

BUNDAMBA CREEK CORRIDOR PLAN

Document Register

Project: Bundamba Creek Corridor Plan

Report Title: Bundamba Creek Corridor Plan Report

Client Reference: Ipswich City Council (ICC)

Revision / Version: V8

Author(s): E2Designlab: Kim Markwell, Peter Breen, Malcolm Eadie
Lat27: Andrew Neighbour

Project Contributors: REALM Studios: Jon Shinkfield
Sustainability Queensland: Adrian Volders, Trevor Lloyd

Approved by: Peter Breen

Date: June 2015

Distribution: Electronic Copies to:
Grant Sorensen
Kaye Cavanagh

Revision	Date	Approved	Details of Revision
Draft V1	30/04/2014	Malcolm Eadie	For client review
Draft V2	14/05/2014		For client review
Draft V3			Internal draft
Draft V4	07/08/2014	Malcolm Eadie	For client review
Draft V5	16/01/2015	Peter Breen	For client review
Draft V6	09/02/2015	Peter Breen	For client review
Draft V7	20/02/2015	Peter Breen	For stakeholder review
Final	25/06/2015	Peter Breen	Final report

This document has been prepared solely for the benefit of Ipswich City Council (ICC) and is issued in confidence for the purposes only for which it is supplied. Unauthorised use of this document in any form whatsoever is prohibited. No liability is accepted by e2designlab or any employee, contractor, or sub-consultant of this company with respect to its use by any other person. This disclaimer shall apply notwithstanding that the document may be made available to other persons.

This disclaimer shall apply to Ipswich City Council, its assigns, its employees, its partners and agents. The Information contained in this high-level conceptual document has not been verified by Council, and Council does not represent, warrant or guarantee the accuracy, correctness and completeness of the Information. Council does not accept or assume any responsibility or liability, direct or consequential, for the Information or the reader's reliance upon the Information. The reader of the Information should take such steps as the reader may deem necessary to verify the Information prior to placing any reliance upon the information. Any Information may be withdrawn or altered at any time without notice or obligation to the reader. (Information includes words, pictures, photographs, or other graphical representations.)

Contents

Section 1.0	1.0 Background	6
	1.1 Introduction	6
	1.2 Corridor Context	6
	1.3 Document Structure	7
	1.4 Document Purpose	8
	1.4.1 About the Plan	
	1.4.2 How to Use the Plan	
	1.4.3 Associated Documents	
	1.5 Plan Making Process	10
	1.5.1 Stakeholder Engagement	
Section 2.0	2.0 Vision	12
	2.1 Vision and Objectives	13
Section 3.0	3.0 Corridor Assessment	14
	3.1 Understanding the Corridor	14
	3.2 Sub-Corridor Areas	14
	3.3 Corridor Plan Principles	15
	3.3.1 Thematic Layers and Principles	
	3.3 Synthesis of Opportunities	28
	3.3.1 Lower corridor	
	3.3.2 Middle corridor	
	3.3.3 Upper corridor	
Section 4.0	4.0 The Corridor Plan	32
	4.1 Corridor Plan	34
	4.2 Corridor Plan Detailed Areas	38
	4.3 Corridor Plan Illustrative Sections	46
Section 5.0	5.0 Implementation and Delivery Plan	56

Executive Summary

Project Overview

The Bundamba Creek Corridor (the corridor) originates in the Logan City Council Local Government Area (LGA) and flows north to the Bremer River through rural, industrial and established urban suburbs of Ipswich City Council. It provides multiple functions including important cultural and recreational connections, vegetation and habitat, waterway connectivity and water quality.

Major development is planned within this corridor which will occur over the next 20-30 years. This development is different to other master planned areas as it involves many different developers. On its current trajectory, the Bundamba Creek Corridor faces many challenges. It is therefore critical that a common single vision is used to guide planning, development and delivery across the corridor to ensure that the common vision is achieved.

Work has already been undertaken for the development of the catchment including development of multiple network and development plans (such as pedestrian and cycle networks, waterways and open space). Through this project, Council has layered these plans (including existing approved development applications) for the first time to build an integrated picture of the corridor which has identified areas of competing outcomes and also opportunity. This corridor plan is needed to identify and mitigate competing outcomes within the corridor that occur from development and expansion of the city's infrastructure to meet the growing communities needs. To assist council in the preventative planning and management of these competing outcomes, necessary actions have been identified to accommodate and prepare for the extensive development planned within this corridor.

This report presents the common vision for the catchment which was developed by a range of stakeholders. A summary of the corridor assessment is then presented and future actions are identified in a corridor plan.

Vision

A common vision was developed through a collaborative planning process, bringing together the community, developers, industry and government to identify the key objectives for the corridor transformation.

The vision developed by the collective stakeholders group is that:

“Bundamba Creek and its catchment is cherished and embraced for its cultural, community & natural values”

The key objectives for the corridor were developed to support this vision:

- + Working as one
- + Embracing the environment
- + We all benefit
- + Making it happen

Corridor Assessment

An assessment of the current condition and planned future for the corridor was undertaken and an understanding of the opportunities and constraints was developed. A site visit, workshops and review of planning and technical reports were undertaken to understand both the key existing attributes of the corridor as well as the pressures and competing outcomes facing the future corridor condition that need to be managed.

This assessment identified six key 'thematic layers' which require consideration:

- + Cultural Connections
- + Land Use
- + Vegetation
- + Flooding and Drainage
- + Waterway Health
- + Open Space and Recreation

This corridor assessment also identified three different 'sub-corridor areas' which have different priorities:

SUB-CORRIDOR AREA	LAND USE	CORRIDOR CONDITION	DIRECTIONAL FOCUS
Lower Corridor	Predominately older urban neighbourhoods with some light industry.	Highly modified. Culturally important sites (such as the Evelyn-Dodds Cultural Reserve) are located within this area.	The focus for this area is enhance the community connections into and along the corridor.
Middle Corridor	Includes the main development areas for the Ripley Valley (including the town centre) and industrial land uses.	Mixed condition with some areas having reasonable riparian vegetation, remnant wetlands and channel condition.	The focus for this area is integration of water management with the open space corridor to provide multi-functional spaces.
Upper Corridor	Predominately rural and conservation land (including Daly's Lagoon) with some new urban development.	Poor riparian and waterway condition.	The focus for this area is revegetation of the floodplain for biodiversity, flooding benefits, wetlands, recreation, scenic amenity and green space values.

Table 1. Sub-Corridor Areas

Corridor Plan

The Plan addresses the range of complex issues facing the corridor development and provides a single vision for its transformation. This is a new type of document for Council which will help inform planning and development decisions across the corridor to ensure a common vision can be delivered.

A range of actions have been identified which targets areas requiring further investigation of potential competing outcomes and opportunities to deliver the corridor vision. These actions include specific investigations and works to be undertaken to within the three key areas across the corridor. A list of other actions which are recommended to be delivered across the corridor are also provided and include a range of small to large scale projects.

Implementation

Implementation of this Corridor Plan will require partnership and further investigations. The Plan provides strategic guidance and identifies a range of small scale to large scale interventions which can be delivered across the corridor to drive and support its transformation.

An action list is provided (refer Section 5), highlighting which project objectives are delivered, the scale of the project and the stakeholders involved. This table can be used by Council to identify and prioritise key actions to take forward as a priority. To support this prioritisation, it is recommended that a cost / benefit assessment be undertaken to identify the likely costs, value of the benefits and also to identify where there might be discrepancy between who pays and who benefits. This future work can be used to help negotiations between the many different stakeholders required to achieve the successful transformation of the Bundamba Creek Corridor.

To monitor and evaluate the implementation of the Corridor Plan, this document should be used as a reference document throughout the development of the corridor to ensure that all works undertaken help to deliver the common vision and project objectives.

