbs of Lyneham, Dickson, Hackett and Downer (based on the 2021 Census). Assuming 5% of these experience the biodiversity impact benefit of $37 (possibly a conservative estimate), then this represents $30,500 per year.

Impact	**7. Positive impact on microclimate**
Description	INRN waterbodies (wetlands and ponds) and irrigated landscapes support an oasis effects, where warm air moves over a wet surface, significantly enhancing evapotranspiration. This provides a means of cooling adjacent urban landscapes.
Metrics	During the reporting period, INRN ponds provided 40,000m^2 of permanent water surface area and customer irrigation area exceeded 140 ha.
Major/minor	The impact of ponds is sustained every year and is a direct result of normal operations so is defined as major under the wellbeing framework. The impact of irrigation is sustained but is indirect so is defined as minor under the wellbeing framework.
Benefits flowing to	This benefit flows to the ACT community, particularly those residing in the Sullivans Creek catchment.
Benefit calculation	The microclimate benefit of INRN is a non-market benefit. Due to a lack of sufficient, or relevant or comparable information, the $ per year amount of this benefit is not included in this assessment.

Social

Impact	**8. Positive impact on health**
Description	INRN improved physical and mental wellbeing by directly providing water assets with a recreation function and also by indirectly providing maintained parks and ovals via irrigation.
Metrics	The four suburbs that INRN operated in contained 16,506 people based on Australian Bureau of Statistics census data. In a 2022 ANU study[5], 93% of people reported using the pond areas for walking, 46% for vigorous exercise, and 14% for meditation. The incremental health benefit has not been quantified by the ANU 2022 study.
Major/minor	This impact is sustained but is indirect so is defined as minor under the wellbeing framework.
Benefit	This benefit flows to the ACT community, particularly those residing in the Sullivans Creek

flowing to	catchment.
Benefit calculation	To express this benefit in $ per year, information was once again used from the E2Design for CRC for Water Sensitive Cities (2020), which has compiled an Investment Framework For Economics of Water Sensitive Cities (INFFEWS). INFFEWS tool for the case study in Taralla Creek, Victoria, which was a stormwater harvesting project, with wetland creation (E2Design for CRC for Water Sensitive Cities, 2020), indicated a willingness-to-pay value of $49.57 per person for improved health from reduced inactivity (a generally similar benefit to impact on health). There are 16,506 people in the INRN suburbs of Lyneham, Dickson, Hackett and Downer (based on the 2021 Census). Assuming once again that 5% of these experience the health benefit of $49.57 (possibly a conservative estimate), then this represents $40,900 per year.

Impact	**9. Positive impact on social networking**
Description	INRN provided waterbodies and supported open spaces with more opportunities for education, recreation and volunteering.
Metrics	The four suburbs that INRN operated in contained 16,506 people based on Australian Bureau of Statistics census data. In a 2022 ANU study[5], 6% of people reported using the pond areas for walking with family, 4% for helping kids play, and 3% for walking with others. The incremental social benefit has not been quantified by the ANU 2022 study.
Major/minor	This impact is sustained but is indirect so is defined as minor under the wellbeing framework.
Benefit flowing to	This benefit flows to the ACT community, particularly those residing in the Sullivans Creek catchment.
Benefit calculation	To express this benefit in $ per year, information was once again used from the E2Design for CRC for Water Sensitive Cities (2020), which has compiled an Investment Framework For Economics of Water Sensitive Cities (INFFEWS). INFFEWS tool for the case study in Taralla Creek, Victoria, which was a stormwater harvesting project, with wetland creation (E2Design for CRC for Water Sensitive Cities, 2020), indicated a willingness-to-pay value of $124.28 per person for improved health from reduced risk of depression (a generally similar benefit to social networking). There are 16,506 people in the INRN suburbs of Lyneham, Dickson, Hackett and Downer (based on the 2021 Census). Assuming once again that 5% of these experience the health benefit of $124.28 (possibly a conservative estimate), then this represents $102,600 per year.

- It is also noted that water security is a social impact. Please refer to impact 2 above.

