

lpswich

# AGENDA

# **ENVIRONMENT AND SUSTAINABILITY COMMITTEE**

Thursday, 9 March 2023 10 minutes after the conclusion of the Economic and Industry Development Committee or such later time as determined by the preceding committee

Council Chambers, Level 8 1 Nicholas Street, Ipswich

## MEMBERS OF THE ENVIRONMENT AND SUSTAINABILITY COMMITTEE

Councillor Russell Milligan (Chairperson)	Mayor Teresa Harding
Councillor Andrew Fechner (Deputy Chairperson)	Deputy Mayor Jacob Madsen
	Councillor Kate Kunzelmann

## **ENVIRONMENT AND SUSTAINABILITY COMMITTEE AGENDA**

Item No.	Item Title	Page No.
	Welcome to Country or Acknowledgment of Country	
	Declarations of Interest	
	Business Outstanding	
	Confirmation of Minutes	
1	Confirmation of Minutes of the Environment and Sustainability Committee No. 2023(01) of 9 February 2023	7
	Officers' Reports	
2	Ti Tree Bioenergy Funding - Annual Program Report 2023	12
3	Enviroplan - Annual Progress Report 2021-2022	24
4	Stormwater Quality Offset Program Annual Report	50
	Notices of Motion	
	Matters Arising	

\*\* Item includes confidential papers

## **ENVIRONMENT AND SUSTAINABILITY COMMITTEE NO. 2**

## 9 MARCH 2023

## AGENDA

## WELCOME TO COUNTRY OR ACKNOWLEDGEMENT OF COUNTRY

## DECLARATIONS OF INTEREST IN MATTERS ON THE AGENDA

## **BUSINESS OUTSTANDING**

## CONFIRMATION OF MINUTES

## 1. <u>CONFIRMATION OF MINUTES OF THE ENVIRONMENT AND SUSTAINABILITY</u> <u>COMMITTEE NO. 2023(01) OF 9 FEBRUARY 2023</u>

## RECOMMENDATION

That the Minutes of the Meeting held on 9 February 2023 be confirmed.

## **OFFICERS' REPORTS**

## 2. <u>TI TREE BIOENERGY FUNDING - ANNUAL PROGRAM REPORT 2023</u>

This is a report concerning Ipswich City Council's role in managing and delivering on revenue collected from the Ti Tree Bioenergy facility. Ipswich City Council looks to manage and expend these funds in such a way as to offset social and environmental impacts from the facility and improve amenity and environmental values for the local community through the provision of community proposed projects.

This report highlights progress to date for current and ongoing projects and proposes the list of projects to be developed upon and delivered in the 2023-2024 financial year and beyond.

#### RECOMMENDATION

That in accordance with the Ti Tree Bioenergy Funding governance arrangements, Council endorse the proposed program of projects for development and delivery in the 2023-2024 financial year.

## 3. ENVIROPLAN - ANNUAL PROGRESS REPORT 2021-2022

This is a report concerning the Enviroplan Program and Levy Progress Report for the 2021-2022 financial year (Attachment 1). Contained within the report is an overview of project delivery, a financial summary including expenditure and revenue and a number of highlights from the past year which include:

- Completion and opening of the new Denmark Hill upgrades and associated activation campaign
- Completion and opening of the Kup Murri and new horse trail heads at Harding paddock in Flinders-Goolman Conservation Estate
  - Heavy rainfall and flooding had major impacts throughout the financial year with many tracks washed out and in need of repair. Restricted access made pest plant and animal control across the Enviroplan estates difficult and limited.
  - Investment into the existing and new Enviroplan reserves specifically a focus on compliance and enforcement through "for the love of nature campaign".

This annual report follows on from the last report for the 2020-2021 fiscal period.

## RECOMMENDATION

That the report concerning the Enviroplan Annual Progress Report 2021-2022, be received and noted.

## 4. <u>STORMWATER QUALITY OFFSET PROGRAM ANNUAL REPORT</u>

This is a report concerning the Stormwater Quality Offset Program status from commencement until June 2022. The Annual Report provides of an overview of the program, an assessment of the financial contributions received, project expenditures and the water quality improvement projects delivered. The report includes proposed future changes to the program to improve delivery and conformity to State guidance. A Stormwater Quality Offset Program web page has also been prepared to improve transparency and ensure the annual report is readily accessible to the community.

#### RECOMMENDATION

That the Ipswich City Council Stormwater Quality Offset Program Annual Report be received and the contents noted.

## NOTICES OF MOTION

## **MATTERS ARISING**

## ENVIRONMENT AND SUSTAINABILITY COMMITTEE NO. 2023(01)

## 9 FEBRUARY 2023

#### MINUTES

<u>COUNCILLORS' ATTENDANCE:</u>	Councillor Russell Milligan (Chairperson); Mayor Teresa Harding, Councillors Andrew Fechner (Deputy Chairperson), Jacob Madsen (Deputy Mayor) and Kate Kunzelmann
COUNCILLOR'S APOLOGIES:	Nil
<u>OFFICERS' ATTENDANCE:</u>	Chief Executive Officer (Sonia Cooper), Acting General Manager Infrastructure and Environment (Graeme Martin), General Manager Community, Cultural and Economic Development (Ben Pole), Emergency Management and Sustainability Manager (Matthew Pinder), Natural Environment and Land Manager (Phil A Smith), Senior Media Officer (Darrell Giles) and Theatre Technician (Harrison Cate)

## WELCOME TO COUNTRY/ACKNOWLEDGEMENT OF COUNTRY

Councillor Russell Milligan (Chairperson) delivered the Acknowledgement of Country.

## ADJOURN MEETING

Moved by Councillor Russell Milligan

That the meeting be adjourned at 12.20 pm to reconvene at 1.00 pm.

AFFIRMATIVE	NEGATIVE
Councillors:	Councillors:
Milligan	Madsen (Abstain)
Fechner	
Kunzelmann	

The motion was put and carried.

The meeting reconvened at 1.00 pm.

Mayor Teresa Harding arrived at the meeting at 1.01pm.

## **DECLARATIONS OF INTEREST IN MATTERS ON THE AGENDA**

Nil

## **BUSINESS OUTSTANDING**

## 1. <u>UPDATE - NOTICE OF MOTION TO REQUEST WHITE ROCK SPRING MOUNTAIN</u> <u>CONSERVATION ESTATE TO BE DEDICATED AS A NATIONAL PARK</u>

This is a report updating Committee on the actions following the Council Ordinary Meeting Thursday 18 November 2021, where Councillor Tully tabled a Notice of Motion seeking dedication of White Rock - Spring Mountain Conservation Estate (WRSMCE) as a National Park.

After actioning the recommendation in discussion with Queensland Parks and Wildlife Services (QPWS), a number of considerations and limitations were identified.

In the same discussions the proposal to look at alternative areas to investigate for a possible National Park within the Ipswich LGA was raised. Whilst this is at a very early stage, it is felt that the benefits to the local and wider community and local environment are worth further investigation.

#### RECOMMENDATION

Moved by Councillor Andrew Fechner: Seconded by Mayor Teresa Harding:

That Council support continued discussion with Queensland Parks and Wildlife Services, Department of Environment and Science around alternative locations, rather than pursue the dedication of White Rock – Spring Mountain Conservation Estate as a National Park.

Councillor Andrew Fechner proposed the following as Recommendation B.

B. That an update be brought to the May 2023 Environment and Sustainability committee.

The seconder of the original motion agreed to the proposed additional recommendation.

#### RECOMMENDATION

Moved by Councillor Andrew Fechner: Seconded by Deputy Mayor Jacob Madsen:

A. That Council support continued discussion with Queensland Parks and Wildlife Services, Department of Environment and Science around alternative locations, rather than pursue the dedication of White Rock – Spring Mountain Conservation Estate as a National Park.

# B. That an update be brought to the May 2023 Environment and Sustainability committee.

AFFIRMATIVE	NEGATIVE
Councillors:	Councillors:
Milligan	Nil
Fechner	
Harding	
Madsen	
Kunzelmann	

The motion was put and carried.

## 2. <u>UPDATE - ENGAGEMENT PLANNING - ABORIGINAL AND TORRES STRAIT ISLANDER</u> ENGAGEMENT GUIDE

At the Council Ordinary Meeting of 16 September 2021 Council considered recommendations to endorse the formation of a Traditional Owner Reference Group (Indigenous Accord Action item 2.1.1) under the proposed terms and structure. The matter was referred back to the Environment and Sustainability Committee for further consideration.

Through further internal and external discussions regarding the recommendation, a preferred approach was presented for Council to develop an Aboriginal and Torres Strait Islander Engagement Guide (Guide) initially. The Guide aims to include guidelines around the engagement of the Ipswich Aboriginal and Torres Strait Islander community, including the appropriate membership structure and topics of consultation for each of the endorsed representative 'Groups' in accordance with the Indigenous Accord 2020-2025.

In doing so Ipswich City Council is acting under the agreed outcomes and action items of the adopted Indigenous Accord, thereby acknowledging the rights, interests and aspirations of the Ipswich Aboriginal and Torres Strait Islander community and, more specifically, the Traditional Owners to improve and formalise the process of engagement and consultation in this space.

#### **RECOMMENDATION**

Moved by Councillor Andrew Fechner: Seconded by Councillor Kate Kunzelmann:

- A. That a draft Aboriginal and Torres Strait Islander Engagement Guide be developed and presented at a future Environment and Sustainability Committee for endorsement, following relevant stakeholder engagement.
- B. That the matter of establishing a Traditional Owners Reference Group, referred to the Environment and Sustainability Committee for further consideration by Council on the 16 September 2021, be considered following the adoption of the Aboriginal and Torres Strait Islander Engagement Guide.

AFFIRMATIVE	NEGATIVE
Councillors:	Councillors:
Milligan	Nil
Fechner	
Harding	
Madsen	
Kunzelmann	

The motion was put and carried.

## **CONFIRMATION OF MINUTES**

## 3. <u>CONFIRMATION OF MINUTES OF THE ENVIRONMENT AND SUSTAINABILITY</u> <u>COMMITTEE NO. 2022(11) OF 29 NOVEMBER 2022</u>

#### RECOMMENDATION

Moved by Councillor Andrew Fechner: Seconded by Mayor Teresa Harding:

That the Minutes of the Environment and Sustainability Committee held on 29 November 2022 be confirmed.

AFFIRMATIVE NEGATIVE Councillors: Councillors: Milligan Nil Fechner Harding Madsen Kunzelmann

The motion was put and carried.

## **OFFICERS' REPORTS**

#### 4. <u>REVIEW OF THE LOCAL DISASTER MANAGEMENT PLAN</u>

This is a report concerning the annual review of the City of Ipswich Local Disaster Management Plan.

#### RECOMMENDATION

Moved by Councillor Kate Kunzelmann: Seconded by Mayor Teresa Harding:

- A. That the updated City of Ipswich Local Disaster Management Plan provided as Attachment 2 be approved.
- B. That the Chief Executive Officer, in consultation with the Mayor, be authorised to make amendments based on feedback from members of the Local Disaster Management Group, who form part of the governance arrangements for adopting this plan.

AFFIRMATIVE	NEGATIVE
Councillors:	Councillors:
Milligan	Nil
Fechner	
Harding	
Madsen	
Kunzelmann	

The motion was put and carried.

#### **NOTICES OF MOTION**

Nil

## MATTERS ARISING

Nil

## PROCEDURAL MOTIONS AND FORMAL MATTERS

The meeting commenced at 12.19 pm.

The meeting closed at 1.08 pm.

Doc ID No: A8622639

ITEM: 2

SUBJECT: TI TREE BIOENERGY FUNDING - ANNUAL PROGRAM REPORT 2023

AUTHOR: NATURAL ENVIRONMENT AND LAND MANAGER

DATE: 31 JANUARY 2023

#### **EXECUTIVE SUMMARY**

This is a report concerning Ipswich City Council's role in managing and delivering on revenue collected from the Ti Tree Bioenergy facility. Ipswich City Council looks to manage and expend these funds in such a way as to offset social and environmental impacts from the facility and improve amenity and environmental values for the local community through the provision of community proposed projects.

This report highlights progress to date for current and ongoing projects and proposes the list of projects to be developed upon and delivered in the 2023-2024 financial year and beyond.

#### **RECOMMENDATION/S**

That in accordance with the Ti Tree Bioenergy Funding governance arrangements, Council endorse the proposed program of projects for development and delivery in the 2023-2024 financial year.

#### **RELATED PARTIES**

Ti Tree Bioenergy

Willowbank Action Group

#### **IFUTURE THEME**

Natural and Sustainable

#### PURPOSE OF REPORT/BACKGROUND

As with previous years the development of the proposed Ti Tree Bioenergy project/program list and ongoing projects has been managed entirely under the governance arrangements approved by Council in February 2021 (Attachment 1). This included public consultation to source proposals for suitable community and environmental projects for delivery via 'Shape your Ipswich' throughout August 2022.

Council received 23 correctly submitted proposals from across the Ipswich Local Government Area including a number from members of Willowbank Area Group (WAG) members. Of these 11 were deemed eligible. The internal Ti Tree working group then considered the submissions for eligibility against the agreed criteria rated in terms of their priority and the final list was then discussed with the Divisional Councillors and community representatives from WAG in line with the recommended governance process.

Through this process the projects listed in Table 2 have been selected to progress and added to the delivery schedule for either feasibility, design, or delivery over the next 2 financial years (2023-2024 and 2024-2025) alongside a number of longer running on going project and programs from previously years.