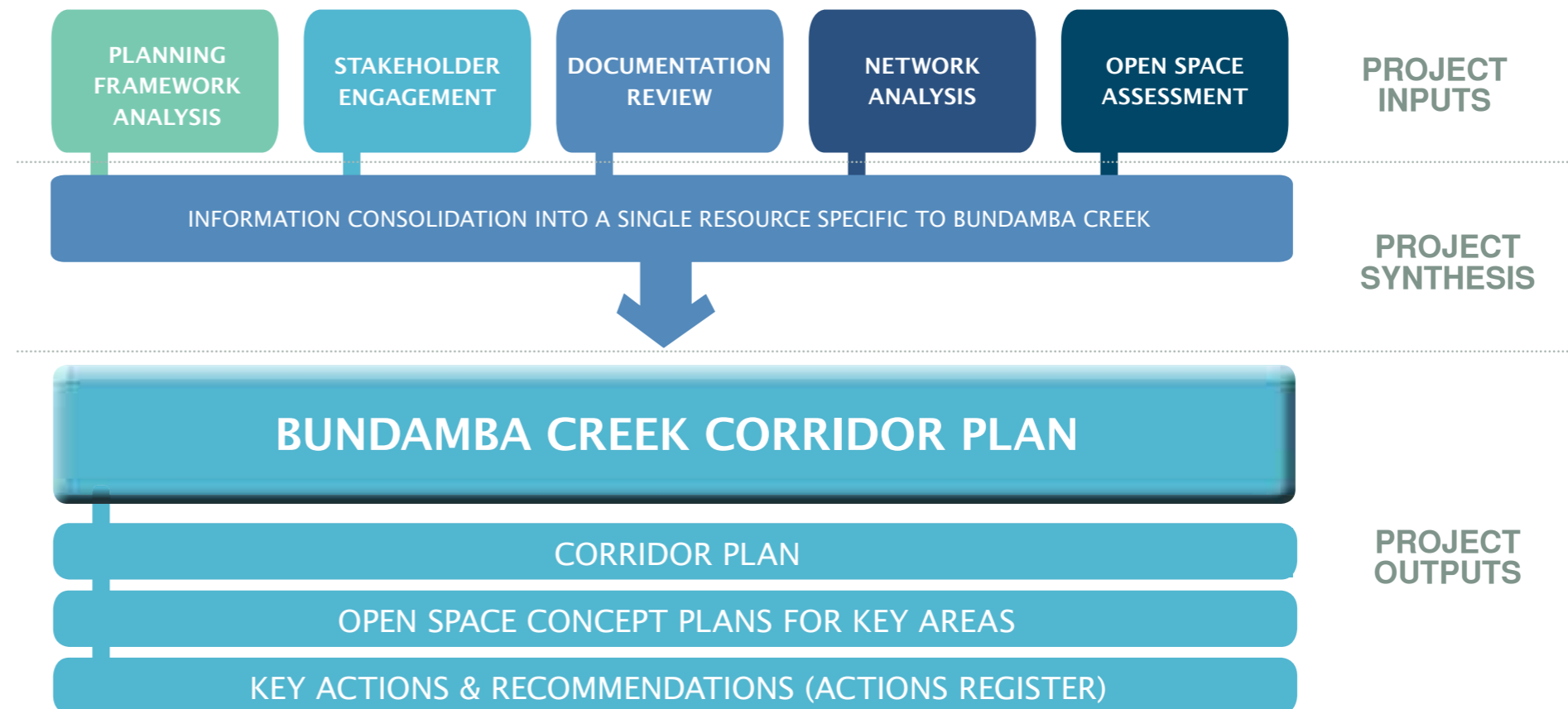


Figure 1. Project Development Diagram

1.0 Background

1.1 Introduction

This document presents a corridor plan to guide the long term transformation and management of the Bundamba Creek Corridor as a cherished and valued public asset. The successful transformation of this corridor will require careful consideration of the people, places and activities occurring within it.

Significant changes to the creek corridor and its catchment are forecast over the coming decades as urban development spreads across the catchment. This requires a thoughtful plan of response to ensure these changes deliver multiple benefits and avoid costly impacts. The Bundamba Creek Corridor Plan supports Council by providing a directional tool to make up-front decisions while maximising outcomes and efficiencies.

A range of work has already been completed for the corridor, including network and development plans. This project is Council's first opportunity at layering these plans to identify where competing outcomes exist as well as opportunities to inform future negotiations between the many stakeholders through the corridor.

This document provides stakeholders concerned with the future of the creek corridor a common vision and integrated plan for the corridor to support a cooperative approach to the decisions and actions to be taken over the coming decades.

1.2 Corridor Context

The Bundamba Creek Corridor (the corridor) extends over 33km in length originating in the Logan City Council Local Government Area (LGA) flowing north to the Bremer River through rural, industrial and established urban suburbs of Ipswich City Council.

Approximately 22% of the Bundamba Creek catchment is planned for future urban growth as part of the Ripley Valley Priority Development Area (PDA) which is expected to house a population of 120,000 when complete. This development will be undertaken by a number of different developers.

The corridor will play an important role in meeting the future open space needs of the catchment and beyond. The corridor also delivers important ecological services essential to the long term health and resilience of the catchment.

Past land use practices have impacted the corridor. Whilst patches of remnant ecology exist the default condition is that of a modified waterway with low ecological resilience to further catchment changes. Re-building ecological resilience will be essential to ensure the corridor can deliver the services expected from it into the future.

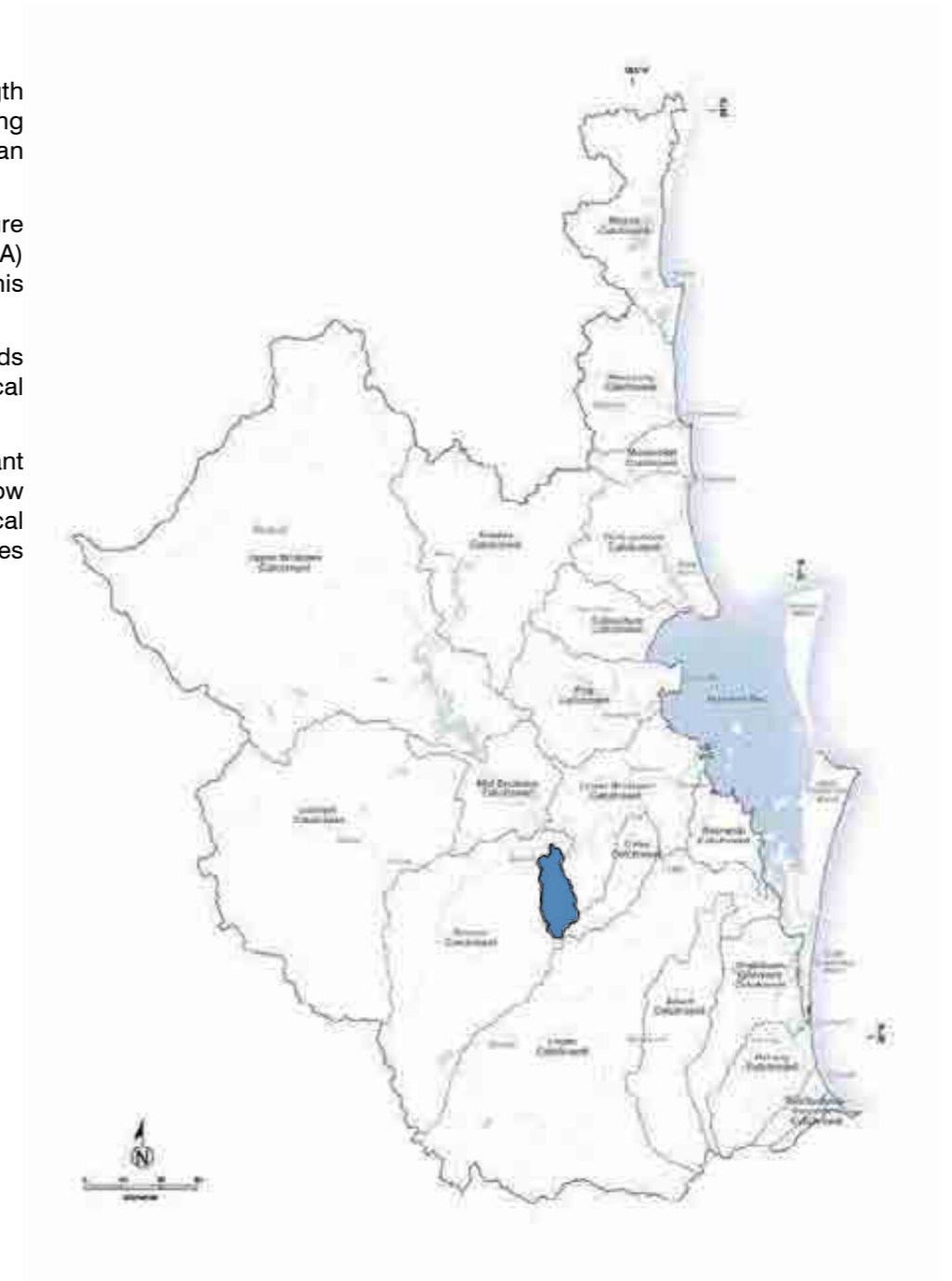


Figure 2.