Economic

Impact	**10. Irregular impact on Revenue and Operational Cost**
Description	The stormwater usage and revenue were unstable and reduced significantly during wet years like the years 2020-21 and 2021-22 as provided in Figure 1, whereas overall costs are relatively stable compared to revenue and does not vary significantly with usage. On average, annual revenue collected through the INRN is $346,309 and annual costs is around $561,883. The largest contributor to the INRN's total cost in most years has been its depreciation costs, which account for around 42% of total costs. When the cost of depreciation was removed the revenue exceeded costs for the first three (drier weather) years of the reporting period but not the last two (wetter weather) years. This suggests that any additional financial support should target capital expenditure (i.e. asset replacement) and operational expenditure during wetter periods.
Metrics	During the reporting period the INRN posted a total revenue of $1,731,545, and total cost of $2,809,415 including total depreciation of $1,182,804. This equated to an average loss of $215,574 per annum. An annual breakdown of revenue and cost is provided in Figure 3.
Major/minor	This impact is sporadic but is a direct result of normal operations and rain amount and defined as major under the wellbeing framework.
Benefit flowing to	The dis-benefits flow to TCCS (part of the ACT Government), and the benefits flow to INRN customers (ACT Government, some schools and some clubs).
Benefit calculation	The benefit of this is the reduced cost of irrigating water, and would appear to be relatively easy to calculate, as it would be the difference between the cost of INRN stormwater and the cost of drinking water. However, these benefits are not included in this assessment as $ per year, as generally, the amount of a service that is purchased reduces as the price increases. Consequently, INRN customers may have used less of the more expensive drinking water, if that was their only option. The other benefits of INRN use, such as improved water quality, improved biodiversity, improved human health have already been included in the assessment as $ benefits per year, and should not be double-counted under this impact.

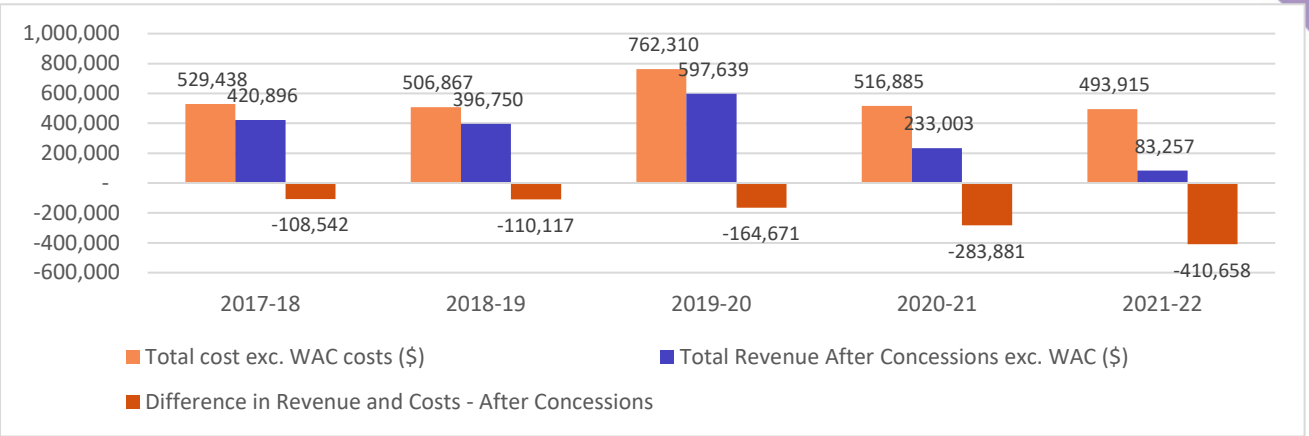


Figure 3 – Annual INRN costs and revenues

Impact	**11. Positive impact on customer expenses**
Description	The INRN charges customers for stormwater supplied at a discounted rate to drinking water. This saves customers money in comparison with them using drinking water for irrigation.
Metrics	During the reporting period the INRN saved customers a total of $637,880. This equated to an average saving of $127,576 per annum.
Major/minor	This impact is sustained and is a direct result of normal operations so is defined as major under the wellbeing framework.
Benefit flowing to	INRN customers (ACT Government, some schools and some clubs).
Benefit calculation	As for the previous impact, the benefit of this is the reduced cost of irrigating water, and would appear relatively easy to calculate, as it would be the difference between the cost of INRN stormwater and the cost of drinking water. However, these benefits are not included in this assessment as $ per year, as generally, the amount of a service that is purchased reduces as the price increases. Consequently, INRN customers may have used less of the more expensive drinking water, if that was their only option. The other benefits of INRN use, such as improved water quality, improved biodiversity, improved human health have already been included in the assessment as $ benefits per year, and should not be double-counted under this impact.