Table 1. Progress update on recommended projects for 2022-2023 financial year		
Projects	Progress	
Revegetation in Willowbank area (multiple revegetation projects submitted)	Large scale weed removal undertaken and revegetation of native species commenced and under maintenance at George Hatchman and Mack Park. Plantings to enhance/create natural areas and create koala habitat will continue in Mack Family Park, George Hatchman, and the New Payne's Road Koala Reserve.	
Establishment of new parks and conservation areas and or vegetation buffers in line with proposals.	A Council owned reserve previously purchased for water infrastructure on Payne's Road was identified and selected to create and form a new Community and Koala nature Reserve. This site has been confirmed (via Queensland Government Survey) to be home to an existing Koala Population and will be a buffer from future industry. A works Plan and Budget for the next 3 years has been developed. Works have begun on securing the site.	
Continuation of wildlife signage and fauna movement project	Koala/Wildlife warning signs; were located at the approach to the intersection of Wigmore Street & Willowbank Drive & the other at the southern intersection of Willowbank drive & McHales Way. Identification of sites will continue with Transport Planning and the Department of Main Roads to look at fauna crossing infrastructure options.	
Footpath Construction for McHale's Way to Warrens Court. Investigation into other local footpaths.	McHales Way to Warrens Court Footpath completed. Other local options under investigation including those detailed in the upcoming years project listings.	
Wetland and waterway restoration on Bremer River and Warrill Creek.	Works held back due to flood repair, ongoing option analysis of council owned land.	

Partnership with Ipswich Koala Protection Society (IKPS) for potential purchase of property for a Koala Reserve and Koala fodder and investigate the use of local tracking collars.	Support to the value of \$5k provided to IKPS for Koala monitoring apparatus and technology including tracking Cameras. Continued dialog and exploration of options to support the ongoing work of the Ipswich Koala Protection Society in their conservation efforts in and around Collingwood Park and potentially linking in with land in the Ebenezer Willowbank and Purga Koala habitat areas. (DEFERED until 2023) Directional and historical interpretation signage at the summit and possible inclusion of indigenous story related to the immediate area around Mack Family Park.
Outdoor Learning	Continuing investigations and feasibility study into the establishment of a local environmental education facility or hub in existing or new reserve within the areas initially suggesting that the current buildings and facilities are not an appropriate for upgrade and that a new purpose built, and designed facility or building would be better suited and value. Proposed sites include Purga Nature Reserve, Grandchester Conservation Estate _ Awaiting Estate

Table 2. Proposed projects for the 2023-2024 financial year and beyond	
Projects	Comments
Informational Signage (cont.)	Directional and historical interpretation signage at the summit and possible inclusion of indigenous story related to the immediate area around Mack Family Park.
New Community/Koala Nature Reserve at Payne's road (cont.)	Working through program of works including fences tracks and trails weed control and planting opportunities.

Wildlife signage and fauna movement project (cont.)	Specific request to look at additional Kangaroo sign on O'Neil's road. Officers continuing to work with TMR on Fauna movement solutions in this area.
Climate & energy efficiency Amberley Girl Guide and Community Hall	Climate & energy efficiency project - Installation of solar panels and solar battery and Air conditioning. Assessment of most efficient options to commence ASAP and installation next year.
Ebenezer Creek Warrill view Lawn Cemetery wildlife corridor and land rehabilitation	Investigate feasibility and land ownership in and around the area and potential mechanisms noting that there is significant area outside of Council tenure.
Koala Conservation – Plantings Fodder Trees Monitoring and Partnership with IKPS	Exploration of options to support the ongoing work of the Ipswich Koala Protection
Natural trail area with walking and cycling track between O'Neill's road Willowbank along Mount Elliot Mine Road to Ipswich-Rosewood Road Amberley	Potentially a complex project to implement due to the variety of tenures. Action is to investigate feasibility and land ownership in and around the area and potential mechanisms noting that there is significant area outside of Council ownership.

## LEGAL IMPLICATIONS

This report and its recommendations are consistent with the following legislative provisions: *Local Government Act 2009* 

## POLICY IMPLICATIONS

Decisions made in alignment with adopted Ti Tree governance documentation.

## **RISK MANAGEMENT IMPLICATIONS**

The annual nature of the community engagement leads to an influx of one-off project ideas which require careful consideration, planning design and implementation. This often takes more than one year resulting in a back log of projects. There is a potential risk that through this existing method Council is collecting potential projects at a faster rate than they can be implemented (given the below mentioned resource constraints). As such consideration will be given to the suspension of Community consultation for a period whilst the present list of project and programs is delivered.

## FINANCIAL/RESOURCE IMPLICATIONS

Given the assessment criteria and intent of the funding doesn't necessarily align with Councils strategic priorities (specifically on the terms of the eligibility criteria for projects is that it must be 'over and above' or outside any existing planned program) resourcing project delivery is problematic.

In the case of several of the transport projects there was not available resources to support the required investigation, design as strategic priorities are already planned and require immediate resourcing. To this point again consideration should be given to specific Ti Tree project resourcing.

## COMMUNITY AND OTHER CONSULTATION

The community are consulted through the "Shape your Ipswich" website through August 2022 and asked to provide suggestions for relevant projects. The community were also provided with the objectives and intent of the program to guide their submissions.

Many proposed projects were not in line with the intent of the program or fell outside Council's remit, control, or ability.

Those that were eligible, and deliverable were assessed and scored based on the criteria approved in the governance documentation by a cross functional Ti Tree working group committee with representatives from across relevant sections of Council.

Further to the 'Shape your Ipswich' engagement and assessment officers are in contact with the Willowbank community through meetings and correspondence with the Willowbank Area Group (WAG) and the divisional councillors for their feedback on the final list.

The projects and expenditure are published on a half yearly bases on the Ipswich City Council Transparency and Integrity Hub.

#### CONCLUSION

The annual works program for the Ti Tree Bioenergy fund has been assessed and prioritised and is presented in the above tables for consideration by the committee and Council along with a summary of works to date.

#### HUMAN RIGHTS IMPLICATIONS

HUMAN RIGHTS IMPACTS	
OTHER DECISION	
(a) What is the Act/Decision being made?	That in accordance with the Ti Tree Bioenergy Funding governance arrangements, Council endorse the proposed program of projects for development and deliver in the 2023- 2024 financial year

(b) What human rights	No human rights are affected by this decision
are affected?	
(c) How are the human	Not applicable
rights limited?	
(d) Is there a good	Not applicable
reason for limiting	
the relevant rights?	
Is the limitation fair	
and reasonable?	
(e) Conclusion	The decision is consistent with human rights.

## ATTACHMENTS AND CONFIDENTIAL BACKGROUND PAPERS

1.	Council Report 25 Feb 2021 - Ti Tree Bioenergy Payments - Project Development
	Process and Governance Framework 🖳 🎇

# Phil A. Smith NATURAL ENVIRONMENT AND LAND MANAGER

I concur with the recommendations contained in this report.

## Kaye Cavanagh MANAGER, ENVIRONMENT AND SUSTAINABILITY

I concur with the recommendations contained in this report.

# Graeme Martin ACTING GENERAL MANAGER, INFRASTRUCTURE AND ENVIRONMENT

"Together, we proudly enhance the quality of life for our community"

COUNCIL MEETING AGI	25 FEBRUARY ENDA 2021
Doc ID No: A67	753030
ITEM:	15.3
SUBJECT:	TI TREE BIOENERGY PAYMENTS - PROJECT DEVELOPMENT PROCESS AND GOVERNANCE FRAMEWORK
AUTHOR:	NATURAL ENVIRONMENT AND LAND MANAGER
DATE:	28 JANUARY 2021

#### **EXECUTIVE SUMMARY**

This is a report concerning the management and expenditure of the payments received from Ti Tree Bioenergy. Council receives annual payments as per a condition of the development approval. The funds are to be utilised by Council in line with the terms of that condition expressly for the purposes of community and environmental benefit and to offset any impacts from the facility.

This report lists the proposed projects for delivery in 2020-2021 and 2021-2022.

#### RECOMMENDATIONS

- A. That Council endorse the list of prioritised projects for delivery in 2020-2021, using the existing budget of \$120,000 that has been allocated in 2020-2021.
- B. That Council endorse the list of prioritised projects for delivery in 2021-2022, and that a budget allocation of \$320,000 be considered in the operational budget for 2021-2022 to be drawn from the accrued funds of \$1,506,614.

#### **RELATED PARTIES**

There was no declared conflicts of interest related to this report

#### ADVANCE IPSWICH THEME

Caring for the community

#### PURPOSE OF REPORT/BACKGROUND

On 25 February 2020, Council resolved to repeal a number of previous decisions concerning the allocation and distribution of the Ti Tree Bioenergy Payments in preparation for the development of a new relevant governance and management framework focussing on improved reporting processes and transparency

COUNCIL	25 FEBRUARY
MEETING AGENDA	2021

Council further resolved that a governance framework for the management of the Ti Tree Bioenergy Payments be developed to comprise of an Administrative Directive (Attachment 1), a procedure (Attachment 2), and an assessment criteria for proposed community projects (Attachment 3).

An Internal Working Group was established, under an agreed Terms of Reference (Attachment 4), to develop the governance framework in accordance with the intent and specifics of the planning conditions under which the funds are collected. The group has also assessed and prioritised project proposals received from the community or identified internally in terms of the above intent of the funding.

The governance documents were presented to the Executive Leadership Team and subsequently adopted under the appropriate delegations in November 2020.

This report provides a list of projects that have been identified and proposed by the Willowbank Area (Residents) Group Inc. (WAG) or internally based on the criteria. These projects include but are not limited to the following:

- Amberley Girl Guides grounds landscaped / security camera
- Establishment of a new Koala Bush Reserve in the locale
- Asphalt/Bitumen surface and widening of O'Neills Road and installation of barriers
- Wildlife signs on roadways and facilitated movements around the area
- Continuation of footpath from Warren Court to McHales Way
- Ipswich Safe City Camera at O'Neills Road / Amberley Rosewood Road intersection
- Wildlife corridor from Ebenezer Creek to Bremer River to west of Willowbank
- Partnership with Ipswich Koala Foundation purchase of property for a Koala Reserve and Koala fodder and investigate the use of local tracking collars
- Fencing around Mack Family Park and George Hatchman Bush Reserves
- Koala habitat and corridor restoration and enhancement around the Willowbank area private grants/public plantings
- Wetland and waterway restoration including waterway barrier removal on Bremer River and Warrill Creek
- Community amenity infrastructure eg: park benches within the local reserves and parks
- Buffer treatment (e.g. vegetation) around the Ti Tree Waste Facility and associated roads
- Local land acquisition for the establishment of new parks and conservation areas and or vegetation buffers
- Establishment of vegetated corridor or bush care reserve(s) in strategic koala locations
- Community walking and cycling area around O'Neill's Road, Ipswich-Amberley Road and Mt Elliot Mine Road.

The following projects have been prioritised for delivery in 2020-2021, to be funded through the existing allocated budget of \$120,000 (table 1). This is a nominal annual budget drawn from the overall funding pool (detailed below).

COUNCIL	25 FEBRUARY
MEETING AGENDA	2021

Table 1. Recommended projects 2020-2021	
Projects	Discussion
Revegetation in Willowbank area (multiple revegetation projects submitted)	Planting in Mack Park and investigation of other suitable planting sites. Plantings to enhance/create natural areas and create koala habitat.
Wildlife signs on roadways and facilitated movements around the area	Undertake monitoring of koalas and planning in the area and investigate and install appropriate wildlife signage and more broader wildlife movement solutions around the Willowbank/Amberley/Ebenezer Area
Fencing around Mack Family Park & George Hatchman Bush Reserve	Undertake site survey of reserves and installation of appropriate fencing for protection of the reserve and wildlife.

The following projects have been prioritised and proposed for delivery in the 2021-2022 financial year (table 2).

Table 2. Recommended Projects   2021-2022		
Projects	Discussion	
Local land acquisition for the establishment of new parks and conservation areas and or vegetation buffers in line with proposals.	Multiple similar projects have been suggested and revegetation and creation of bush reserve would be a good outcome – multiple benefits scored high on environmental locality criteria	
Continuation of wildlife signage and fauna movement project	Investigate feasibility and options working with the Department of Transport and Main Roads (TMR) around fauna passage solutions e.g. crossing points, fencing. Develop a delivery plan.	
Community amenity infrastructure e.g. park benches picnic tables within the local reserves and parks.	Develop a local plan of sites and potential furniture or options for infrastructure embellishment and delivery	
Feasibility study of community walking and cycling trails around O'Neill's Road, Ipswich-Amberley Road and Mt Elliot Mine Road, including continuation of the footpath from Warren Court to McHales Way	Community walking and cycling trails around O'Neill's Road, Ipswich-Amberley Road and Mt Elliot Mine Road.	
Wetland and waterway restoration on Bremer River and Warrill Creek.	Site identification, rehabilitation planning and planting of suitable sites	

COUNCIL	25 FEBRUARY
MEETING AGENDA	2021
Partnership with Ipswich Koala Protection Society (IKPS) for potential purchase of property for a Koala Reserve and Koala fodder and investigate the use of local tracking collars	Discuss options with IKPS around sites in the locality and data sharing/partnership around local monitoring

#### **LEGAL/POLICY BASIS**

This report and its recommendations are consistent with the following legislative provisions: Local Government Act 2009 Planning and Environment Court Act 2016

#### **RISK MANAGEMENT IMPLICATIONS**

In collecting the funds from Ti Tree, under the terms of the aforementioned conditions, Council enters into an agreement to manage and expend those funds in line with their intended purpose. In not spending these funds or spending them in a manner not aligned with its intent Council is at risk of not meeting the legal requirements of the court order. Furthermore and more broadly the community for which the funding was intended to support are at risk of missing out on an opportunity to offset any potential social or environmental impacts as a result of the Ti Tree Bioenergy facility.

There is potential risk to Council from a probity perspective in issuing payments to a community group, in this instance WAG, outside adopted procurement and community funding policy and legislative guidelines without clear and concise terms and conditions. To mitigate this going forwards Council will seek to enter into a contractual or partnership arrangement with WAG under which they will be asked to provide representative community feedback and input on the proposed projects. Council will work with WAG to ensure this feedback is representative of the broader local community and deals with the impacts of the local facility.