Context Map

Source: Design team adaptation of map from Health-E-Waterways

1.3. Document Structure

This document has the following information provided:

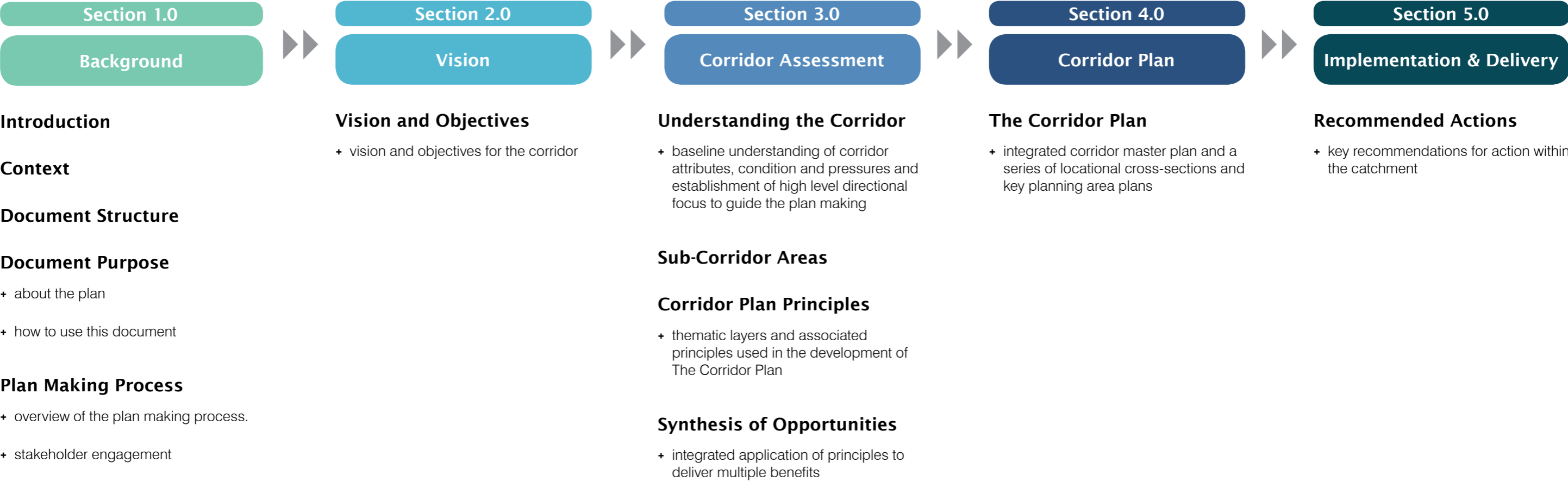


Figure 3. Document Structure

1.4 Document Purpose

1.4.1. About the Plan

The Bundamba Creek Corridor Plan (the 'Plan') builds on earlier work completed by Council and the Bundamba Creek Think Tank Group*, in particular the vision and objectives they have established for the corridor.

This plan is part of a suite of corridor plans to be developed for waterways within Ipswich. The need to undertake Corridor Plans was identified through the development of the Open Space and Recreation Strategy 2014 and the Waterway Health Strategy 2009. These strategies build upon and align with Council's policy framework. They also acknowledge that detailed planning and investigation has been done within the Ripley Valley PDA, but that further investigation is needed to ensure that waterway corridors can accommodate important ecological services, public park infrastructure while being resilient in an environment where extraordinary urban growth is planned.

On this basis, this document serves as a multifunctional resource which consolidates network planning, community needs, localised planning and development with a detailed analysis of the corridor's existing health and future open space needs.

This document provides:

- + One clear direction
- + Corridor specific information captured into a consolidated and condensed plan
- + A guiding document for planning and design within the corridor

*Council would like to acknowledge the contributions of the Think Tank Group which includes representatives from Local and State Governments, regional NRM bodies, research institutes, community groups, industry, water utilities and developers