Impact	**12. Positive impact on fertilizer required**
Description	The INRN removed nutrient-rich stormwater from Sullivans Creek and used it for irrigation which directly reduced fertilizer requirements.
Metrics	Based on the estimate for nutrient diversion in impact 3, a 90% CI range estimate of the proportion of fertilizer offset of 1% to 30%, and a price of $3/kg, the financial benefit is estimated at between $106 and $3,194 for the reporting period.
Major/minor	This impact is sporadic but is a direct result of normal operations so is defined as minor under the wellbeing framework.

Benefit flowing to	INRN customers (ACT Government, some schools and some clubs).
Benefit calculation	The benefit of this impact is expected to be relatively minor in terms of $ per year (as mentioned above, between $106 and $3,194 for the reporting period of five years). Consequently, using the middle value, this represents a benefit of $330 per year.

Impact	**13. Positive Impact on Water Quality Improvements**
Description	The INRN removed nutrient-rich stormwater from Sullivans Creek and used it for irrigation which directly reduced nutrient load and indirectly reduced algal blooms in Lake Burley Griffin.
Metrics	Based on the estimate for nutrient diversion in impact 3, the total removal cost during the reporting period is estimated $1,681,953.
Major/minor	This impact is sustained and is a direct result of normal operations so is defined as major under the wellbeing framework.
Benefit flowing to	This benefit flows to the ACT community.
Benefit calculation	The value of $1,681,953 represents a benefit of about $336,400 per year. This benefit may overlap partly with impact 3, water quality improvement, specifically in terms of Lake Burley Griffin. However, the impact of benefit 13 is considerably wider than Lake Burley Griffin, and would include parts of Sullivans Creek downstream of INRN, Molonglo River downstream of Lake Burley Griffin, and the Murrumbidgee River downstream of the Molonglo River. Consequently, the benefit of this impact was assessed at 25% of the abovementioned total (possibly a conservative estimate), resulting in a benefit of $84,100 per year.

Impact	14. **Positive Cost–Benefit Analysis (CBA)**
Description	A separate, self-contained cost-benefit analysis was carried out for comparative purposes. Once again, a conservative approach was taken to estimate the total benefits over a 30-year appraisal period associated with the INRN. The benefits quantified in this analysis are: avoided abatement costs, property price impacts, residual asset values, lake-based recreation, urban cooling and behaviour change benefits, benefits under impact points 11 and 12 and total revenue. The costs quantified in this analysis are: CAPEX, OPEX and depreciation of the assets.
Metrics	The INRN has a present value of benefits of $27.29 million (Revenue of $10.36 million and CBA of 16.90 million) and present value of cost of $16.86 million (see Table 1). Thus, the project has net present value of $10.43 million and a benefit–cost ratio of **1.62**.
Major/minor	**The INRN is estimated to have a net present value of $10.43 million and a benefit–cost ratio of 1.62, thus, the program is found to be economically viable.**

	This impact is sustained and is a direct result of normal operations so is defined as major under the wellbeing framework.
Benefits flowing to	This benefit flows to the ACT community.
Benefit calculation	Cost-benefit analysis (CBA) as indicated above in Description and Metrics, results in a benefit-cost ratio of 1.62.

Table 1 – INRN costs and CBA results ($ million)

Description	Value $M
Appraisal period (years)	30
Present value of benefits	$27.29
Present value of costs	$16.86
Net Present Value	$10.43
Benefit–cost ratio	1.62