#### FINANCIAL/RESOURCE IMPLICATIONS

Currently, there are accrued funds to the value of \$1,506,614, not including the current pending annual payment. A nominal amount of \$120,000 has been allocated from the accrued funds within the 2020-2021 budget for the delivery of projects as listed in Table 1 above. A budget of \$320,000 is proposed to be allocated from the remaining accrued funds for the delivery of prioritised projects in 2021-2022. This amount may need to be increased depending on future opportunities, such as the acquisition of bushland reserves or koala habitat within the Willowbank / Ebenezer locality.

The administrative process including project management, assessment and reporting will be funded and managed with current staff and existing operational budgets.

The annual payment to WAG (up to \$5,000) will be sourced from consolidated revenue, as it cannot be drawn from the Ti Tree payments under the adopted Administrative Directive and assessment criteria.

COUNCIL	25 FEBRUARY
MEETING AGENDA	2021

An annual financial statement and balance sheet will form part of the progress and program report which will be presented to Council each year. The statement of accounts/balances will be passed to the transparency hub for publication and also provided to Ti Tree at the same interval or more frequently if required.

Future budgets will be determined and proposed as part of the annual project prioritisation process and presented to Council for resolution.

#### COMMUNITY AND OTHER CONSULTATION

An internal working group across the Infrastructure and Environment; Community, Cultural and Economic Development; and Corporate Services Departments has been working on the governance framework prior to and since the Council resolution in February 2020. Consultation with representatives of Ti Tree Bioenergy and the Willowbank Area (Residents) Group Inc. (WAG) has been undertaken on the process and funding balance.

Council is currently developing a digital version of the project identification form (Attachment 5) which will be made available through Shape Your Ipswich. This will provide an avenue for the community to propose projects to be considered in the annual program. These will be compiled and those that meet the criteria will be presented to WAG each year to provide community input.

#### CONCLUSION

A new governance framework to manage the distribution and expenditure of the Ti Tree Bioenergy annual payments has been developed and adopted, and are presented in this report.

A list of prioritised projects for delivery in 2020-2021 and 2021-2022 is presented for Council endorsement. These projects have been assessed and prioritised in accordance with the agreed project assessment criteria.

Details of the funds, progress on projects and the annual works program will be presented to Council by way of a report on an annual basis. **ATTACHMENTS AND CONFIDENTIAL BACKGROUND PAPERS** 

1.	Administrative Directive Ti Tree Bio Energy Payments
2.	Procedure for Ti Tree Bio Energy Payments
3.	Assesment Criteria For Ti Tree Funded Projects
4.	Ti Tree Working Group ToR
5.	Ti Tree Project Identification Form

#### Phil A. Smith

#### NATURAL ENVIRONMENT AND LAND MANAGER

I concur with the recommendations contained in this report.

Kaye Cavanagh MANAGER, ENVIRONMENT AND SUSTAINABILITY

COUNCIL	25 FEBRUARY
MEETING AGENDA	2021

I concur with the recommendations contained in this report.

Sean Madigan

ACTING GENERAL MANAGER - INFRASTRUCTURE AND ENVIRONMENT

"Together, we proudly enhance the quality of life for our community"

Doc ID No: A8665369

ITEM: 3

SUBJECT: ENVIROPLAN - ANNUAL PROGRESS REPORT 2021-2022

AUTHOR: NATURAL ENVIRONMENT AND LAND MANAGER

DATE: 13 FEBRUARY 2023

#### **EXECUTIVE SUMMARY**

This is a report concerning the Enviroplan Program and Levy Progress Report for the 2021-2022 financial year (Attachment 1). Contained within the report is an overview of project delivery, a financial summary including expenditure and revenue and a number of highlights from the past year which include:

- Completion and opening of the new Denmark Hill upgrades and associated activation campaign
- Completion and opening of the Kup Murri and new horse trail heads at Harding paddock in Flinders-Goolman Conservation Estate
- Heavy rainfall and flooding had major impacts throughout the financial year with many tracks washed out and in need of repair. Restricted access made pest plant and animal control across the Enviroplan estates difficult and limited.
- Investment into the existing and new Enviroplan reserves specifically a focus on compliance and enforcement through "for the love of nature campaign".

This annual report follows on from the last report for the 2020-2021 fiscal period.

#### **RECOMMENDATION/S**

That the report concerning the Enviroplan Annual Progress Report 2021-2022, be received and noted.

### **RELATED PARTIES**

Nil

#### **IFUTURE THEME**

Natural and Sustainable

#### PURPOSE OF REPORT/BACKGROUND

The Enviroplan levy continues to be a much supported and vital tool for council and the city of Ipswich in preserving and enhancing the environmental values of the city.

At its inception, Ipswich was one of only a handful of local governments to introduce a levy focused on protecting and enhancing the environment. Since than the community and council have worked together implementing the Enviroplan Program and the many initiatives within it.

In line with best practice and council's commitment to transparency and integrity, as of 2019 Council committed to the annual publication of the Enviroplan Annual Report. As well as this the financial data is provided for publication on the Transparency and Integrity Hub.

Given the importance of understanding the needs, costs, and investment direction of the Enviroplan Levy into the future, this report allows the community to better understand what their Levy is used for. Building this understanding should aid in better dialogue and engagement when it comes to City wide directional decisions around the Environment including working hand in hand with the implementation of the new Natural Environment Strategy endorsed by council earlier this financial year.

As council has grown and matured over the last 25+ years, the strategic focus, priority and needs of the city have changed and the Enviroplan spending has changed with that. Like many other Southeast Queensland Local Governments who followed in the footsteps of the Enviroplan Levy; initial investment focussed on acquisitions of strategically important, high value conservation land parcels. As the portfolio grew it was identified that the need to manage and maintain this land grew with it as did the resourcing required. As such spending shifted to consolidation and connectivity. Following the recent adoption of the new Natural Environment Strategy, expenditure is balanced between opportunistic expansion of the protected areas (council and private) and the embellishment and management of the land Council has responsibility for.

## LEGAL IMPLICATIONS

This report and its recommendations are consistent with the following legislative provisions: *Local Government Act 2009* 

## POLICY IMPLICATIONS

The report and the Enviroplan Levy is managed in line with recently adopted Natural Environment Policy, the Ipswich Enviroplan Policy, and associated Procedures.

## **RISK MANAGEMENT IMPLICATIONS**

Publication of the Enviroplan report presents little or no risk to council. Publication of the financial and annual report aligns with the council's position on transparency and openness and allows for public visibility.

## FINANCIAL/RESOURCE IMPLICATIONS

There are no forward financial or budget implications from receiving or noting this report or the attached document.

## COMMUNITY AND OTHER CONSULTATION

It is proposed that the annual report be published on the Council website and the Transparency and Integrity hub in order to inform the community of where and how the money is invested. This in turn will help guide future engagement regarding future strategy and direction in Ipswich's natural environment.

The direction of the Enviroplan moving forwards is largely set by the Natural Environment Strategy developed and endorsed late last year and complied with extensive community engagement.

#### CONCLUSION

This report presents the annual Enviroplan Program and Levy Progress Report 2021-2022 to council to be received and noted. As well as a summary of the financial details it includes summaries of key programs and projects for the 2021/2022 financial year.

## HUMAN RIGHTS IMPLICATIONS

HUMAN RIGHTS IMPACTS
RECEIVE AND NOTE REPORT

The recommendation states that the report be received, and the contents noted. The decision to receive and note the report does not limit human rights. Therefore, the decision is compatible with human rights.

## ATTACHMENTS AND CONFIDENTIAL BACKGROUND PAPERS

1. Clty of Ipswich Enviroplan Annual Report 2021-2022 🗓 🛣

#### Phil A. Smith

## NATURAL ENVIRONMENT AND LAND MANAGER

I concur with the recommendations contained in this report.

## Kaye Cavanagh MANAGER, ENVIRONMENT AND SUSTAINABILITY

I concur with the recommendations contained in this report.

# Graeme Martin ACTING GENERAL MANAGER, INFRASTRUCTURE AND ENVIRONMENT

"Together, we proudly enhance the quality of life for our community"



CONTENTS	
ENVIROPLAN SNAPSHOT	
INVESTMENT TREND COMPARED TO PREVIOUS YEAR	4
ACQUISITION OF SIGNIFICANT CONSERVATION LAND AND LOAN SERVICING	6
COMMUNITY NATURE CONSERVATION PARTNERSHIPS AND SUPPORT	7
NATURE CONSERVATION PLANNING	11
EMBELLISHMENT, CAPITAL AND OPERATIONAL MANAGEMENT INVESTMENT WITHIN THE NATURAL AREA ESTATE	
2021-2022 FINANCIAL PERFORMANCE STATEMENT	20

## DISCLAIMER

Information contained in this document is based on available information at the time of writing. All figures and diagrams are indicative only and should be referred to as such. While the Ipswich City Council has exercised reasonable care in preparing this document it does not warrant or represent that it is accurate or complete. Council or its officers accept no responsibility for any loss occasioned to any person acting or refraining from acting in reliance upon any material contained in this document.

# ACKNOWLEDGEMENT OF COUNTRY

Ipswich City Council respectfully acknowledges the Traditional Owners as custodians of the land and waters with which we share. We pay our respects to elders past, present and emerging, as the keepers of their traditions, customs, cultures and stories of proud peoples.

Enviro Comp Entrant: A Murray, Gumtree frog pond

## **ENVIROPLAN SNAPSHOT**

The Enviroplan Annual Report provides information on the deliverables and outcomes of the activities undertaken within the Enviroplan Program during 2021-2022 financial year, including the progress on the Levy.

The year saw the opening of Denmark Hill upgrade at Denmark Hill Conservation Reserve and the opening of the Hardings Paddock Hut, Kup Murri and Horse Trail Head at Hardings Paddock in Flinders-Goolman Conservation Estate.

Flooding had major impacts on the Enviroplan estates leading to extended closures and extensive repairs to tracks and trails within the estates.



### Where did the funds go in 2021-2022?



Enviro Comp Entrant: A Sword, Where The Living's Easy



		(') \$13,770
$\mathbf{\Phi}$	Nature conservation planning	(-) \$359,008
1	Embellishment, capital and operational management within the Natural Area Estate	(+) \$914,240

#### **HIGHLIGHT 1**

Adoption of the Natural Environment Policy and the development of the Natural Environment Strategy

## HIGHLIGHT 2 Completion and activation of

Denmark Hill upgrade

#### **HIGHLIGHT 3**

Completion and activation of Hardings Paddock facilities – Hut, Kup murri, \_\_\_\_\_\_\_trailhead

#### **HIGHLIGHT 4**

Flood damage requiring significant investment for repairs to tracks and trails

## YOUR LEVY IN ACTION

Flinders-Goolman Conservation Estate is one of the largest, and most significant conservation areas in Ipswich.

Since 1998 council has progressively acquired parcels of ecologically significant land and consolidated into the Flinders-Goolman Conservation Estate of more than 2,200 hectares.

Looking to the future, council has started detailed work on a Masterplan to guide future investment into Flinders-Goolman Conservation Estate.

It is home to rare and threatened species, such as the Brush-tailed Rock Wallaby and Flinders Plum, but also one of Ipswich's most popular destinations for naturebased recreation. The Masterplan will aim to balance those needs.

During the 2021-2022 financial year there were many actions at Flinders-Goolman Conservation Estate that showcased the Enviroplan levy in action.

The new Hardings Paddock Community Hut was opened to public use, creating new options for nature-based activities. This off-the-grid facility features a wastewater treatment system, solar power, and rainwater tanks. Other features include a kitchen and access for people with disabilities. Improvements also came with the construction of a Kup murri cooking area, new trailhead and landscaping. These new facilities were activated with a Community Open Day in celebration of Reconciliation Week.

The open day offered a rare opportunity to see and smell Kup murri cooking and experience a range of First Nations cultural practices.

The ongoing management of Flinders-Goolman Conservation Estate spanned fire and flood in the 2021-2022 financial year.

Council undertook hazard reduction burns in late 2021 to reduce fuel loads near the Hardings Paddock day use area.

Then from early 2022, storms and flooding led to significant damage, closing the estate for several months. It required significant Enviroplan investment and labour to gradually re-open day use areas and trails to the community.

This important investment was in addition to regular maintenance such as weed control, pest animal control, service trail works and fuel reduction zones.









## ACQUISITION OF SIGNIFICANT CONSERVATION LAND AND LOAN SERVICING

- There were no land acquisitions in 2021-2022
- \$861,028 went towards servicing the loan

There were no new land acquisitions within the past 12 months.

Council continues to investigate acquisition opportunities as they arise, assisting properties against a set of criteria including ecological values.

## COMMUNITY NATURE CONSERVATION PARTNERSHIPS AND SUPPORT

- \$12,909 in Land Management Payments
- \$34,283 of grants provided to the community
- \$6,443 was spent on incentive activities

# RENEWED REGIONAL PARTNERSHIPS

- \$12,724 went towards the regional coordination of SEQ Land for Wildlife
- \$45,550 went towards the Little Liverpool Range Initiative





### NATURE CONSERVATION GRANT HIGHLIGHT NEW LCPP PROGRAM GATHERS MOMENTUM

A new Landholder Conservations Partnership Program rolled out in financial year 2021-2022.

About 50 new landholders registered during this period, which included 60+ site visits for both new and historic partners. During these site visits more than 550 plant species were identified, with about 20 per cent being environmental weed species.

Registration to the new program requires a site visit to assess the property's ecological values, discussion of landholders' conservation priorities, and the collaborative development of a Management Plan.

As part of program incentives, a flood bursary was awarded to successful landholder applicants who were directly affected by the February/March 2022 flood event. The funds supported debris and rubbish removal, remediation of stock exclusion fencing, revegetation, weed management, creek bank reprofiling and bank stabilisation.

On the biodiversity front, officers collected seeds from more than 50 native species to propagate and distribute to landholders through council's Free Plant Program.

A hands-on weed management workshop was held at Hardings Paddock, in Flinders-Goolman Conservation Estate. This assisted landholders to improve their weed identification skills and practical weed management techniques.















## SUPPORTING ECOLOGICAL RESTORATION

By Deborah Metters, re-published from the Land for Wildlife South-East Queensland annual report 2021-2022.