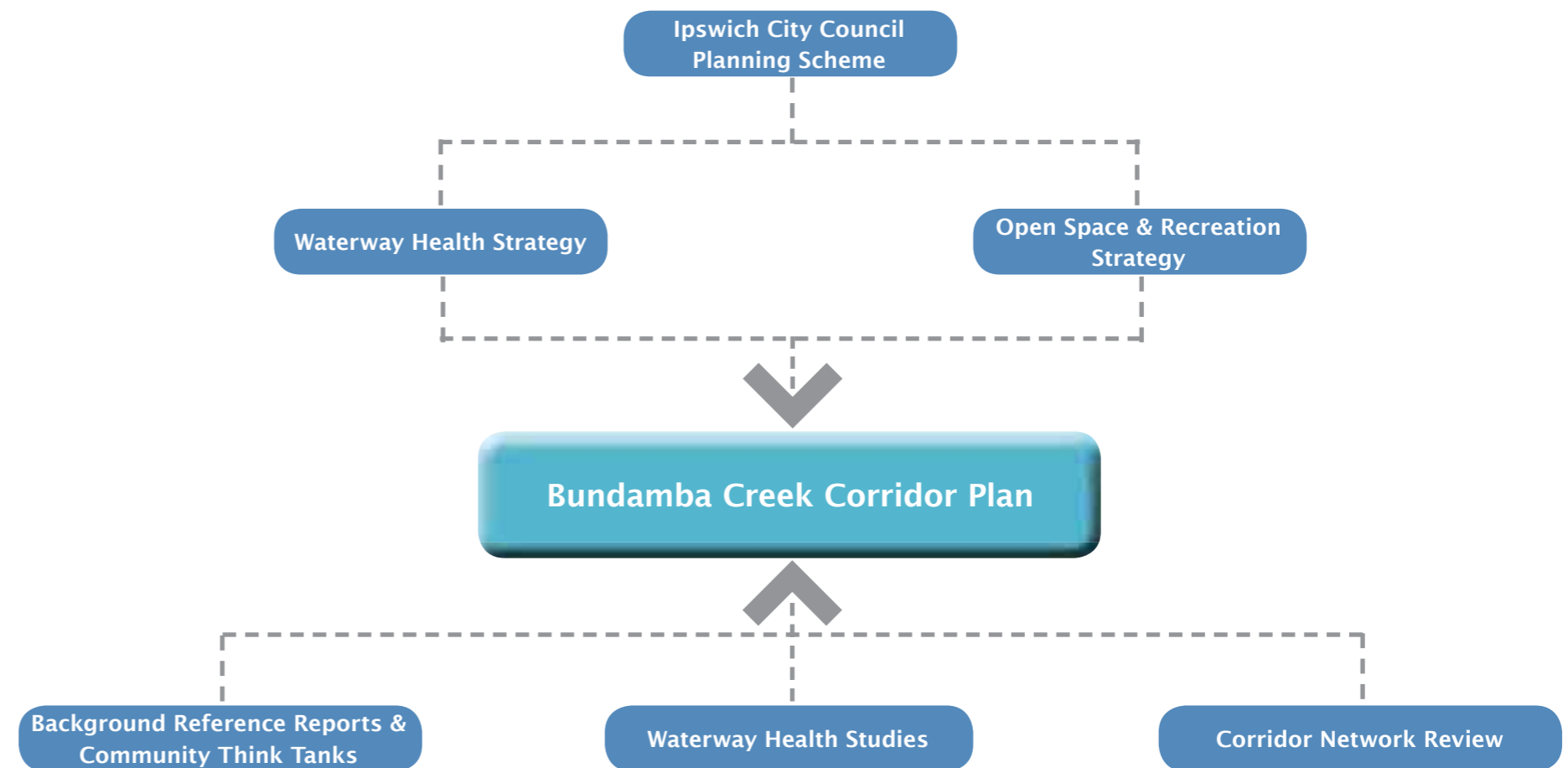


Figure 4. Document Hierarchy

1.4.2 How to Use the Plan

The Plan is intended to be used as a high level directional document seeking to inspire a common vision and trajectory for the creek corridor and to guide the decisions and actions taken by the many stakeholders concerned with its future. It provides clarity as to how existing planning and development requirements are to be applied across the Bundamba Corridor to ensure these outcomes are appropriate for the site conditions and deliver the common vision. For example, it identifies potential location and descriptions of stormwater management systems throughout the corridor to help achieve water quality and water quantity requirements. It also identifies where critical opportunities and constraints for the placement of certain infrastructure (parks, drainage) exist to inform negotiations with multiple developers around delivery of integrated solutions.

1.4.3 Associated Documents

Council has a number of existing guidelines and strategies which are key tools for the delivery of this project. These include:

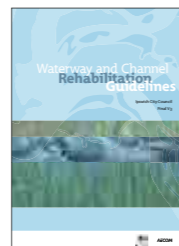
- + Open Space and Recreational
- + Waterway Health Strategy
- + Waterway and Channel Rehabilitation Guidelines



Open Space and Recreation Strategy 2014



Waterway Health Strategy 2009



Waterway and Channel Rehabilitation Guidelines

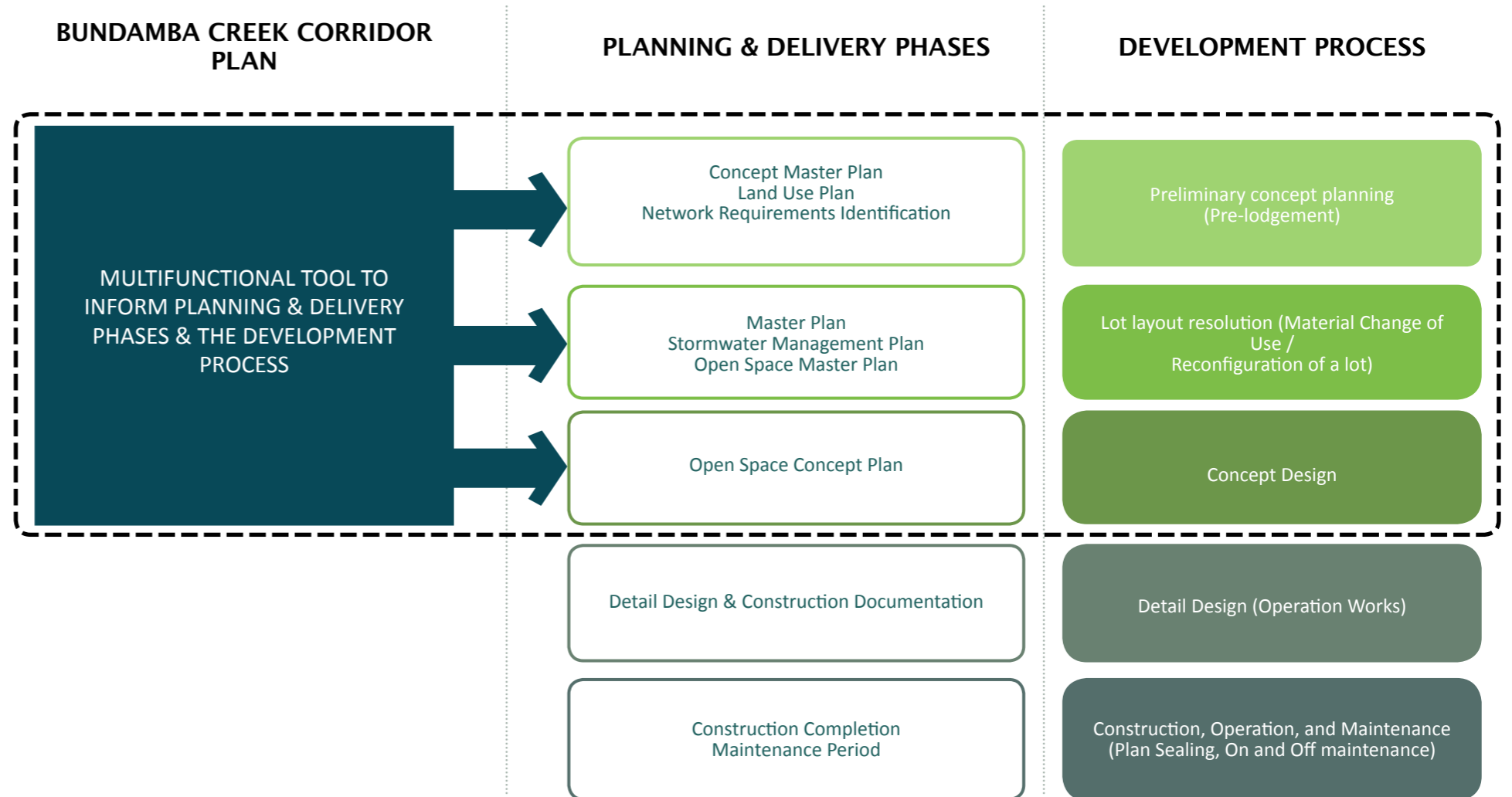


Figure 5. Document Function Diagram - highlights where the Corridor Plan can be applied as a high level directional document.

1.5 Plan Making Process

The planning process builds on the energy and passion for the future of the Bundamba Creek Corridor generated by the work to date by Council and the Bundamba Creek Think Tank Group.

A consultative six step planning process was employed as illustrated on Figure 6.