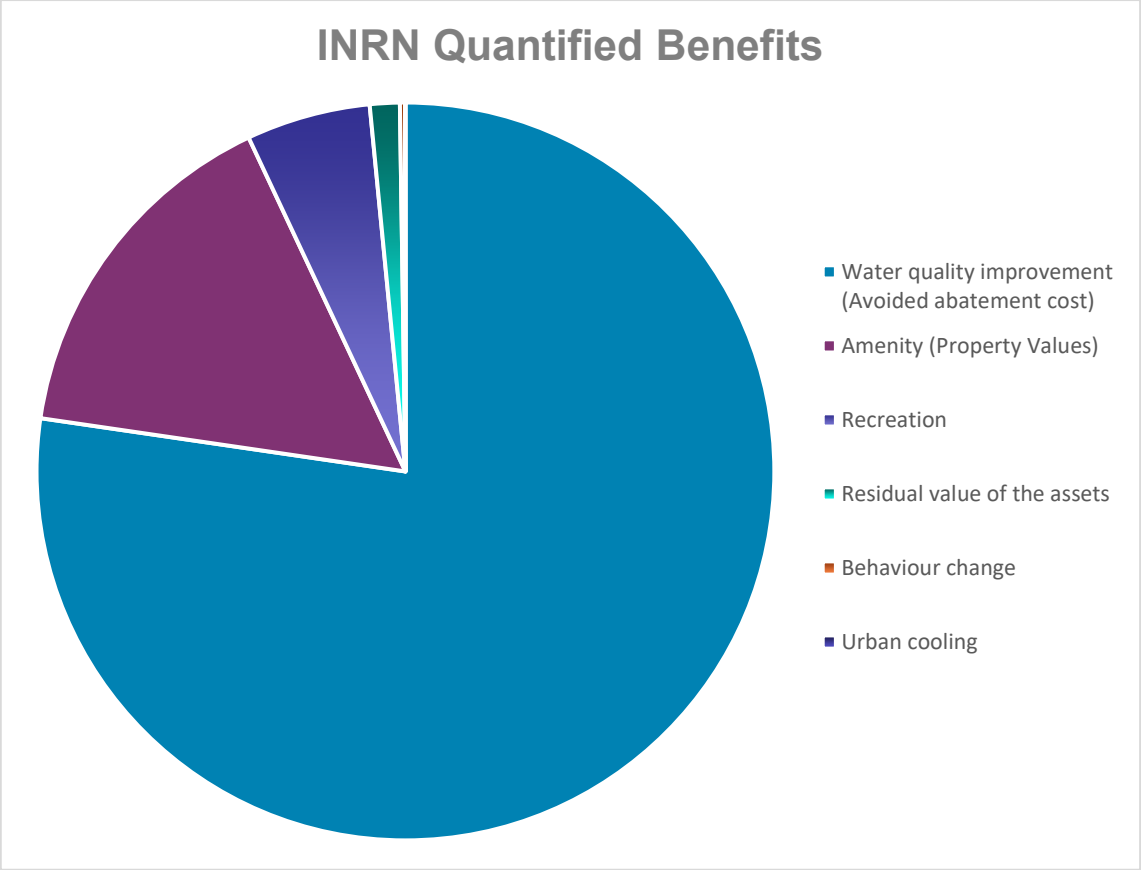


Figure 4 – Breakdown of estimated present value of benefits by benefit type ($ million)

Table 2 – INRN A list of the quantified benefits, valuation approach and key data source, 30-year appraisal period

Benefit	Underlying valuation approach	Unit value source	Key data source (ACT Healthy Waterways: Economic Analysis)	Value M$
Water quality improvement (Avoided abatement cost)	Avoided abatement cost	Average costs of water quality management actions	**ACT Healthy Waterways: Economic Analysis:** • Alluvium (2017) • MUSIC Modelling • Post-program survey	$10.09
Amenity (Property Values)	Hedonic property valuation	Benefit-transfer	**ACT Healthy Waterways: Economic Analysis:** • CoreLogic (2019) • Iftekhar et al. (2019) • Thomy et al. (2016) • ACT Geospatial Data Catalogue actmapi-actgov.opendata.arcgis.com/ • NSW Spatial Services actmapi-actgov.opendata.arcgis.com/	$2.05
Recreation	Travel cost method	Benefit-transfer	**ACT Healthy Waterways: Economic Analysis:** • Aither (2015) • Lansdell and Gagadharan (2003) • HydroNumerics (2015)	$0.71
Residual value of the assets	Willingness to pay estimate	Benefit-transfer	**ACT Healthy Waterways: Economic Analysis:** • Brent et al. (2017) • TARGET modelling	$0.17
Behaviour change				$0.03
Urban cooling				$0.001
Customer Water Savings Value	Impact Point 11	Benefit-transfer		$3.827
Fertilize Value	Impact Point 12	Benefit-transfer		$0.019
			Total	**$16.90 M**

- It is also noted that water security is an economic risk that does not follow a linear or normal distribution. I.e. the economic consequence of prolonged drought can be disproportional costs (e.g. from trucking water or asset construction). Please refer to impact 2 above.
- For information relating to the pricing review, please refer to "Evidence base and data" section below.

Who is affected?

Suburbs with INRN waterbodies and/or irrigated fields are: Lyneham, Dickson, Hackett and Downer. The following table presents the numbers and percentages of specific groups identified under the ACT Government's Wellbeing Framework according to the 2021 census.