Chris Wiley generously opened his Land for Wildlife property at Pine Mountain to other landholders over two days to talk about the extensive weed control and revegetation that he is undertaking.

Chris has a vision for his property, and he is working tirelessly to achieve it. As an ecologist, he has a detailed understanding of the native plants, wildlife and weeds that are on his property and he is aiming to bring highly degraded ecosystems back to good health.

Supported by Ipswich City Council, Chris is controlling large infestations of the invasive Cat's Claw Creeper weed that had taken over the dry rainforest scrubs. Slowly, native plants are sprouting up where once it was just a carpet of weeds. He has also planted thousands of





native plants, many of which he has propagated himself from seeds collected on his property.

Workshops like these are opportunities for Land for Wildlife members to connect with other landholders who are also doing conservation on their properties. It is a place to share knowledge and skills about weed control, managing wildlife habitats and to see different land management techniques.

Workshop attendees were also treated to seeing 'platelets' – the circular scrapings of the rare Blackbreasted Button-quail that lives in the dry vine scrubs on Chris' property. This is a nationally threatened bird that is only found in South East Queensland. These button-quails have been found scratching around in areas that were once dense weeds, but are now filled with native plants and leaf litter, perfect for these shy birds. Thank you, Chris for restoring these precious ecosystems.







## MEMBERS CONTRIBUTING TO CONSERVATION

The 2021-2022 financial year was a busy time for Little Liverpool Range Initiative (LLRI).

The membership stands at 27 properties, spanning lpswich City Council and Lockyer Valley Regional Council.

Four workshops were held across the year on a range of topics including koala habitat restoration and developing effective fire management plans with the Queensland Fire and Biodiversity Consortium.

The LLRI has a growing focus on citizen science and how members can contribute to conservation, on their properties and across the region.

Members participated in iNaturalist competitions across a 9-month period with a goal to document the most records of a target group each month ranging from amphibians to invertebrates.

The iNaturalist program skyrocketed with 5,157 total observations across the range and a massive 1,493 species documented.

This project was conducted with assistance from the Queensland Government's Citizen Science Grant funding, which supported purchasing resources to upskill our members in species identification and various forms of documentation.





## **EXPERIENCE NATURE**

Regular guided bushwalk activities in Enviroplan estates were dampened by storm and flood damage and COVID lockdowns.

Experience Nature facilitated 10 events, with a total number of 160 participants. This included Moonrise Nightwalks, Nature at Night as part of Kids Go Wild school holiday program, Habitat and History, and Trail of Tree Tales school excursion.

The officer also attended the White Rock Trail Festival, which was a major event with 300 people.

The Experience Nature program has regularly delivered guided walks at White Rock – Spring Mountain Conservation Estate. In June 2022 a Goolman walk, at Flinders-Goolman Conservation Estate, was introduced as a new package.

9




## **CONTINUED CELEBRATIONS MARKED 25 YEARS**

In 2021 Enviroplan celebrated 25 years of conservation achievements in Ipswich.

Throughout the year a number of events and activities were held to mark the occasion. This coordinated awareness campaign encouraged conservation and environmental education and increased awareness of the Enviroplan initiative.

In total (across the 2021 calendar year) the campaign had 333 participants at 8 events, more than 30 media articles published, and reached almost 139,000 people through digital channels.

Key highlights within 2021-2022 financial year included:

### MOUNT GRANDCHESTER EXPERIENCE

Special guided bushwalks were organised for the community to access the Mount Grandchester Conservation Estate, which is normally closed to public access. The walks on 31 July 2021 had 37 attendees and showcased the ongoing work undertaken by Enviroplan including revegetation, weed control and acquisitions.

#### GREAT RESTORATIONS

As a way of celebrating the new Landholder Conservation Partnerships Program a series of workshops were run, also open to the general public. One of the workshops was an open property at Pine Mountain that was halfway through a 10-year restoration project. More than 30 people attended the open property.

#### ENVIROFORUM

The 2021 Enviroforum event was held at Hardings Paddock, in the Flinders-Goolman Conservation Estate. This special outdoor event showcased an Enviroplan-funded estate in celebration of 25 years of Enviroplan. There were 75 attendees at the ticketed event. The speakers and activities had a strong focus on conservation and cultural heritage.











# NATURE CONSERVATION PLANNING

- \$130,992 funded operational expenses such as staff wages, vehicles and equipment necessary to deliver the Enviroplan Program
- The Natural Environment Policy was adopted along with the development of the Natural Environment Strategy which undertook extensive internal and external stakeholder consultation.

## NATURAL ENVIRONMENT POLICY SETS STRATEGIC DIRECTION

A major strategic achievement for council was delivered in September 2021 with the adoption of a Natural Environment Policy.

The policy was identified as a catalyst project in council's Corporate Plan 2021-2026 (iFuture) under the Natural and Sustainable theme.

The policy provides strategic direction for green elements, such as bushland and waterways, which make up the city.

It informs decision-making, investment and natural environment programs including Enviroplan.

Extensive internal and external consultation, research, benchmarking and national strategy review was undertaken in the creation of the policy. This work will be used in future strategy development.

The natural environment is an important topic to the community of Ipswich and council, as demonstrated by the feedback received. The seven policy focus areas directly reflect his consultation feedback.

- Biodiversity and threatened species recovery
- Wetlands and waterways improvement
- Urban biodiversity enhancement
- Natural area restoration and protection
- Experiencing nature
- Community awareness and support
- Governance, measuring and reporting.

It was timely to have an adopted policy position ahead of updating key corporate documents such as the Nature Conservation Strategy (with a Natural Environment Strategy) and the Ipswich Planning Scheme.





Page 38 of 88

# EMBELLISHMENT, CAPITAL AND OPERATIONAL MANAGEMENT INVESTMENT WITHIN THE NATURAL AREA ESTATE

- \$3,414,240 was spent on projects across the Natural Area Estate. Highlights include:
  - \$121,323 on the construction of the Kupmurri at Hardings Paddock
  - \$64,421 on the completion of Denmark Hill
- \$228,574 was spent on maintaining previously installed fuel reduced areas and following up weed treatments and rehabilitation of previous burn blocks
- \$331,800 funded restoration works which included rehabilitation and weed management on habitat for koalas, rock wallabies, black breasted button quails and high value conservation sites
- \$106,943 funded operational expenses for pest animal monitoring and management
- Other highlights such as hazard reduction burns in late 2021.





## ESTATES IMPACTED BY STORM AND FLOOD DAMAGE

One of the greatest challenges that faced Enviroplan estates in financial year 2021/2022 was the severe and ongoing impact of storm and flood damage.

Hardest hit assets were the track and trail network, with erosion and damage to infrastructure leading to Flinders-Goolman and White Rock – Spring Mountain conservation estates being closed from early March.

It was a level of damage never before seen by Natural Areas teams who maintain the Enviroplan conservation estates and reserves.



Anecdotally, the incessant above-average rain from October 2021 onwards led to potholes two metres wide and up to a metre deep in places. Fences and tracks were also washed away and roads became impassable.

Assessing and repairing the damage took many months, with ongoing rain making progress difficult. Materials such as rock, road base and decomposed granite had to be imported for repairs. Much of the work was completed with bobcats and excavators, with some bulldozer work required at Mount Granchester and Flinders-Goolman conservation estates.





## HABITAT PROTECTION THROUGH PEST MANAGEMENT

Over 1,875 hours were spent undertaking pest management in priority habitat areas across the Natural Area Estate.

Access was difficult in some areas due to flooding and associated damage to tracks within the Estates. High rainfall contributed to increased growing conditions which provided additional cover for pest animals therefore proving difficult to find for removal.

Management involved activities such as:

- Deploying, monitoring and retrieving traps and cameras
- Reviewing camera data
- Monitoring trails and tracking pest animal activity
- Maintaining equipment
- Active hunting
- Humane destruction and carcass removal
- Opportunistic pest plant control
- Reporting.

As a result of implementing the program, 15 pest animals were removed along with several areas of pest plants control.



Per cent of total controlled pest animals

Vulpes vulpes (fox)
Pavo cristatus (peacock)
Sus scrofa (pig)
<i>Lepus</i> (hare)
Canis familiaris (wild dog)





## MAJOR UPGRADE BRINGS VISITORS BACK TO DENMARK HILL'S NATURAL BEAUTY

A major visitor upgrade has reactivated a hidden bushland gem in the heart of Ipswich CBD.

Enviroplan funds were invested into visitor facility upgrades at the Denmark Hill Conservation Reserve.

The old degraded infrastructure was demolished and replaced with exciting new facilities that celebrate the forested nature reserve.

Works included a large disability access bridge, naturebased playground, open grass areas, three shade shelters, barbecue, viewing platforms and upgraded lighting and pathways.

The new facilities were activated with a series of events to entice visitors and groups to enjoy the renewed conservation area.

This included guided bushwalks, bird-watching tours with Birds Queensland, Kids Go Wild school holiday activities, citizen science sessions and more.

Denmark Hill is also one of the few Enviroplan estates that allows dogs on leash.

The site has a strong connection to Traditional Owners and part of the extensive construction project had involved creating cultural totem landscape poles.

One of the site's uses was as a high location where Traditional Owners could communicate via smoke signals internally and with others seeking permission to travel through their homelands.





## ESTATE ENFORCEMENT 'FOR THE LOVE OF NATURE'

A new campaign was launched in response to problem behaviours at White Rock – Spring Mountain Conservation Estate.

'For the Love of Nature' was a collaborative effort between council and Queensland Police Service, to provide a proactive and positive on-ground presence at high-visitation areas.

Organised activations provided an opportunity to engage with the public, providing information and awareness about appropriate behaviour in conservation areas, including prohibited activities such as trail bikes and dogs.

It also provided options for reporting antisocial or illegal behaviour, with the ability for enforcement if required. Highlight - 8 patrols during estate closures for hazard reduction burns:

- 407 interactions in total
- 71 people left without entering estate
- 64 verbal and formal warnings issued for breaches of entry and dog offences
- 2 infringements issued.

# Highlight - 6 joint estate enforcement patrols with council and QPS:

- 2 trail bike riders intercepted
- 9 warnings given regarding dogs
- 578 interactions for engagement and education.





# EMBELLISHMENT, CAPITAL AND OPERATIONAL MANAGEMENT INVESTMENT HIGHLIGHTS WITHIN THE NATURAL AREA ESTATE

#### Various sites

- \$37k on signage at the entry to Hardings Paddock, Flinders Plum and White Rock
- \$42k on minor emergent projects across several sites.





Note: some projects are currently in design stage only, and construction not commenced.

#### 1 Denmark Hill Conservation Reserve -\$378k

- \$353k invested on constructing a pedestrian bridge and installing lighting and playground
- \$25k spent on addressing gully erosion.



#### 2 White Rock - Spring Mountain Conservation Estate - \$276k

- \$144k on constructing walking trails
- \$91k on barrier fence installation along the interface with Greenbank Arterial and Wild Iris Terrace
- \$40k on erosion control and track work.



- 3 Flinders-Goolman Conservation Estate - \$612k
  - \$612k spent on constructing the environmental community hut within Hardings Paddock.



# **2021-2022 FINANCIAL PERFORMANCE STATEMENT**

This statement is certified by the Chief Financial Officer (Mr Jeffrey Keech) on the 9 November 2022.

PROJECT/ACTIVITY	ACTUALS
STRATEGIC THEME: ACQUISITION OF SIGNIFICANT NATURE CONSERVATION LAND	
Land Acquisition Program	
Land Acquisition Program Implementation: Assessments and Purchases	\$0
Loan Service for Land Acquisition	\$861,028
Sub-program total	\$861,028
Theme total	\$861,028
STRATEGIC THEME: COMMUNITY NATURE CONSERVATION PARTNERSHIPS AND SUPPORT	
Landholder Conservation Partnerships Program	
Landholder Conservation Partnerships Program Management: Operational expenses	\$0
Voluntary Conservation Agreements Payments: Annual landholder land management payments	\$12,909
Landholder Nature Conservation Grants: On-ground landholder support projects	\$34,283
Voluntary Conservation Agreement Incentives: Education and capacity building activities	\$6,443
Landholder Partnerships Workshops: Education and capacity building activities	\$0
Sub-program total	\$53,635
Community Partnerships Program	
Community Partnerships Program Management: Operational expenses	\$115,431
Community Awareness and Engagement Events: Annual city-wide events	\$25,905
Community Support Grants: On-ground community projects	\$24,513
Community Education Resources: Digital and printed material	\$13,499
Community Support Grants: Building community capacity	\$4,105
SEQ Land For Wildlife Program Partnership: Regional partnership contribution	\$12,724
SEQ Fire and Biodiversity Consortium Partnership: Regional partnership contribution (Payment shown in 2022-2023)	\$0
Citizen Science Program	\$2,965
Sub-program total	\$199,142
Theme total	\$252,777
STRATEGIC THEME: NATURE CONSERVATION PLANNING	
City-wide Nature Conservation Planning Program	
Nature Conservation Planning: Operational expenses	\$130,992
Nature Conservation Planning, Management and Research: Continual improvement projects	\$0
Sub-program total	\$130,992
Threatened and Key Species Recovery Program	
Note: No funds were spent on the Threatened and Key Species Recovery Program due to internal resources directed to the development of the Natural Environment Strategy. Additionally, due to flooding estate were closed and on-ground projects were unable to be undertaken.	\$0
Sub-program total	\$0
Theme total	\$0
Strategic Theme: Embellishment, Capital & Operational Management Investment within Natural Area Estate	
Natural Area Maintenance Program	
Natural Area Maintenance: Operational expenses	\$743,271
Sub-program total	\$743,271
Natural Area Management Program	
Natural Area Management operational expenses	\$205,295
Conservation Works Program: On-ground operational projects	\$331,800
Fire Management Program: On-ground operational projects	\$228,574
Natural Area Capital Investment Program: On-ground capital projects	\$1,693,581
Pest Animal Management Program: Operational expenses	\$106,943
Natural Area Estate Visitor Management	\$88,375
Natural Area Activation Program	\$1,376
Natural Area Estate Enforcement Program	\$15,025
Sub-program total	\$2,670,969
Theme total	\$3,414,240
PROGRAM TOTAL	\$4,659,037
Revenue	\$4,509,334
External Grant Funding for Enviroplan Projects	\$97,891
Adjustment to Reserve (Drawdown)	-\$51,812
Reserve Balance	\$4,519,508





Doc ID No: A8665466

ITEM:

SUBJECT: STORMWATER QUALITY OFFSET PROGRAM ANNUAL REPORT

AUTHOR: WATERWAY IMPROVEMENT OFFICER

DATE: 14 FEBRUARY 2023

4

### **EXECUTIVE SUMMARY**

This is a report concerning the Stormwater Quality Offset Program status from commencement until June 2022. The Annual Report provides of an overview of the program, an assessment of the financial contributions received, project expenditures and the water quality improvement projects delivered. The report includes proposed future changes to the program to improve delivery and conformity to State guidance. A Stormwater Quality Offset Program web page has also been prepared to improve transparency and ensure the annual report is readily accessible to the community.