The Planning Process

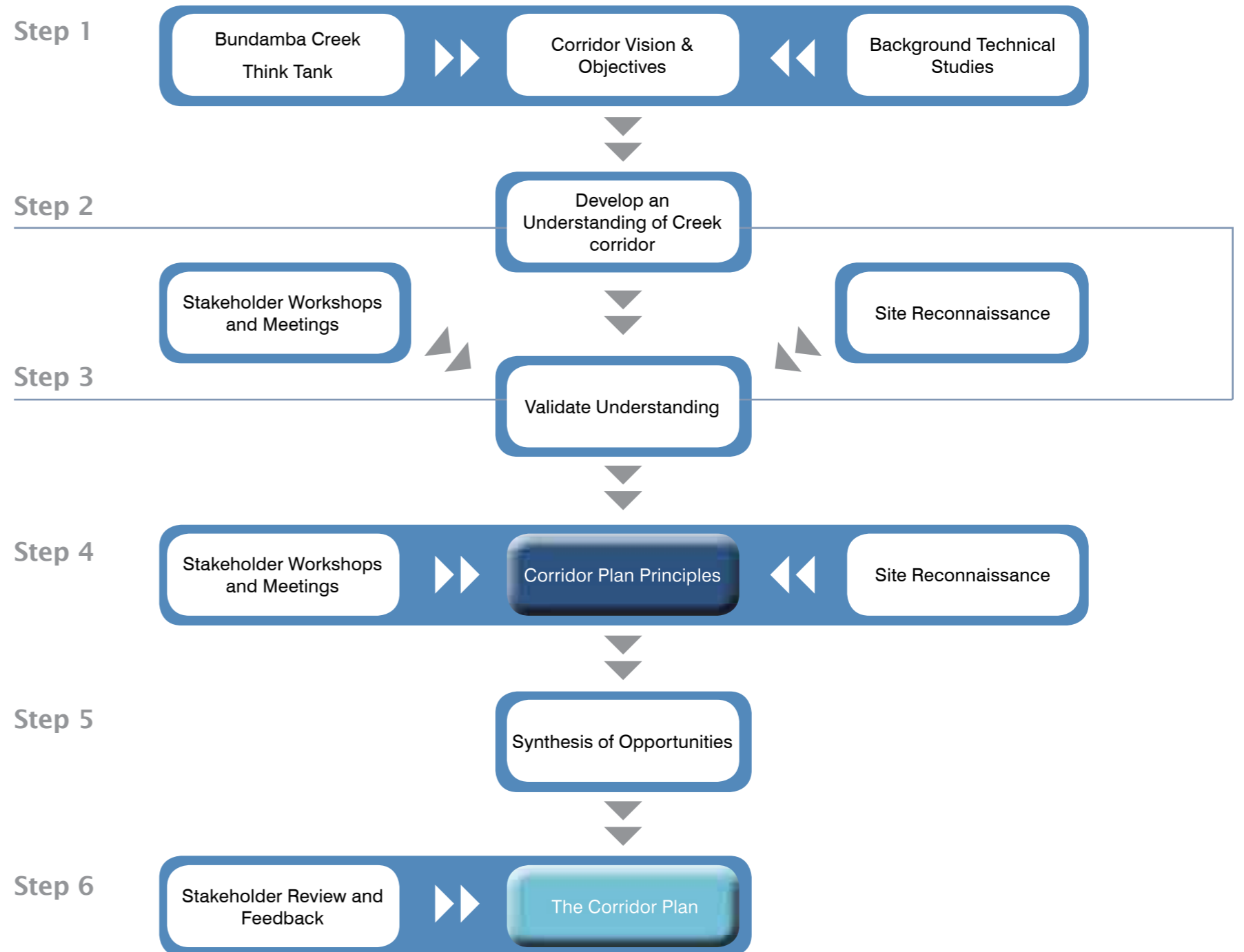


Figure 6. The Planning Process

1.5.1 Stakeholder Engagement

The knowledge, experiences and ideas for the creek corridor held by key stakeholders was captured through the planning process via a series of planning workshops, and review / feedback session.

The stakeholders consulted included Local and State Government, regional NRM bodies, research institutes, community groups, industry, developers and water utilities.

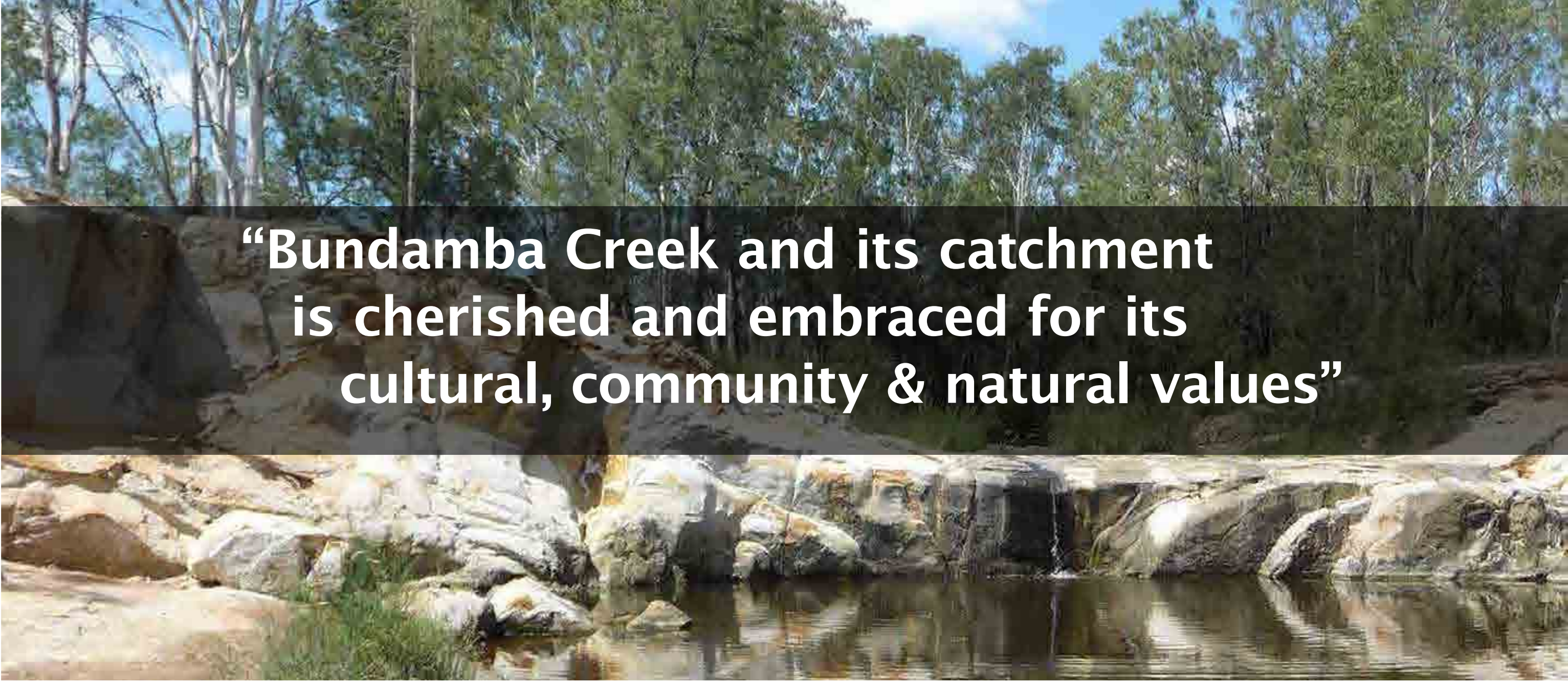
Evident throughout the engagement process was the importance all stakeholders placed on ensuring the significant land uses changes expected to occur in the Bundamba Creek catchment over the next three to four decades contribute positively to the values and utility of the corridor and that this be realised through a cooperative process guided by a common end vision.

The Cooperative Research Centre (CRC) for Water Sensitive Cities also focused on the Ripley Valley PDA as the topic of an Industry Case Study (2 day Workshop). The aim of the workshop was to synthesise insights from the 35 different CRC projects into specific solutions for this new large greenfield development area. The 'Ideas for Ripley Valley' document summarises the workshop outcomes and includes broad opportunities for the Ripley Valley PDA area including sewerage conveyance innovation, wastewater treatment and recycled water use, stormwater harvesting, microclimate, urban design and waterway health.



2.0 Vision

A vision statement giving expression to the aspirations for the future of the creek corridor was developed by the Bundamba Creek Think Tank Group. The vision, provided below, provides inspiration and guidance to the planning of the creek corridor.



“Bundamba Creek and its catchment is cherished and embraced for its cultural, community & natural values”

2.1 Vision and Objectives

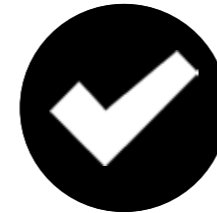
The vision articulates a desire to better connect people with the creek corridor in a conscious way as both stewards and as users/benefactors. To support the vision a suite of master planning objectives were developed as provided below. These objectives provide a framework to allow the testing of opportunities and actions across the corridor and to monitor outcomes once delivered.



WORKING AS ONE

How

- + Management and coordination
- + Development of a Corridor Plan and subsequent master plans
- + The process thus far
- + Agreed standards
- + Shared resources



WE ALL BENEFIT

How

- + Recreational returns, access to waterways
- + Health improvements
- + Aesthetics
- + Education / information
- + Resilience
- + Drainage and flood management



EMBRACING THE ENVIRONMENT

How

- + Natural systems for life
- + Riparian systems / corridors
- + Education / information
- + Pollution control
- + Wetlands
- + Plants and Animals



MAKING IT HAPPEN

How

- + A Clear plan of action
- + We all have a role
- + Monitoring and compliance
- + Community engagement / involvement

3.0 Corridor Assessment

3.1 Understanding the Corridor

Previous planning and technical reports were reviewed to understand the key values and attributes of the corridor and the pressures on the corridor that need to be managed. The review also identified where competing outcomes for the delivery of infrastructure and services exist throughout the corridor. Reports reviewed included waterway health and biodiversity, flooding and stormwater management, open space and recreational planning and land use planning.