Table 3 – INRN suburb demographics (ABS 2021)

Suburb	Lyneham	Dickson	Hackett	Downer	Total
Population (no.)	5,691	3,292	3,227	4,296	**16,506**
Population density (persons/km^2)	1,039	2,090	1,653	2,628.8	
Number of languages spoken	64	47	41	56	
Number of different ancestries	117	96	87	108	
% Aboriginal and/or Torres Strait Islander	1.20%	1.50%	1.30%	1.90%	**1.5%**
% Carer (Child carers+ Aged and Disabled Carers)	1.70%	1.1%	1.0%	1.6%	**1.4%**
% Children and Young People	50.8%	62.2%	64.1%	62.2%	**58.6%**
% Older Canberrans, (65 years and over)	16.7%	7.4%	15.4%	12.6%	**13.5%**
%People with a disability	9.7%	9.7%	16.0%	12.7%	**11.7%**

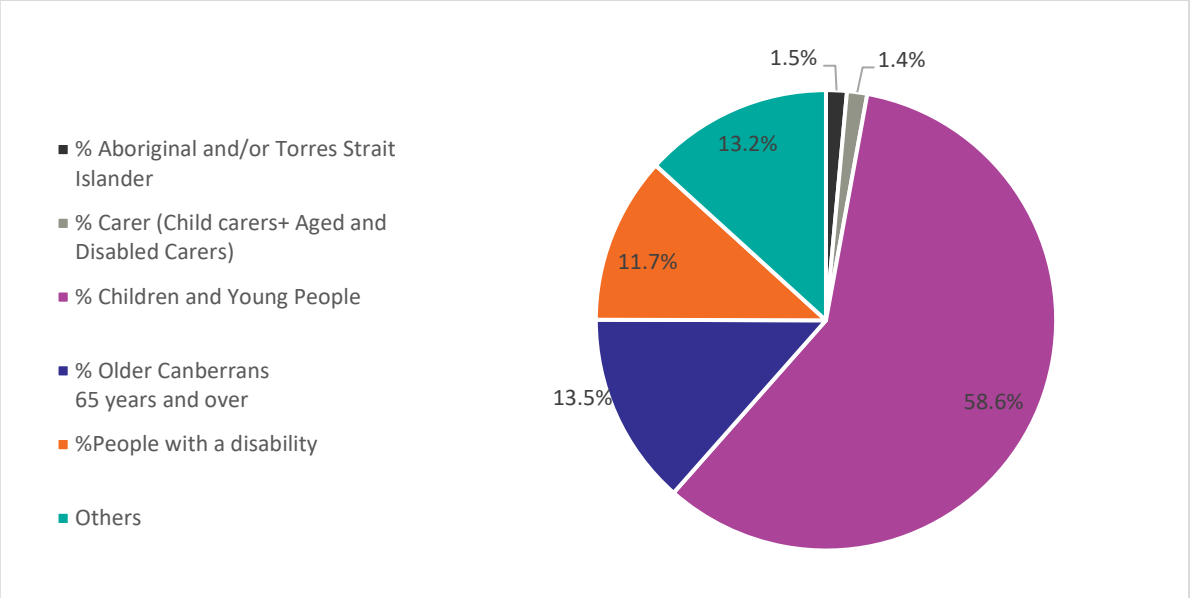


Figure 5 – Percentage of Wellbeing Framework specified groups in INRN operating suburbs

Other customers of INRN; EPIC, Yowani Club, Thoroughbred Park and Southwell Park have visitors from the ACT and surrounding regions through the year. The population that benefits via these customers has not been estimated for this assessment due to the availability of data.

INRN impacts do not specifically target the eight specific groups identified under the ACT Government's Wellbeing Framework. However, some of these groups do currently receive a greater benefit due to their function (e.g. school ovals):

- Aboriginal and Torres Strain Islanders Peoples – nil impact, however it should be noted that the creation and maintenance of green and water recreational areas increase wellbeing and improves physical and mental health.
- Carers – nil impact

- Children and Young People – nil direct impacts, however it should be noted that the creation and maintenance of green and water recreational areas increases wellbeing and improves physical and mental health. Further the reuse of stormwater is a sustainable approach to water utilization and will benefit future generations.
- Culturally and Linguistically Diverse People – nil direct impacts however it should be noted that there is a diverse culture within the affected area.
- LGBTIQ+ People – nil impact
- Older Canberrans – nil direct impacts, however it should be noted that the creation and maintenance of green and water recreational areas increase wellbeing and improves physical and mental health.
- People with a disability – nil impact
- Across gender People – nil impact

Wellbeing domain

Environment and climate

Timeframe

Between one and five years

This assessment is for the first five operational years of INRN (2017/18- 2021/22)

Evidence base and data

What do we know now?