#### **RECOMMENDATION/S**

# That the Ipswich City Council Stormwater Quality Offset Program Annual Report be received and the contents noted.

#### **RELATED PARTIES**

There are no related party matters nor conflicts of interest associated with this report.

#### **IFUTURE THEME**

Natural and Sustainable

## PURPOSE OF REPORT/BACKGROUND

New urban development in Queensland is required to manage stormwater to meet the water quality requirements of the *State Planning Policy* (SPP). Ipswich is guided by the *Ipswich Planning Scheme Implementation Guideline No 24: Stormwater Management* to minimise impacts of development on water quality and subsequently regional waterway health. Furthermore, the *ICC Stormwater Quality Offset Program Implementation Plan* (completed in 2015 and reviewed in 2020) provides guidance to ensure the delivery of coordinated water quality improvement projects since 2015.

Over the life of the Stormwater Quality Offset Program, Council has received approximately \$22.6M in voluntary contributions accruing obligations to achieve an equivalent pollutant load reduction (i.e. Total Nitrogen, Total Phosphorus and Total Suspended solids) and prevent pollutants from entering Ipswich's waterways. Approximately \$2.7M of voluntary stormwater quality contributions from developers were received within 2021-2022 financial year.

Sixteen major projects have been completed since the Stormwater Quality Offset Program commenced. Projects were selected based on several criteria to ensure best water quality improvement outcomes as well as other environmental and social benefits such as increased biodiversity, flood mitigation and community amenity. Types of projects completed include creek stabilisation, channel naturalisation, constructed wetlands, floodplain re-engagement, bioretention basins, and rural revegetation and cattle exclusion. To date, the constructed water quality projects have reduced sediment loads by approximately 400 tonnes per year and Total Nitrogen loads by about 1 tonne per year.

Council has expensed 44% of the offset revenue received and delivered between 61% and 131% of its water quality improvement obligation. For example, council has delivered 105% of its sediment load and 61% of Total Nitrogen obligations utilising only 44% of the funds received. These results highlight the net water quality benefit of the offset program.

While no new projects were constructed in 2021-2022, several new projects are currently progressing into design and construction phases including bioretention basins, constructed wetlands, Water Smart Street Trees and creek stabilisation works.

The Annual Report identifies several proposed future changes to the Stormwater Quality Offset Program to improve outcomes and conformity to State offset guidance. Future changes to the program relate to adapting to declining supply of offset opportunities, improving maintenance of the projects to ensure water quality improvements are retained, and updating eligibility to offset within Planning Scheme Policies.

A Stormwater Quality Offset Program web page has also been prepared to improve transparency and ensure the annual report is readily accessible to the community.

## LEGAL IMPLICATIONS

This report and its recommendations are consistent with the following legislative provisions: Local Government Act 2009 Ipswich Planning Scheme Implementation Guideline No24 (IG24) ICC Stormwater Quality Offset Program Implementation Plan Ipswich Planning Scheme Table 2.3.1, Planning Scheme Policy 3, Division 3, Part 2— Stormwater Drainage State Planning Policy (SPP)

## POLICY IMPLICATIONS

No related council policies

## **RISK MANAGEMENT IMPLICATIONS**

The projects delivered to date are selected from the investment strategies developed as part of the program's implementation plan completed in 2015 and later reviewed in 2020. A multi criteria assessment was undertaken to help prioritise stormwater offset projects in terms of multiple benefits they provide.

In addition, environment and safety risks are assessed for each project during the design phase (e.g. environmental approvals required).

### FINANCIAL/RESOURCE IMPLICATIONS

Total stormwater water quality offset revenue and expenditure is identified in the annual report. The report shows that 44% of revenue received has been expensed on completed projects.

#### COMMUNITY AND OTHER CONSULTATION

No community and other consultation were conducted for this report. However, it is valid to mention that community consultation is undertaken for all offset projects.

#### CONCLUSION

An update of the Stormwater Quality Offset Program Annual Report has been completed incorporating the financial year 2021-2022 revenue and delivery outcomes.

### HUMAN RIGHTS IMPLICATIONS

HUMAN RIGHTS IMPACTS	
RECEIVE AND NOTE REPORT	

The Recommendation states that the report be received and the contents noted. The decision to receive and note the report does not limit human rights. Therefore, the decision is compatible with human rights.

## ATTACHMENTS AND CONFIDENTIAL BACKGROUND PAPERS

1. Voluntary Stormwater Quality Offset Program: 2021-2022 Annual Report 🗓 🖾

## Ben Longstaff WATERWAY IMPROVEMENT OFFICER

I concur with the recommendations contained in this report.

## Phil A. Smith NATURAL ENVIRONMENT AND LAND MANAGER

I concur with the recommendations contained in this report.

# Graeme Martin ACTING GENERAL MANAGER, INFRASTRUCTURE AND ENVIRONMENT

"Together, we proudly enhance the quality of life for our community"

# City of Ipswich Voluntary Stormwater Quality Offset Program

Annual Report 2021-2022



# CONTENTS

XECUTIVE SUMMARY	3
INTRODUCTION	.4
. HOW THE STORMWATER QUALITY OFFSETS PROGRAM WORKS	5
. STORMWATER QUALITY OFFSET PROGRAM STATUS	6
. FUTURE DIRECTION	15
. CONCLUSION	17
. REFERENCES	17
PPENDIX	18



## **EXECUTIVE SUMMARY**

In 2012 Ipswich City Council (ICC) embarked on a pioneering scheme to deliver coordinated water quality improvements in lieu of developers delivering on-site treatment.

This voluntary scheme has become commonly known as the Stormwater Quality Offset Program.

ICC introduced the program to address underlying challenges with managing developer contributed stormwater treatment facilities (typically bioretention basins), as well as a proliferation of small-scale stormwater treatment devices.

The offset program conforms to various guidelines and implementation plans that direct aspects of the program such as eligibility, cost to developers, required water quality improvements and how ICC undertakes projects to meet the required water quality improvements.

In general ICC is making excellent progress in meeting its water quality offset liabilities, especially in relation to the amount of funds used. Utilising only 44 per cent of the total offset funds received, council has been able to achieve between 61 per cent and 131 per cent of its water quality improvement obligations (see Figure below).

The greatest water quality improvement has been achieved for Total Suspended Solids (105 per cent) loads and Gross Pollutants (131 per cent). The efficiency of the program can be attributed to selecting projects with relatively low cost in relation to the water quality improvements achieved, as well as council's success in leveraging additional funds towards the projects.



Progress toward meeting ICC water quality offset obligations

In alignment with program's vision, the types of projects undertaken to date are diverse and include creek stabilisation, channel naturalisation, constructed wetlands, floodplain re-engagement, bioretention basins, and rural revegetation and cattle exclusion.

These projects are not only selected for their capacity to treat stormwater and improve water quality, but also the additional environmental and social benefits they provide, such as urban greening, increased biodiversity, carbon capture and flood mitigation.

Pursuing a spread of project types has also been an intentional tactic to not only spread risk but to try and learn and investigate where the best gains and most efficient investments can be made.

In this regard this program is under continual review as part of an adaptive management approach and this report and the data within it is an important part of that feedback loop.

It should also be acknowledged that the Small Creek Channel Naturalisation project, funded by the offset program, has won numerous awards in recognition of its achievements and sets the standard for other channel naturalisation projects across the region.

Notwithstanding these successes, there are some ongoing challenges which the program is adapting to.

These include a pending shortfall in larger cost-efficient project locations to deliver future projects and an effective and funded maintenance program to ensure the water quality improvements gained through the capital investment are retained.

# **1. INTRODUCTION**

The State Government has mandated, through the State Planning Policy (SPP), that development above certain thresholds achieve load-based pollutant reduction objectives for stormwater quality.

The SPP also provides the opportunity for local governments to adopt locally appropriate alternative solutions, such as voluntary offsets schemes, whereby council takes on the responsibility to reduce pollutant loads that would otherwise be achieved onsite by developers in exchange for an equivalent cash contribution.

To facilitate a pathway for such innovative solutions, the Ipswich Planning Scheme Implementation Guideline No. 24 (IG24) (Ipswich City Council, 2016) establishes 'Voluntary Stormwater Quality Offset Payments' as an alternative to site-based treatment.

While there are many reasons for establishing a stormwater quality offset program, the two primary drivers for ICC included:

a) Minimising the proliferation of small-scale stormwater treatment facilities on infill development sites. These privately owned treatment facilities are very difficult and costly for ICC to ensure that they remain functional (e.g. effectively maintained).

b) Addressing an issue of poorly designed and constructed stormwater treatment assets which, once inherited from developers, councils were ill-equipped to manage.

In order to address these management issues, ICC developed a program that enabled a coordinated approach to the management of stormwater quality via a voluntary contribution scheme, more commonly referred to the Stormwater Quality Offset Program (though it should be noted that this voluntary mechanisms differs in significant ways from other legislated 'offsets' such as those in place under state and local planning scheme for Koala habitat or Matters of Environmental Significance).

Implemented strategically, an offsets program, such as the Stormwater Quality Offset Program, can deliver a net benefit to the environment.

In the case of water quality offsets, the ecological assets in question are the City's waterways that are highly susceptible to changes in hydrology, hydraulic conditions, and sediment and nutrient loads.

The potential net benefit in water quality (compared to developer-led projects) is the result of two factors.

Firstly, the offset program can maximise water quality improvements through a greater variety of projects, types and locations.

Secondly, the offset program can leverage additional funds to increase the scope or size of a project that would otherwise not have been feasible.

In addition to water quality improvements, strategically implemented offset projects can achieve a broad variety of additional benefits that may not otherwise have been achieved through developer led stormwater quality management.

These additional benefits can include but are not limited to public amenity and aesthetics, urban greening, increased biodiversity, carbon capture, flood mitigation and broader waterway health benefits beyond water guality.



Pollard Park Channel Naturalisation (November 2022)

Inherent in any type of environmental offset program however are trade-offs: the sacrifice of one ecological asset to deliver a benefit elsewhere.

A robust offsets program must take account of key guiding principles established under a number of offsets policies and guidelines.

Specifically, offsets must ensure environmental equivalence, taking account of spatial separation and temporal lags, and be designed to minimise them.

While the ICC Stormwater Quality Offset Program has been successful in delivering a net environmental benefit since it started, there is an ongoing need to review the program and adapt to ensure a continued improvement.

Internal and external review of the program has identified a few key areas that need to be addressed, including a looming shortfall in cost effective projects for ICC to meet its offset obligations, maintenance challenges and improvements to the eligibility criteria.

A recommended requirement of the offset delivery program is to produce an annual report in order to ensure and maintain an open and transparent process.

This report summarises the financial contributions made to ICC, the water quality liabilities the council inherits with the financial contribution and the progress made in fulfilling the inherited liability.

Finally, this report provides insight into the proposed future direction of the program.

# 2. HOW THE STORMWATER QUALITY OFFSET PROGRAM WORKS

Broadly speaking, a water quality offset program involves improving water quality in one location to offset deterioration of water quality at another location due to development activity.

For the ICC Stormwater Quality Offset Program this involves developers making a voluntary financial contribution to council, which then utilises the revenue to fund projects that achieve an equivalent or greater improvement to water quality within the Local Government Area (LGA).

The council has prepared Implementation Guidelines under the Planning Scheme (Ipswich City Council, 2016 – under review) to

ensure a standard approach to how and when a voluntary offset payment can be made by a developer.

Similarly, Implementation Plans have been prepared for council to follow to ensure that the best possible outcomes are achieved when delivering offset projects (BMT WBM, 2015; E2DesignLab, 2020).

Based on requirements of the State Planning Policy (SPP), the water quality parameters of concern in the offset program are Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorus (TP) and Gross Pollutants (GP).

Figure 1 summarises how the offset program works.



Figure 1: Overview of how the Stormwater Quality Offsets Program works

# **3. STORMWATER QUALITY OFFSETS PROGRAM STATUS**

#### 3.1 Summary

Council has expensed 44 per cent of the offset revenue received (Table 1) and delivered between 61 per cent and 131 per cent of its water quality improvement obligation, with the specific water quality achievement differing between parameters/pollutant types (Table 2).

For example, council has delivered 105 per cent of its TSS and 61 per cent of TN reduction obligations, utilising only 44 per cent of the funds received.

These results highlight the net water quality benefit of the offset program.

The following section provides more detail into financial contributions received, the water quality liabilities associated with the financial contribution and the projects that have been undertaken to address the liability.

 Table 1: Stormwater Quality Offset Program overall financial status at the end of 2021/2022 financial year

	Funds (,000)
Total Revenue	\$22,693
Total Funds Expensed*	\$9,962
Balance Remaining	\$12,731
Percentage of Funds Spent	44%

Table 2: Progress toward meeting water quality offset obligation

	Pollutant Type (kg/yr)				
	TSS	ТР	TN	GP	
<b>Total Liabilities</b>		568	1,927		
	389,409			57,142	
Total Credit		541	1,180		
Achieved*	409,489			74,839	
Outstanding	-20,080	28	747	-	
Liabilities				17,697	
Percentage of	105%	95%	61%	131%	
Target Met					

\*Credits are for constructed projects only

#### 3.2 Financial contributions and water quality liabilities

The voluntary stormwater quality offsets scheme has been very popular with developers, leading to council collecting in excess of \$22.6M since December 2014/15.