Site reconnaissance was undertaken to ground truth information extracted from the background reports and to update the condition situation. A consolidated base plan of the identified corridor condition, attributes, pressures, and current and planned management actions was developed. This base plan was presented at a stakeholder planning workshop for validation and to capture any additional information relevant to the master planning process.

The outcome of the workshop was a general agreement across the stakeholders on the key attributes, values and issues within the corridor that should drive the planning process. This included the identification of three sub-corridor areas and associated directional focus to guide a more spatially nuanced set of corridor management responses and interventions.

3.2 Sub-Corridor Areas

The existing character of the creek corridor is defined largely by the adjoining land uses which have influenced both use and condition. Having regard to existing and planned future adjoining land uses, three high level sub-corridor areas were identified as described below and illustrated on Figure 7.

SUB-CORRIDOR AREA	LAND USE	CORRIDOR CONDITION	DIRECTIONAL FOCUS
Lower Corridor	Adjoining land uses comprise older urban neighbourhoods of Bundamba, Booval, Blackstone and some light industry.	Corridor condition is highly modified primarily being cleared of vegetation for enhanced flood conveyance. Culturally important sites such as the Evelyn-Dodds Cultural Reserve are located within this area.	“Community connectivity” reflecting the opportunities identified to enhance the connections into and along the corridor for human benefits and for improved ecological connectivity and resilience.
Middle Corridor	Adjoining land uses comprise of Swanbank industrial areas to the east and planned future urban neighbourhoods and town centre (Ripley Valley PDA).	Corridor condition is mixed with some sections having reasonable riparian vegetation, remnant wetlands and channel condition, particularly where adjoining land has been used as a buffer to the Swanbank power station.	“Integrated precinct wetlands and sports grounds” for the southern section and “regional open space” for the northern section. The former reflects opportunities for an integrated, multi-use/multi-functional corridor to support the open space, amenity and functional requirements of adjoining planned future urban neighbourhoods and the Ripley Town Centre. The later reflects the opportunity for a broad range of active and passive recreational and environmental uses of the corridor in this area with sufficient scale to service the regional population.
Upper Corridor	Adjoining land uses comprise of existing rural pastures, combining areas of planned future urban neighbourhood growth (Ripley Valley PDA) and remnant forests for conservation.	The corridor condition is mostly cleared with poor riparian condition and channel erosion.	“Riparian forest” reflecting the opportunity for significant re-vegetation of the broad floodplain areas to the south (upstream) of the Ripley Valley PDA for regional ecological, biodiversity and flood storage benefits.

Table 2. Sub-Corridor Areas

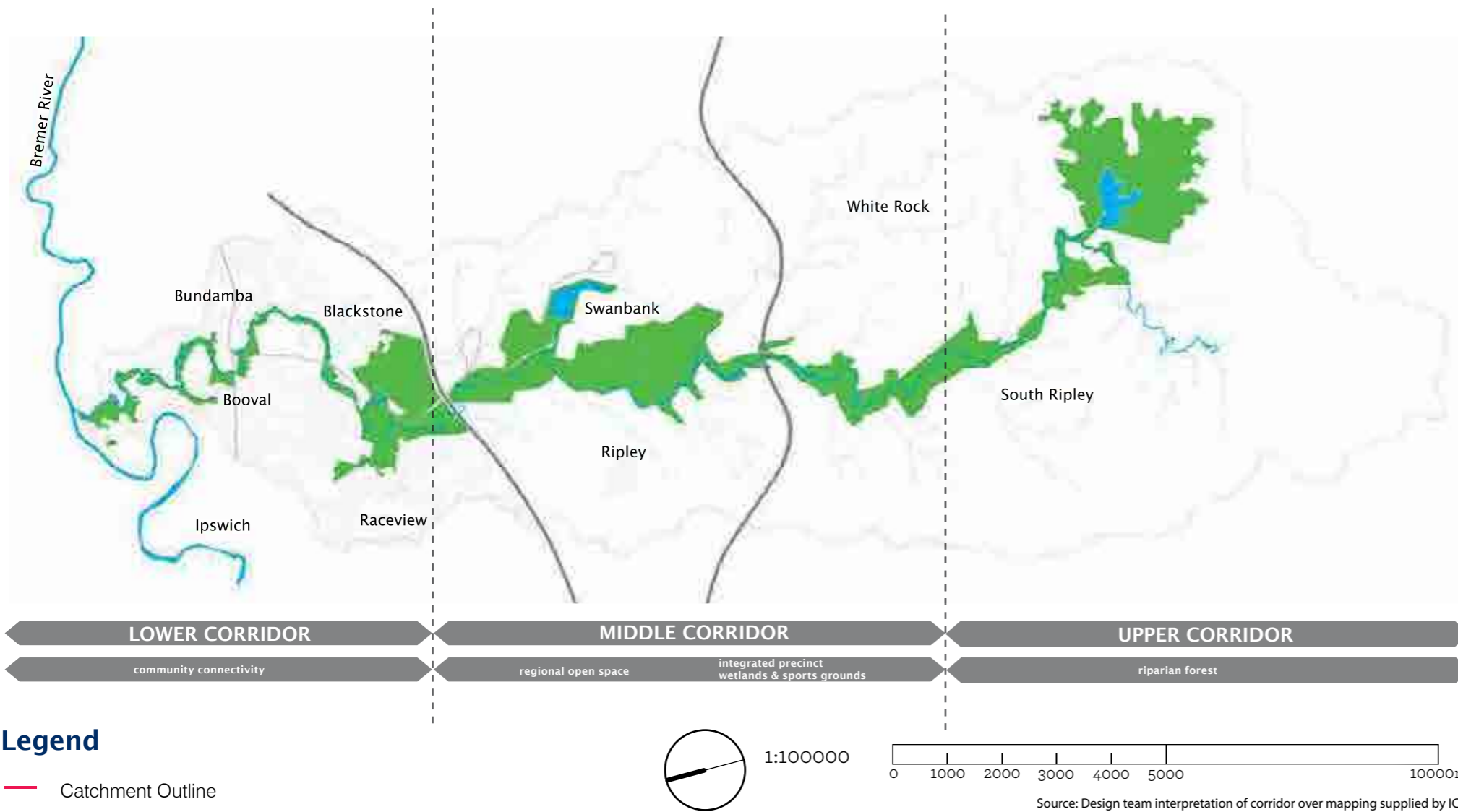


Figure 7. Bundamba Creek Corridor

3.3 Corridor Plan Principles

A practical approach was employed to 'building-up' the corridor plan, having regard to the current values, condition and pressures. The adopted approach established six key 'Thematic Layers' for which specific corridor outcomes and principles were then identified. The process of developing the corridor plan was then one of integrating the 'thematic' principles based on on-ground opportunities to deliver multiple outcomes aligned to the high level directional focus established for each sub-corridor area.

3.3.1 Thematic Layers & Principles

Six thematic layers were used to further define and characterise the corridor and to establish principles to guide the development of The Corridor Plan. The six thematic layers are:

- + Cultural Connections
- + Land Use
- + Vegetation
- + Flooding and Drainage
- + Waterway Health
- + Open Space and Recreation

3.3.1.1 CULTURAL CONNECTIONS

The Bundamba Creek corridor has special cultural relevance for the local traditional owners as a place once used for food and recreation and as a source of stone for use in early hunting implements. 'Bundanba', as it was originally called, is believed to have derived from the Aboriginal words 'bundan' and 'ba', meaning a stone axe and place of. The Evelyn-Dodds Cultural Reserve, located in the lower reaches of Bundamba Creek, is an important cultural site for the local Aboriginal peoples. The Reserve contains ecologically important floodplain wetlands that are actively managed by the local Aboriginal community in partnership with Ipswich City Council and the Bremer River Fund.