The following sources were used as evidence for this assessment in addition to other resources under References:

1- INRN control system data for the volume of stormwater supplied to customers.
2- Water quality data collected during INRN operations.
3- Rainfall data from the Bureau of Meteorology
4- Finance data from TCCS financial systems
5- Social impact data, e.g.:
Adhikary, Ripon Kumar Kumar and Richardson, Alice and STARRS, DANSWELL and Glass, Kathryn and Lal, Aparna, Perception of Water Quality in Urban Ponds is Influenced by Location, Age and Recreational Activities of Users. Available at SSRN: https://ssrn.com/abstract=4163592 or http://dx.doi.org/10.2139/ssrn.4163592.
6- Emissions factor data, e.g.:
Sadler H, 2017, Past and projected future components of electricity supply to the ACT, and resultant emissions intensity
7- ACT Healthy Waterways: Economic Analysis, 29 October 2019

The following conditions were relevant to the impacts presented in this assessment:

- A La Niña weather pattern increased rainfall in the last two years of the reporting period. This impacted the volume of water sold to customers and had subsequent impacts (e.g. revenue and GHG emissions).

What do we need to know?

The economic value of water security has been touched on in past studies (e.g. Canberra Integrated Waterways: Feasibility Study). However, the water security economic benefit of the INRN has not been quantified. This information may be able to be sourced via engagement with Icon Water as they have previously undertaken option studies regarding water security for the ACT.

WELLBEING IMPACT ASSESSMENT

Accountability and evaluation – how will we know this proposal has been successful?

Not applicable

Key relationships

Not applicable

References

- ACT Government (2015). Improving our waterways Sullivans Creek and inner North Reticulation Network.
- ACT Government (2019). ACT Climate Change Strategy 2019-2025.
- ANU (2022). Paper by Adhikary, Ripon Kumar Kumar and Richardson, Alice and STARRS, DANSWELL and Glass, Kathryn and Lal, Aparna, Perception of Water Quality in Urban Ponds is Influenced by Location, Age and Recreational Activities of Users. Available at SSRN: https://ssrn.com/abstract=4163592 or http://dx.doi.org/10.2139/ssrn.4163592.
- Dickson and Lyneham Ponds FSP report (2010).
- E2Design for CRC for Water Sensitive Cities (2020). Investment Framework For Economics of Water Sensitive Cities (INFFEWS). Benefit Cost Analysis Tool: Booklet of applied examples.
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- Independent Competition and Regulatory Commission (2012). Final report Secondary water use in the ACT.
- Office of the Commissioner for Sustainability and the Environment (2012). Report on the State of the watercourses and catchments of Lake Burley Griffin, authored by Robert Neil, Appendix B 'Investigation into the state of Lake Burley Griffin and catchment: economic impact of water quality issues' authored by Ian Lawrence.
- Reserve Bank of Australia (2024). CPI calculator on web site for RBA.

ACT Government
Environment, Planning and Sustainable Development

24/53542

Mr David Pryce
Director-General
Transport Canberra and City Services
By email: david.pryce@act.gov.au

cc : ian.lawrence@act.gov.au
cc : tutu.subeih@act.gov.au

Dear Mr Pryce

Triple Bottom Line Assessment for Inner North Reticulation Network for period 2017-18 to 2021-22

Thank you for submitting the Triple Bottom Line (**TBL**) Assessment for Inner North Reticulation Network (**INRN**) for period 2017-18 to 2021-22. The TBL assessment is accepted as meeting the requirements of condition 5(e) of the Ministerial Exemption from holding a utilities licence for this scheme (DI2019–268). I would like to acknowledge the complexity of the analysis undertaken by Roads ACT and ACT Treasury in the first TBL assessment for this scheme.

I note that the INRN scheme provides a range of quantifiable positive impacts, most notably in relation to improving water quality in urban waterway and social networking, and delivers a positive economic benefit of greater than $0.5 million annually. The information provided in the TBL will be able to be use to inform future decisions about water sensitive urban design, integrated water cycle management and future stormwater harvesting in the ACT.

I further note that the next TBL report for this scheme is required to be provided at the end of the 2027-28 financial year.

Should you wish to discuss this matter further, please do not hesitate to contact Ms Cherie Blackburn, Senior Water Engineer with the Utilities Technical Regulation Team, by phone 6207 8741 or email to cherie.blackburn@act.gov.au.

Yours sincerely
Personal Information

Ben Ponton
Technical Regulator
7 June 2024