For each dollar contributed, the council incurs a water quality liability for each parameter specified in the SPP which must be offset at another location.

That is, council must reduce the amount of pollutants (TSS, TP, TN & GP) entering Ipswich's waterways by the liable amount (or more).

Between 2014/15 and 2021/22 council has acquired a liability to prevent over 389,000kg/yr of TSS and 1,900kg/yr of TN from entering lpswich's waterways with the revenue received (Table 3).

Financial Year	Contributions	Water Quality Liability (kg/yr)			
		TSS	ТР	TN	GP
2014/2015	\$1,791,188	34,606	51	171	5,078
2015/2016	\$3,171,563	58,357	85	289	8,563
2016/2017	\$3,114,792	57,312	84	284	8,410
2017/2018	\$2,136,638	37,105	54	184	5,445
2018/2019	\$3,613,826	60,713	89	300	8,909
2019/2020	\$3,092,772	50,318	73	249	7,384
2020/2021	\$3,000,790	47,815	70	237	7,016
2021/2022	\$2,771,634	43,184	63	214	6,337
Total	\$22.693.201	389,409	568	1.927	57.142

 Table 3: Voluntary contributions made and total water quality liabilities to date

To assist in long-term program planning, a projection of offset demand to 2025/26 has been completed.

The projection is based on the forecasted growth in new housing units, assuming a 50 per cent uptake of offsets within the eligible area.

The forecast was first completed in 2015, and updated in 2020 (see BMT WBM, 2015 & E2Design Lab, 2020).

Overall, the demand for the Stormwater Quality Offsets Program has been consistent with the forecasted demand, as seen in Figure 2.



Figure 2: Forecasted versus actual revenue

Two key observations from the forecasted versus actual revenue data presented in Figure 2 include:

- a) In the first 5 financial years of the program (excluding 2017/18), actual revenue was greater than the forecasted revenue by between approximately \$0.1M and \$1.2M.
- b) In 2025/26 the total cumulative revenue is forecasted to be approximately \$35M. However, if the past difference between forecast and actual revenues continues the actual revenue could be over \$37M.

#### 3.3 Water quality improvements and project expenses

#### 3.3.1 Stormwater Quality Offset Projects

In order to meet council's water quality liability, sixteen stormwater quality offset projects have been constructed over twelve different locations (two locations have multiple stages) as shown in Figure 3.

A diverse range of stormwater treatment methods and project types have been utilised to prevent pollutants entering lpswich's waterways. These treatment methods and project types include creek stabilisation, channel naturalisation, constructed wetlands, floodplain reengagement, bioretention basins, and rural revegetation and cattle exclusion.

Projects are selected based on several criteria to ensure best outcomes including, not only the required water quality improvements, but other environmental and social benefits such as increased biodiversity and education and awareness.

The key benefits the sixteen projects provide have been summarised in Table 4, however there are many other benefits these projects offer to council, the community and the environment. Moreover, Appendix B provides a summary of each project, as well as further project details.



Figure 3: Constructed stormwater quality offset projects location and treatment method/project type

Table 4: Key benefits of various project types and stormwater quality offsets projects

Project Type	Location of Completed Projects	Key Project Benefits
Creek Stabilisation &/or Channel Naturalisation	<ul> <li>Ironpot Creek</li> <li>Pollard Park</li> <li>Small Creek</li> </ul>	<ul> <li>Water quality improvement (removes TSS, TN, TP and GP from stormwater &amp; prevents pollutants from being released into local waterways)</li> <li>Increased biodiversity &amp; habitat improvement</li> <li>Carbon capture</li> <li>Infrastructure &amp; property protection</li> </ul>
Bioretention Basins/Systems	<ul> <li>Fail Park</li> <li>Bob Titcombe Park</li> <li>Sarah Drive Park</li> <li>Wallaby Ware Park</li> </ul>	<ul> <li>Water quality improvement (removes TSS, TN, TP and GP from stormwater)</li> <li>Increased biodiversity &amp; habitat improvement</li> <li>Flood storage</li> <li>Community liveability improvement</li> </ul>
Water Smart Street Trees	• Pine Mountain	<ul> <li>Water quality improvement (removes TSS, TN, TP and GP from stormwater)</li> <li>Street beautification</li> <li>Community liveability improvement</li> <li>Urban cooling &amp; improved air quality</li> <li>Reduced reliance on drinking water supplies</li> </ul>
Rural Revegetation & Cattle Exclusion	Franklin Vale Creek	<ul> <li>Water quality improvement (prevents TSS, TN, TP and GP from being released into local waterways)</li> <li>Increased biodiversity &amp; habitat improvement</li> <li>Carbon capture</li> </ul>
Floodplain Re-Engagement	Moodai Reserve	<ul> <li>Water quality improvement (removes TSS, TN, TP and GP from stormwater)</li> <li>Flood storage &amp; reduction</li> <li>Infrastructure and property protection</li> <li>Increased biodiversity &amp; habitat improvement</li> </ul>
Constructed Wetlands & Stormwater Harvesting	<ul> <li>Jim Donald Parklands</li> <li>Redbank Plains Recreation Reserve</li> </ul>	<ul> <li>Water quality improvement (removes TSS, TN, TP and GP from stormwater)</li> <li>Flood storage &amp; reduction</li> <li>Reduced reliance on drinking water supplies</li> <li>Increased biodiversity &amp; habitat improvement</li> </ul>

#### 3.3.2 Water quality improvements delivered

#### 3.3.2.1 Project pollutant reductions

The sixteen water quality improvement projects delivered through the Stormwater Quality Offset Program have effectively reduced pollutant loads entering Ipswich's waterways.

Table 5 outlines the pollutant reduction achievements per project, also known as water quality improvements, that have been attained through the program.

To date these projects have reduced TSS and TN loads by an estimated 409,489kg/yr and 1,180kg/yr, respectively, thus improving water quality in Ipswich's waterways.

The potential water quality improvements that a project can deliver vary greatly and depend on the stormwater treatment method or project type utilised (e.g. bioretention facility vs channel naturalisation), the scale of the project and the size of the associated catchment.

For example, Table 5 shows that the Small Creek Channel Naturalisation project achieved an estimated 131,932kg annual reduction in TSS, while the bioretention facility at Wallaby Ware Park achieved an estimated 3,466kg annual reduction in TSS load.

Table 5: Water quality improvements achieved for completed project

Project	Catchment	Water Quality Improvement (kg/yr)			
		TSS	ТР	TN	GP
Bob Titcombe Park Bioretention Basin	Mihi Creek	6,570	9	36	1,120
Fail Park Bioretention System	Bundamba Creek	3,860	6	21	791
Franklin Vale Creek Catchment Initiative	Bremer River	63,477	110	97	-
Ironpot Creek Stabilisation	Ironpot Creek	88,770	7	36	-
Jim Donald Parklands Constructed Wetland	Bundamba Creek	51,000	79	139	9,540
Moodai Reserve Floodplain Re-engagement	Woogaroo Creek	10,003	12	27	898
Pollard Park Channel Naturalisation & Filtration	Sandy Creek	33,100	48	81	9,148
Basins	(Camira)				
Redbank Plains Recreation Reserve Wetland	Goodna Creek	8,470	23	139	3,890
Sarah Drive Park Bioretention Basin	Bremer River	6,570	11	40	1,070
Small Creek Channel Naturalisation	Deebing Creek	131,932	228	538	47,615
Wallaby Ware Park Bioretention Basin	Ironpot Creek	3,466	5	19	614
Water Smart Street Trees - Biopod Refurbishment	Ironpot Creek	2,270	3	7	153
	Total	409,489	541	1,180	74,839

Using the assumptions proposed in the Implementation Plan (BMT WBM, 2015), rural revegetation and cattle exclusion is a highly costeffective method of achieving the water quality objectives and can have broader beneficial outcomes in terms of overall waterway health.

In saying this, limited data exists that can quantify revegetation in terms of the direct improvement to water quality. As such, environmental equivalence with a high level of confidence is difficult to demonstrate.

Additionally, this approach especially when delivered in upstream rural areas, can have a large spatial separation from offset sites and a temporal lag of up to twenty years whilst the vegetation matures sufficiently for the full benefit in pollutant reductions to be realised.

To account for the temporal lag, the total offset credits achieved at the project's maturity (assumed to be at 20yrs) are prorated equally over this time period. As such, the water quality improvements for the Franklin Vale Creek Project in Table 5 represent only a fraction (~20%) of the final estimated water quality improvement estimate.

When considering the uncertainty associated with rural revegetation, the validity of the use of this method in the program should be regularly reviewed in relation to ongoing and developing research and data in this field.

Notwithstanding, the wider benefits for waterway health are clear and are very high relative to the cost required to undertake these works.

Therefore, to manage the inherit uncertainty and risk associated with these projects, the program sparingly relies on rural revegetation and instead delivers a diverse range of best management practice projects.

Further to this, an uncertainty ratio of 1:1.5 has also been applied to the calculated pollutant reduction values for rural revegetation works, in-line with best practice offsetting procedures, accounting for the spatial separation and inherit uncertainty.

#### 3.3.2.2 Catchment pollutant reductions

In order to adequately reflect on the success of the program and understand environmental equivalence, spatial separation must be considered.

That is, the location of where the liability was originally generated (the development site) in relation to where the offset water quality improvements were achieved (offset project site).

Achieving spatial equivalence is also identified as best practice in the State Guidance (SPP guidance, 2021), affirming "the location of the off-site solution should benefit the same receiving waters that the development impacts".

ICC aims to deliver projects as close to the source as possible (i.e. within the same creek catchment), but also recognises this may not always be feasible, or that there may be a temporal separation when delivering projects leading to a temporary water quality improvement surplus or liability.

To date, the sixteen water quality improvement projects have been constructed in eight catchments within the Ipswich LGA.

On a per catchment basis, an analysis of the net position of Stormwater Quality Offset Program has been undertaken by comparing the pollutant reductions achieved in each catchment to the catchment's total liability.

Figures 4 and 5 present the results of this analysis, indicating the catchments in surplus as well as those which still hold water quality liabilities. Where the water quality improvement achieved is greater than the liability, the catchment is shown in a surplus position.

Alternatively, where the achieved pollutant reductions are less than the inherited liability, the catchment is shown in a deficit position. To complement this analysis, the water quality improvements achieved within each catchment have also been specified in Appendix C.







Figure 5: TN and TP catchment surplus and liability

The figures show that, to date, both Deebing Creek and Ironpot Creek have a significant surplus in TSS as a result of the large-scale channel naturalisation (Small Creek Channel Naturalisation) and creek stabilisation (Ironpot Creek Stabilisation) projects that have been undertaken in these catchments.

Conversely, many catchments also display a net deficit for all water quality parameters (TSS, TP and TN). For example, currently no projects have been completed in Six Mile Creek, despite ICC having received offset payments within this catchment. This analysis highlights spatially, where offset impacts are greatest and where delivery sites should be located so that this spatial separation can be most effectively accounted for.

Additionally, while projects have not been undertaken in the Brisbane River catchment per se it should be acknowledged that all the rivers and creeks flow into Brisbane River. As such, the Brisbane River is ultimately receiving water quality improvements through projects that are delivered in upstream catchments.

#### 3.3.3 Project expenditure

The total cumulative expenditure for constructed projects as of June 2022 was in order of \$12.7M, of which the Stormwater Quality Offsets Program contributed approximately \$9.9M while non-offset funding (e.g. grants, ICC sub-programs) contributed the remaining \$2.8M. This equates to more than 77 per cent of the total project cost being funded by voluntary stormwater quality offset contributions.

The cost of individual projects varies substantially depending on the scale and complexity of the project, with some projects costing as little as \$135,000 (Water Smart Street Trees) and others costing significantly more at over \$7M (Small Creek Naturalisation) (Figure 6). Although there is a large difference in costs between projects, all projects are assessed to ensure they are cost effective with regards to providing the required water quality improvement.



Figure 6: Total expenses for each of the constructed stormwater quality offsets projects (Note: Unallocated funds refers to cost associated with completing the 2020 Implementation Plan update

The proportion of offset revenue to non-offset revenue applied to each project ranged between 4 per cent and 100 per cent. For example, the Stormwater Quality Offset Scheme funded 4 per cent, 77 per cent and 100 per cent of the Moodai Reserve, Small Creek and Pollard Park projects, respectively. Since the additional funds applied were from non-offsetting sources, all the pollutant reductions (TSS, TP, TN and GP) achieved by the projects were credited towards ICC's offset liability.

Figure 7 shows a breakdown of cost based on stormwater treatment method or project type. It indicates that more than 60 per cent of expenditures have been allocated to channel naturalisation projects. It also shows that funds have been expended relatively evenly between biorientation basins and constructed wetlands, which are relatively common and typical stormwater treatment devices in South-East Queensland (SEQ).



Figure 7: Expenditures according to primary project type

#### 3.4 Project cost-benefit assessment

Analysis of project cost in relation to the water quality improvements gained helps ensure the program continues to implement the most cost-effective solutions and adapt as necessary.

While cost-benefit analysis is based on water quality improvements gained, as is the objective of the Stormwater Quality Offsets Program, the importance of a project providing multiple additional social, environment and economic co-benefits should not be undervalued. As such, these co-benefits should continue to play an important role in project selection.

The cost-benefit assessment of constructed water quality improvement projects, presented in Figure 8, show a wide range of cost efficiencies that vary between project types and the water quality parameters.

- For TSS, the cost-benefit ranged from \$5 to \$82 per kg of TSS removed, with the Ironpot Creek project being the most cost effective and the Sarah Drive Bioretention Basin being the least cost effective.
- For TN, the cost-benefit ranged from approximately \$2,600 to \$18,900 per kg of TN removed, with the Redbank Plains Recreation Reserve Wetland project being the most cost effective and the Water Smart Street Tree project being the least cost effective.