One of the first leaseholders in the Ripley Valley was a grazier on the upper Bundamba Creek on a property known as Bundamba Station. When the property sold in 1854 the station covered an area of 25,000 acres of freehold and leased land and it was the largest single pastoral and agricultural enterprise in the upper Bundamba Creek and Oxley Creek region. The homestead overlooked a small lagoon to the west of where the Upper Bundamba School (Ripley) was built in 1874. The centrepiece was the Bundamba Lagoon (now Daly's Lagoon).

Ripley Valley was essentially a farming (pastoral and agricultural) district. In 1887 the 'selectors' were graziers, farmers, dairymen and timber-getters, with settlement occurring through to the early 20th Century. There are a number of significant European cultural heritage sites still located in close proximity to the Bundamba Creek Corridor, including the Timekeeper's Cottage and the Redbank Bundamba Loop Line.

Celebrating Bundamba Creek's cultural heritage and ensuring sites of cultural significance such as the Evelyn-Dodds Cultural Reserve, Timekeeper's Cottage and Redbank Bundamba Loop Line are given recognition and protection is a key function of the corridor plan.

Corridor Plan Principles

The following principles protect and enhance cultural connections:

- + Sites of cultural importance will be treated respectfully.
- + Stories of cultural heritage will be told through subtle reference in way finding signage and creek corridor design.

Legend

- Regional Business & Industry Buffer
- Recreation
- Conservation
- Waterway
- Catchment Outline
- Heritage Nodes

The 'ribbon' running through the corridor is a metaphor depicted within figure 8; suggestive of a continuous story or narrative that may be found throughout the open space link. The Corridor Plan principles anticipate that the delivery of this narrative may occur through an artistic response, landscape planting, sculptures or signage and would be designed in collaboration with the local Aboriginal community, local historians and the National Trust in partnership with Ipswich City Council.

The dashed line represents the ridgeline topography that frames the catchment of the Bundamba Creek. While the open space network along the corridor is an important aspect of the Corridor Plan initiatives, the links across Bundamba Creek connecting communities East to West and to the vegetated ridgelines beyond was also seen as an important planning and design consideration.

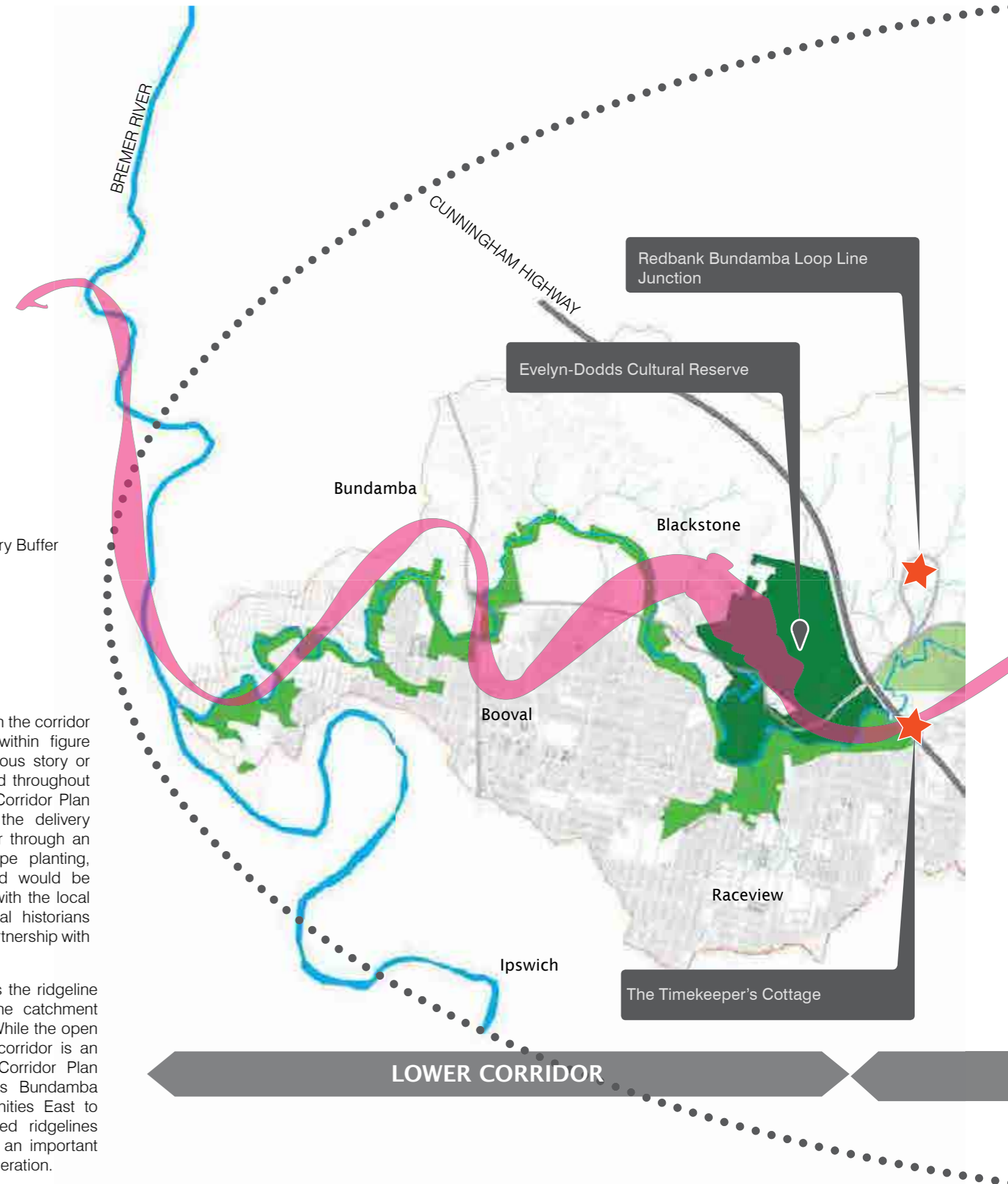
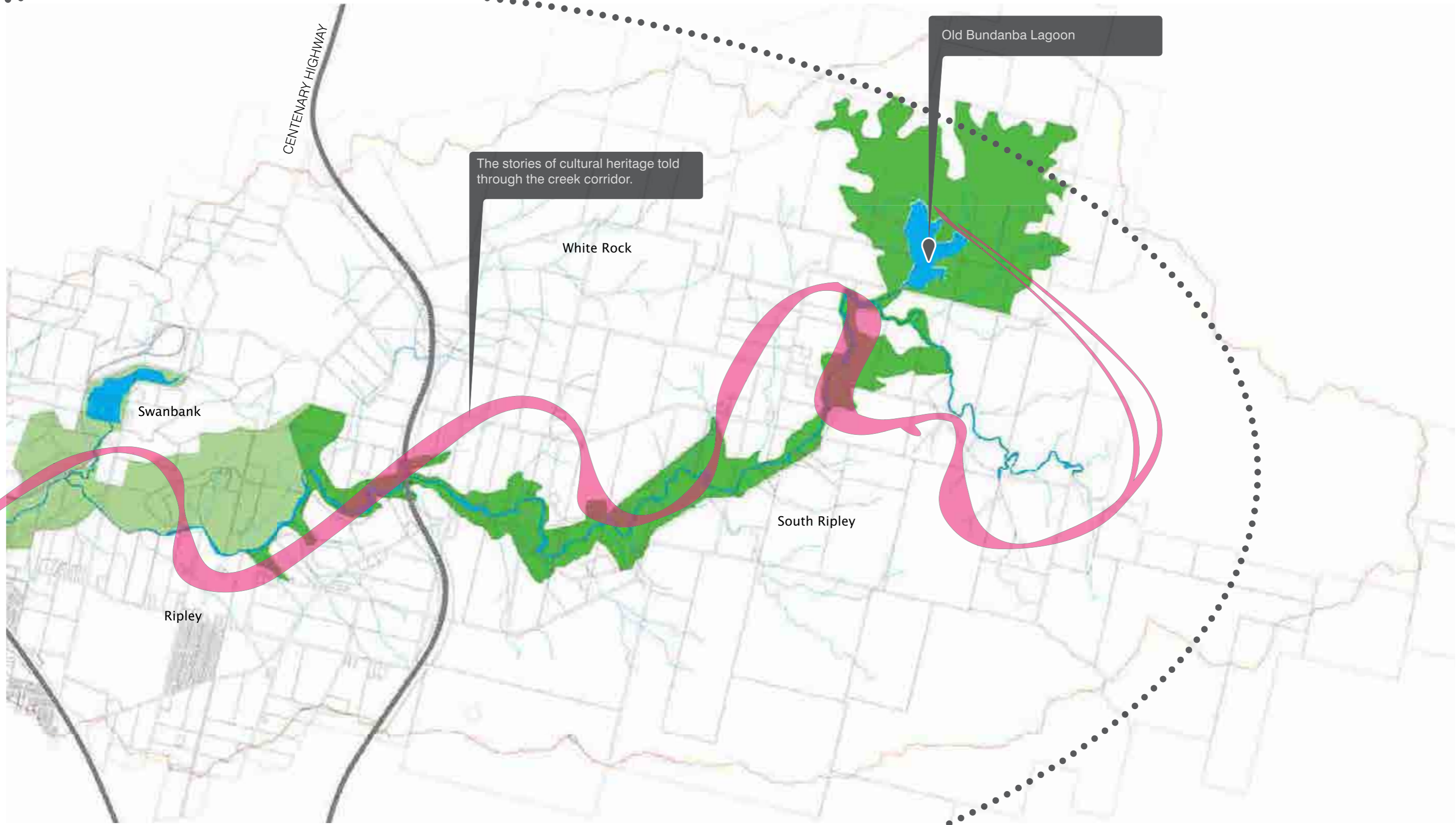