It is important to note that the cost of implementing new types of projects, such as the Water Smart Street Trees, is often higher due to inherent inefficiencies of piloting new methods. Therefore, the cost of such projects is expected to decline as they are further integrated into standard practice.









#### Figure 8: Cost-benefit analysis of completed projects

Note: This analysis only considers the water quality benefits achieved and does not consider multiple additional social, environmental and economic co-benefits.

# **4. FUTURE DIRECTION**

#### 4.1 A continuing role for a stormwater quality offset program

While the Stormwater Quality Offset Program faces some challenges, the many benefits it provides are a good justification for solving these challenges and securing the program for the long-term.

The benefits provided include a net improvement in water quality and the many aforementioned co-benefits such as flood mitigation, increased biodiversity, habitat creation and community amenity, all of which would not be achieved to the same extent if the alternative of developer contributed bioretention facilities occurred.

It should also be noted that much of the offset liability is created from smaller, infill development which, without the alternative of offsetting, would result in a significant number of small privately owned treatment facilities across the city.

It would be very difficult to ensure these small, dispersed facilities, located on private lands, were being adequately maintained to ensure continued functionality and pollutant reduction.

A regulatory framework for maintaining the voluntary offset program is clearly identified within the State Planning Policy (SPP, 2017) and Supplementary Implementation Guidance (2021), stating "At the post-construction phase, development... (b) achieves an alternative locally appropriate solution off-site that achieves an equivalent or improved water quality outcome to the relevant stormwater management design objectives" (SPP, 2017) and "If a developer opts for an off-site solution and the relevant Local Government agrees, then the Local Government collects an 'in-lieu fee' which must be used to develop stormwater solutions off-site" (SPP guidance, 2021).

Based on the opportunity presented within the SPP, Council is looking to retain the voluntary program in the long-term while also ensuring: (i) changes are made to improve conformity to State guideline; (ii) full cost-recovery is attained; and (iii) efficient delivery and effective outcomes continue to be achieved.

#### 4.2 Adapting to a declining supply of cost-effective project opportunities

As already noted, council is achieving a high level of project efficiency, accomplishing between 61 per cent and 131 per cent of its water quality improvement obligations while utilising only 44 per cent of the total offset funds received.

However, the number of sites remaining where cost effective projects can be undertaken are becoming scarcer. Council recognises that the long-term viability of the program is at risk due to the scarcity of cost-effective offset sites, necessitating changes to how the program is delivered and how developer contributions are calculated. In response to these challenges, council has/is taking the following actions:

- Completed a second Implementation Plan that undertook a detailed assessment of potential offset project opportunities (see E2Designlab, 2020). While this plan identified over forty opportunities, the practicality and feasibility of project delivery in many sites is in question triggering the need for a more detailed feasibility analysis.
- 2. Completed a detailed feasibility assessment of the offset project opportunities proposed by the E2Designlab (2020) study. Analysis of the forty plus potential projects identified that many of the proposed sites were not feasible when specific site constraints, such as the land contamination, slope, susceptibility to flooding and presence of existing infrastructure, were considered. That being said, approximately fourteen opportunities have been identified, including constructed wetlands, ephemeral wetlands, daylighting pipes, channel naturalisation and bioretention facilities. Based on this assessment, projects for at least the next 5 to 7 years have been identified.
- Transitioning offset opportunities from the current approach of centralised/endof-line facilities (e.g. bioretention facilities and constructed wetlands) to decentralised/at-source opportunities that can be readily integrated into the existing urban areas. For example, the water smart street tree project has



Water Smart Street Tree: An example of how multiple small-scale projects can treat stormwater within urban areas.

demonstrated how multiple small-scale facilities (i.e. water smart street trees) in an existing residential area can provide cost effective water quality improvement without the need for large open spaces. Continued success of the program will be reliant on adapting to a broader suite of cost-effective Water Sensitive Urban Design (WSUD) techniques, such as bioswales and infiltration trenches, while also ensuring the program supports broader ICC strategic outcomes and does not leave a legacy of high maintenance costs.

4. Reviewing, and if necessary, increasing the developer contribution payment value. In addition to considering the future increase in water quality improvement project costs, the review needs to evaluate other additional costs currently incurred but not included in the current payments value. These may include program administration costs, inflation, land purchase, delivery and equivalence ratios and project maintenance costs.

#### 4.3 Maintenance – ensuring water quality improvements are lasting

The water quality improvements gained from the stormwater quality offset projects (see Table 5) assume the water quality assets will be adequately maintained in order to perform, as designed and built, into perpetuity. It is therefore imperative, that all delivered water quality assets are routinely inspected and maintained.

While ICC has an active inspection, maintenance and rehabilitation program, the capacity of the program to ensure adequate upkeep of the facilities is limited.

This is especially evident when considering the total number of existing ICC stormwater quality assets, as well as the continuous dedication of new assets to council from development and the Stormwater Quality Offsets Program.

ICC continues to improve the maintenance process and build towards a more mature assets systems management approach to plan and budget for both offset projects and developer contributed assets.

Without a change in the current commitment to the inspection and maintenance of the stormwater quality assets, the water quality benefits gained from these projects will be lost and the capital investment in these facilities wasted.



Testing infiltration rates at Fail Park Bioretention System

#### 4.4 Increasing certainty of project performance

Broader discussion within the SEQ stormwater community, also supported council observation, has identified the need for improved understanding of the performance of water quality improvement projects, like those delivered in this offset program.

These observations underline the need for a performance monitoring program, whereby monitored sediment and nutrient removal efficiencies for all water quality improvement project types can be compared to literature values that underpin water quality modelling calculations.

Increased certainty of water quality modelling will: (a) help ensure equivalency in offset liability and credits; and (b) help ensure costeffective solutions are implemented.

The case for undertaking performance monitoring is reinforced by the pursual of diverse decentralised stormwater management solutions.

#### 4.5 Changes to Stormwater Quality Offset Policy in the new Planning Scheme

Council is preparing a new planning scheme, Ipswich Plan 2024, that will replace the current Ipswich Planning Scheme 2006. This new Planning Scheme provides an opportunity to review and update Stormwater Quality Offset Policies.

While still in development, ICC is seeking to ensure the program improves its consistency with the State Guidance (SPP guidance, 2021). For example, ICC is assessing whether eligibility to offset water quality can only occur in instances where Council can clearly demonstrate, through an offset delivery plan, the specific projects it would complete to meet the water quality improvement obligation it would inherit.

The offset delivery plan would have to demonstrate how the project would achieve spatial and temporal equivalency with the developments water quality improvement requirements.

# **5. CONCLUSION**

The Stormwater Quality Offsets Program has achieved a high level of efficiency of pollutant removal per dollar spent to date, highlighting the potential of such a program to deliver additional benefits.

The sixteen constructed projects, either completely or partially funded by stormwater quality offsets, have collectively contributed toward achieving ICC's pollutant reduction obligations, achieving at worst a 61 per cent reduction in total liabilities accrued through the scheme.

However, some liabilities are yet to be met, and with increasing difficulty projected to achieve environmental equivalence cost effectively, council is actively looking to adapt program delivery and is recommending changes to the eligibility criteria.

The program has enabled a holistic view of stormwater and waterway management, delivering multiple benefits to council and the community that transcend water quality outcomes.

The high calibre of council projects has been recognized through numerous awards and commendations from industry bodies including Stormwater Queensland, the Australian Institute of Landscape Architects, the River Basin Management Society, Healthy Land and Water and the Minister's Urban Design Awards.

The Stormwater Quality Offsets Program is at a level of maturity that makes it appropriate and necessary to progressively undertake improvements and optimise the program moving forwards.

The program review and subsequent feasibility assessment is a huge first step towards the continuation of excellent delivery, whilst acknowledging the finite number of cost-effective delivery sites requires shift in strategy.

Whilst some challenges have been identified, these can be overcome to continue to effectively discharge the obligations accrued under the program in a responsible manner.

# **6. REFERENCES**

BMT WBM (2015), Ipswich City Council Stormwater Quality Offsets Implementation Plan

E2Designlab (2020), Ipswich City Council Stormwater Quality Offsets Implementation Plan

Ipswich City Council (2016), Implementation Guide No. 24: Stormwater Management

SPP Guidance (2021), State Planning Policy State Interest Water Quality 2017 Supplementary Implementation Guidance, Department of Environment and Science, February 2021



# APPENDIX A: OFFSET ELIGIBILITY MAP


## **APPENDIX B: PROJECT SUMMARIES**

Please see the following pages for summaries of existing ICC Stormwater Quality Offsets projects

- Ironpot Creek Stabilisation Stages 0 & 1
- Wallaby Ware Park, Brassall
- Pollard Park Channel Naturalisation & Filtration Basins
- Small Creek Channel Naturalisation Stages 1, 2 & 3
- Jim Donald Parkland Constructed Wetland
- Redbank Plains Recreation Reserve Wetland
- Fail Park Bioretention System
- Bob Titcombe Park Bioretention Basin
- Sarah Drive Park Bioretention Basin
- Moodai Reserve Floodplain Re-engagement
- Water Smart Street Trees Biopod Refurbishment
- Franklin Vale Creek Catchment Initiative



## Ironpot Creek Stabilisation – Stages 0 & 1

Location: Walter Zimmerman Park, Pine Mountain

Catchment: Ironpot Creek

Works: Construction of rock chute to stabilise a rapidly eroding head cut.

Project Partners: Alluvium Consulting (Stage 0), Australian Wetland Consulting Pty Ltd (Stage 1)

#### Pollutants reductions:

- TSS 88,770kg/yr
- TN 36kg/yr
- TP 8kg/yr

#### Site Context:

Ironpot Creek is a rapidly eroding waterway in the Bremer River Catchment.

The upper catchment has experienced severe degradation in the years since development in the early 1990's. Some of this disturbance may have been instigated off the back of clearing and the construction of the original Brisbane Valley railway line, however a commencement date has been difficult to determine.

Despite retaining a high level of vegetative cover, once the topsoil horizons were disturbed, flows have been able to come into contact with the dispersive sub soils, instigating the process of rapid waterway incision and instability.

Following urban development around the waterway increases in runoff volume and concentration of runoff instigated a second wave of erosion. This rapid erosion is now threatening properties and is requiring stabilisation.

#### Project Details:

Alluvium Consulting were commissioned to assist Council to determine a stabilisation strategy that worked with natural processes to provide improved stability of the waterway, which was threatening properties and providing a major sediment source to the downstream waterways.

The project developed a strategy to reduce the grade of overly steepened sections of the waterway through construction of key bed control structures.

These structures were designed to reduce the stream power and erosion potential behind the structure, while managing increased velocities over a hardened portion of the waterway.

This approach will ultimately result in bed raising, decreasing susceptibility of head cut, bed incision and increasing instability of the waterway.

A Hec-Ras model was developed including key structures and erosion potential both pre and post intervention were determined. The difference between the two represented the pollutant abatement achieved through the works.

Large vertical unstable banks have been proposed to be battered back to a stable 1:3 grade.

Soil samples were taken to determine the fine particle (suspended) fraction of sediment (ie TSS) and the amount of TN and TP in the soil sample. This allowed a calculation of pollution abatement following the works.



Ironpot Creek Stages 0 and 1, stabilising actively eroding gullies



## Wallaby Ware Park Bioretention Basin

#### Location: Wallaby Ware Park, Brassall

#### Catchment: Ironpot Creek

Treatment type: Construction of vegetated channel and stormwater bioretention basin

Project Partners: Engeny Water Management

#### Pollutant reductions:

- TSS 3,466kg/yr
- TN 19kg/yr
- TP 5kg/yr

#### Site Context:

Ironpot Creek is a tributary of the Bremer River. Its upper reaches are severely eroded, while the lower reaches have suffered channel incision with subsequent instability problems.

An open channel flowed through Wallaby Ware Park that was overly steep and subject to consistent erosion.

#### Project Details:

The channel grade was reduced whilst the capacity increased to a 1% AEP event.

A bioretention basin was constructed inclusive of a saturated zone with temporarily elevated water level. This is intended to provide moisture to the root zones in dry weather periods.

Post establishment, the permanent water level can be reduced to a lower permanent pool depth to eliminate any concerns relating to nutrient leaching, whilst still providing moisture to the root zone via wicking.

#### Lessons learned:

Pinning jute mat in filter media with is problematic when underlain by thick sugar cane mulch. This causes the matting and mulch to lift during rain events, and smothers tube stock when waters recede. The resulting loss of vegetation set the system back about 12 months.



Headwall and channel prior to works being undertaken



Channel and filtration basin 12 months post work completion



# Pollard Park Channel Naturalisation & Filtration Basins

Location: Pollard Park, Camira

**Catchment:** Sandy Creek (Upper Brisbane River)

Treatment Type: Channel naturalisation & filtration basins

Project Partners: Alluvium Consulting

#### Pollutants Removed:

- TSS 33,100kg/yr
- TN 81kg/yr
- TP 48kg/yr

#### Site Context:

An overland flow path in Pollard Park had an extensive history of erosion and rectification by Council maintenance crews. The soils are sandy, and a large head cut is prone to forming.

In addition to conveying a 120Ha external catchment, a number of local stormwater pipes enter the park.

#### Project Details:

Stormwater filtration basins have been constructed using the low nutrient in-situ sandy soils. These have been modelled as bioretention basins in MUSIC using low hydraulic conductivity values that accord with soil testing undertaken.

The channel has been re-constructed to a reduced grade with additional capacity, incorporating additional aquatic macrophytes and trees, rock pool and riffle sequences.

These assist to reduce the stream power in the waterway below a critical level above which erosion is likely to be a feature of the waterway.



Erosion problems prevalent in Pollard Park pre-works contributing to elevated sediment and nutrient exports from the site



Pollard Park post channel naturalisation works completion



## Small Creek Channel Naturalisation – Stages 1, 2 & 3

#### Location: Briggs Road, Raceview

Catchment: Deebing Creek

#### Treatment Type: Channel naturalisation

Project Partners: Bligh Tanner, Landscapology, Streamology, The Landscape Construction Company, Alluvium

#### **Pollutants Removed:**

- TSS 131,932kg/yr
- TN 538kg/yr
- TP 228kg/yr

#### Site Context:

Small Creek was once a meandering stream characterised by a chain of ponds.

It was modified in the early 1980's to be straightened and concreted, to improve the efficiency of the channel and move water quickly out of the waterway corridor.

This also eliminated valuable ecosystem services in terms of water filtration, air cleansing and ambient air temperature reduction.

#### **Project Details:**

Through the offsets program, Council had a unique opportunity to naturalise Small Creek, turning from a concrete channel back into a living waterway.

The project promotes groundwater recharge, recreates habitat for both terrestrial and aquatic fauna and flora and improves water quality.

Importantly it has represented the desires of the community and provided opportunities to improve amenity and engage the community in the waterway.

The project was undertaken in three stages, resulting in over 1.2km of channel being naturalised between Warwick Road and Poplar Street Park.

The meandering naturalised creek comprises low flow channels, riffles, some larger ponds and rock chute grade control structures. Over 198,00 plants we installed throughout the project.

Sustainability was a major theme of the project and visitors to the new-look Small Creek can see the clever way sections of the concrete channel have been broken up and repurposed in place of rock to eliminate the need for the old channel to be sent to landfill.

Wildlife continues to move back into the waterway, with a variety of water birds, water bugs and fish being sighted.



Small Creek pre-naturalisation



#### **Project Learnings:**

The conceptualisation of Small Creek involved a unique co-design process, inviting the community and other stakeholders to have a say in how Small Creek would look, on site at Poplar St Park, Raceview.

It generated ideas and aspirations, concerns and realities of maintaining the new creek. It bundled concept design and consultation into a seamless process that improved efficiency, provided transparency, was robust and rapid.

The process was cheaper and faster than a conventional concept design process and engaged the community in the project from early in the project.

Additional stakeholders such as teachers and students of Bremer State High School and Traditional Owners were also engaged in the project.

#### Awards:

- Winner National Landscape Award for Land Management, Australian Institute of Landscape Architects
- Winner Excellence in Strategic or Master Planning, Stormwater Queensland
- Winner Queensland State Award of Excellence for Land Management, Australian
   Institute of Landscape Architects
- Finalists Government Stewardship, Healthy Land and Water Awards
- Finalist River Basin Management Society Involving Community in Waterway
  Management
- Commendation Minister's Urban Design Awards



Downstream reach of Small Creek soon after completion



Downstream reach of Small Creek after plants established (November 2022)



## Jim Donald Parkland Constructed Wetland

Location: 22 Madden St, Silkstone

Catchment: Bundamba Creek

Treatment Type: Constructed wetland and stormwater harvesting

Project Partners: Engeny Water Management

#### Pollutants Removed:

- TSS 51,000 kg/yr
- TN 139 kg/yr
- TP 79 kg/yr

#### Site Context:

Jim Donald Park contains two overland flow paths draining the suburbs of Eastern Heights and Newtown.

The flowpaths are boggy and weed riddled with a consistent baseflow. A mixed commercial, residential, parkland and sporting field development has occurred adjacent to the site.

#### **Project Details:**

A constructed wetland has been designed and built to treat stormwater from the contributing catchment.

The wetland is offline from the major flow path, to protect it from high flows and sediment.

In addition to the treatment functionality provided by the constructed wetland, a solar harvesting installation has been provided to irrigate the new playing fields, reducing Council's demand on potable water, diversifying supply in times of drought and enhancing amenity and wildlife habitat for the parkland.

The wetland was a first stage of a larger master plan for the parkland.

#### Lessons Learned:

Planting density should be higher in the channel and around the wetland periphery to improve shading and suppress weed growth. Shade trees should be provided closer to the permanent pool level.

Building phase development needs to be closely managed to ensure compliance with sediment and erosion control measures.

#### Awards:

• Winner – Excellence in Integrated Stormwater Design, Stormwater Queensland



Jim Donald Parkland wetland



## Redbank Plains Recreation Reserve Wetland

Location: Redbank Plains Recreation Reserve – 100 Cedar Road Redbank Plains

#### Catchment: Goodna Creek

Treatment Type: Constructed Wetland and stormwater harvesting

Project Partners: BMT WBM

#### **Pollutants Removed:**

- TSS 8,470 kg/yr
- TN 139 kg/yr
- TP 23 kg/yr

#### Site Context:

The Redbank Plains Recreation Reserve sits within the suburb of Redbank Plains, a developing catchment with a lot of infill medium density development occurring.

It adjoins (and treats) the newly expanded Redbank Plains Road and shopping centre.

#### Project Details:

This integrated project was constructed in conjunction with the widening and duplication of the Redbank Plains Road project.

It includes detention functionality to reduce flooding in the local area in addition to containing a constructed wetland for water quality treatment prior to harvesting stormwater for irrigation of the sports fields.

The harvesting pump is powered by solar energy and reduces Council's demand on potable water whilst enhancing amenity and wildlife habitat for the parkland.

#### Lessons Learned:

This project was able to achieve a very high efficiency per dollar spent owing to coupling it with a major infrastructure project, which allowed economies of scale to be achieved.

Birds have proved to be a challenge over the site, reducing the vegetation cover. An appropriate bird management regime is yet to be discovered.

#### Awards:

 Highly Commended – Excellence in Stormwater Infrastructure, Stormwater Queensland



Redbank Plains Wetland and detention basin



## Fail Park Bioretention System

Location: Fail Park – 60 Gledson Street, North Booval

Catchment: Bundamba Creek catchment

Treatment Type: Bioretention Basin

Project Partners: E2Design Lab, AWL

#### Pollutants Removed:

- TSS 3,860 kg/yr
- TN 21.1 kg/yr
- TP 5.5 kg/yr

#### Site Context:

The Fail Park sits within the suburb of North Booval, located downstream of an existing 750mm diameter pipe and headwall.

The fully developed external catchment is 6 hectares and comprised of medium to low density residential land use.

#### Project Details:

This project was constructed as a water quality improvement system providing a suite of benefits for the greater community as well as the area's receiving environments and waterways.

It provides water quality treatment of the connected residential catchment prior to discharging into the receiving environment.

The system integrates with the existing park landscape through the extension of riparian planting which respond to existing topography.

It provides a large and diverse landscape feature incorporating vegetated swales, bioretention basins, rock chutes and overflow control weirs.



Fail Park site in 2020



Fail Park Bioretention Basin Project – October 2022



## Bob Titcombe Park Bioretention Basin

Location: 28 A Glenelg Drive, Brassall

Catchment: Mihi Creek catchment

Treatment Type: Bioretention Basin

Project Partners: E2DesignLab and AWL

#### Pollutants Removed:

- TSS 6,570 kg/yr
- TN 35.8 kg/yr
- TP 9.46 kg/yr

#### Site Context:

The project site is located downstream of an existing grated stormwater structure with 3x750mm diameter pipes and headwall.

The existing channel was unstable due to upstream urbanisation.

The fully developed external catchment is 8.5 hectares and comprised medium to low density residential land use.

#### Project Details:

This project was constructed as a water quality improvement system providing a suite of benefits for the greater community as well as the area's receiving environments and waterways.

An objective of this project is to restore some of the connectivity by reinstating a vegetated channel including addressing existing scour points to protect the stormwater treatment asset and existing vegetation.

The system includes an inlet pond, offline bioretention, minor channel reprofiling and scour remediation downstream from the proposed bioretention system.



Bob Titcombe Park, Brassall – 2020



Bob Titcombe Park Bioretention Basin – December 2022



## Sarah Drive Park Bioretention Basin

Location: Sarah Drive Park, Yamanto

Catchment: Bremer River

Treatment Type: Bioretention Basin

Project Partners: E2DesignLab and AWL

#### Pollutants Removed:

- TSS 6,570 kg/yr
- TN 40.3 kg/yr
- TP 10.8 kg/yr

#### Site Context:

The Sarah Drive Park is located on the corner of Sarah Drive and Jacaranda Drive in Yamanto.

The adjoining catchment is stable and is classified as low-density residential use.

The existing drainage channel was highly modified and densely vegetated with Typha and eventually discharges to the Bremer river.

#### Project Details:

This was project constructed as a water quality improvement system providing a suite of benefits for the greater community as well as the area's receiving environments and waterways.

The design for this park has been an opportunity to enhance the amenity of the park through native vegetation and nature-based passive education.

The system includes an inlet pond to capture sediment and deliver flows evenly to the bioretention system.



Sarah Drive Park Bioretention Basin during final stages of construction



Sarah Drive Park Bioretention Basin - post construction (December 2022)



# Moodai Reserve Floodplain Reengagement

Location: Moodai Reserve – 269 Jones Road, Bellbird Park

Catchment: Woogaroo Creek catchment

Treatment Type: Floodplain Re-engagement

Project Partners: E2DesignLab, AWL

#### Pollutants Removed:

- TSS 10,003 kg/yr
- TN 27. kg/yr
- TP 11.7 kg/yr

#### Site Context:

The project site is an existing Melaleuca forest with an area of approximately 5000m2.

The site is an undeveloped reserve and is bound by Jones Road to the North-West, and a trafficable maintenance track to the remaining perimeter.

The Melaleuca forest was once a natural floodplain/ephemeral wetland whose water sources were cut off when the area was developed and the channel and maintenance track formalised.

Without this water source the health of the vegetation was slowly declining and habitat disappearing.

An external catchment of approximately 98.6 hectares drains through the site via two open vegetated channels.

The majority of the catchment is developed with a range of low-medium density housing and open space.

#### Project Details:

This project was constructed as a water quality improvement system providing a suite of benefits for the greater community as well as the area's receiving environments and waterways.

The completed works included four rock weirs and a rock spillway within the existing drainage channel, and excavation to reduce the height of the existing maintenance track.

These works re-introduced stormwater into the existing Melaleuca forest (i.e. re-engaged the existing floodplain/wetland) where it will be slowed and filtered through natural processes that once occurred, improving water quality in the catchment.



Reconstructed weir at Moodai Reserve – December 2022



Moodai Reserve showing re-engaged floodplain - December 2022



## Water Smart Street Trees – Biopod Refurbishment

Location: Pine Mountain – Shilou Court, Chestnut Drive, Josette Place and Senna Close

Catchment: Ironpot Creek

Treatment Type: Water Smart Street Trees (36 biopods)

Project Partners: Australia Wetlands Landscapes

#### **Pollutants Removed:**

- TSS 2,268 kg/yr
- TN 7.67 kg/yr
- TP 3 kg/yr

#### Site Context:

Water Smart Street Trees are an innovative way of using stormwater to nourish street trees while also improving water quality.

The system works by diverting stormwater runoff from the kerb into biopods, where the water filters to the root zone.

The initiative has multiple benefits, from reducing water usage through to removing pollutant loads from our waterways.

#### **Project Details:**

The project consisted of rectifying 36 abandoned biopopds and planting them with a variety of native tree species including *Eleocarpus reticulatus* (Blueberry Ash), *Buckinghamia celsissima* (Ivory Curl), *Alectryon coriaceus* (Beach Bird's Eye) and *Tristaniopsis laurina* 'Lucious' (Water Gum) with *Ficinia nodosa* as the groundcover.

A condition assessment was conducted prior to the planting stage to ensure the existing filter media and stormwater infiltration could still provide the required stormwater treatment function.

The residents immediately impacted by these works were notified face to face and provided a factsheet regarding the benefits.



Water Smart Street Tree in June 2021 soon after planting (left).

Water Smart Street Tree capturing water after rain event in May 2022 (right)



# Franklin Vale Creek Catchment Initiative

#### Location: Franklin Vale Creek

Catchment: Bremer River

Works: Revegetation, cattle exclusion fencing, creek stabilisation

Project Partners: Landholders, Australian River Institute

#### Pollutants reductions (In reporting year):

- TSS 63,477 kg/yr
- TN 97 kg/yr
- TP 110 kg/yr

(Note: Total project reduction is prorated over 20-year period, values report here represent approximately 20 per cent of estimated final pollutant abatement)

#### Site Context:

Franklin Vale Creek flows into Western creek at Calvert before flowing into the Bremer River south of Rosewood.

A history of clearing in the catchment has left parts of Franklin Vale Creek and the waterways that feed into it with instability and bank erosion that impact on water quality and the values of the creek itself.

This in turn negatively impacts the productivity of graziers that depend on the creek for watering livestock and to the wildlife that depend on these productive lands.

#### **Project Details:**

The Franklin Vale Initiative is a bold ambition to restore waterway health and catchment productivity.

ICC is partnering with landholders living on Franklin Vale Creek to restore and improve the catchment condition by reducing instability and improving water quality through actions such as revegetation, cattle exclusion fencing and bank stabilisation.

This initiative offers landholders the opportunity to restore the waterways on their property and ultimately improve the overall health of Franklin Vale Creek.

Two stages of work how now been completed with over 32ha of land being revegetated.

Council is making a substantial investment in building a legacy of best practice land management where the productivity of the land is maintained for landholders, the community and the environment.





Franklin Vale Creek



## **APPENDIX C: SUPPLEMENTARY TABLES**

Table C 1: Water quality improvements achieved within each catchment

Catchment	Water Quality Improvement (kg/yr)			
	TSS	ТР	TN	GP
Black Snake Creek	-	-	-	-
Bremer River	70,047	121	138	1,070
Brisbane River	-	-	-	-
Bundamba Creek	54,860	85	160	10,331
Deebing Creek	131,932	228	538	47,615
Goodna Creek	8,470	23	139	3,890
Ironpot Creek	94,506	16	61	767
Mihi Creek	6,570	9	36	1,120
Sandy Creek (Camira)	33,100	48	81	9,148
Six Mile Creek	-	-	-	-
Woogaroo Creek	10,003	12	27	898
Total	409,489	541	1,180	74,839