Figure 8. Bundamba Creek Corridor Cultural Connections

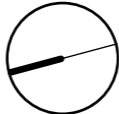
The Bundamba Creek Corridor has deep cultural relevance for the local indigenous peoples and by name is synonymous with Ipswich and greater Brisbane's industrial heritage through coal and energy production.

A number of important cultural connections and sites exist in the Bundamba Creek catchment and along the creek corridor including the Flinders-Karawatha Corridor and the Evelyn Dodds Cultural Reserve.

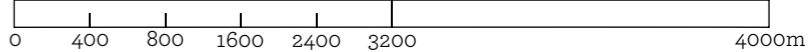


MIDDLE CORRIDOR

UPPER CORRIDOR



1:40000



Source: Design team concept sketch over existing tributaries mapping as supplied by ICC.

3.3.1.2 LAND USE

The Bundamba Creek corridor traverses a complex and changing pattern of land uses. The headwaters lie within the Flinders-Goolman Conservation Estate which is dominated by rolling hills supporting protected conservation areas and lower slopes and valley floors cleared for rural uses. The middle reaches traverse rural uses that are transitioning to urban uses as part of the Ripley Valley PDA and Swanbank Industrial Park. The lower reaches (north of the Cunningham Highway) traverse existing urban development including low and medium density residential, commercial, industry and recreation.

Currently, the Ripley Valley PDA is administered (land use planning and development regulation) by Economic Development Queensland under the Economic Development Act. Generally this includes land to the east and west of Bundamba Creek to the south of the Centenary Highway, and land to the west of the creek between the Centenary Highway and Cunningham Highway. The remaining land in the catchment is administered by Ipswich City Council under the Ipswich Planning Scheme.

Managing pressures on the creek corridor from adjoining land uses and enhancing the services provided by the corridor to the community is a key function of The Corridor Plan.

Corridor Plan Principles

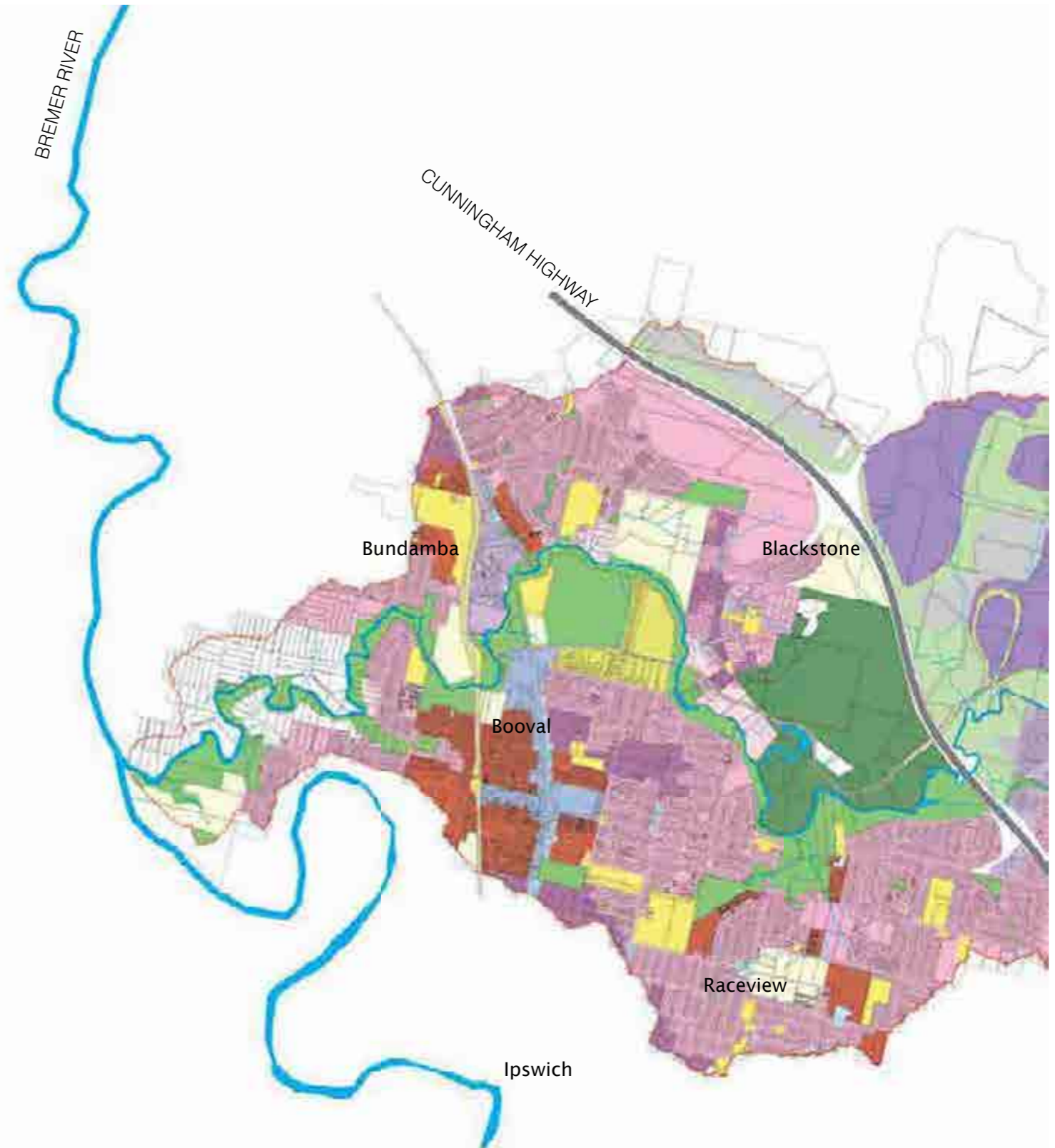
The following principles enhance corridor services to adjoining land uses:

- + The creek corridor will be a key piece of green infrastructure which integrates many functions to fulfil the environmental, social and economic needs of the existing and future communities.
- + The creek corridor will provide a key green link connecting existing and future communities, existing and future open space networks, and existing and future vegetation communities.
- + The creek corridor will provide important buffers between the range of land uses throughout the catchment, including conservation, industrial, commercial and residential.
- + The creek corridor will make use of green space to develop a sense of place and identity to the urban form.

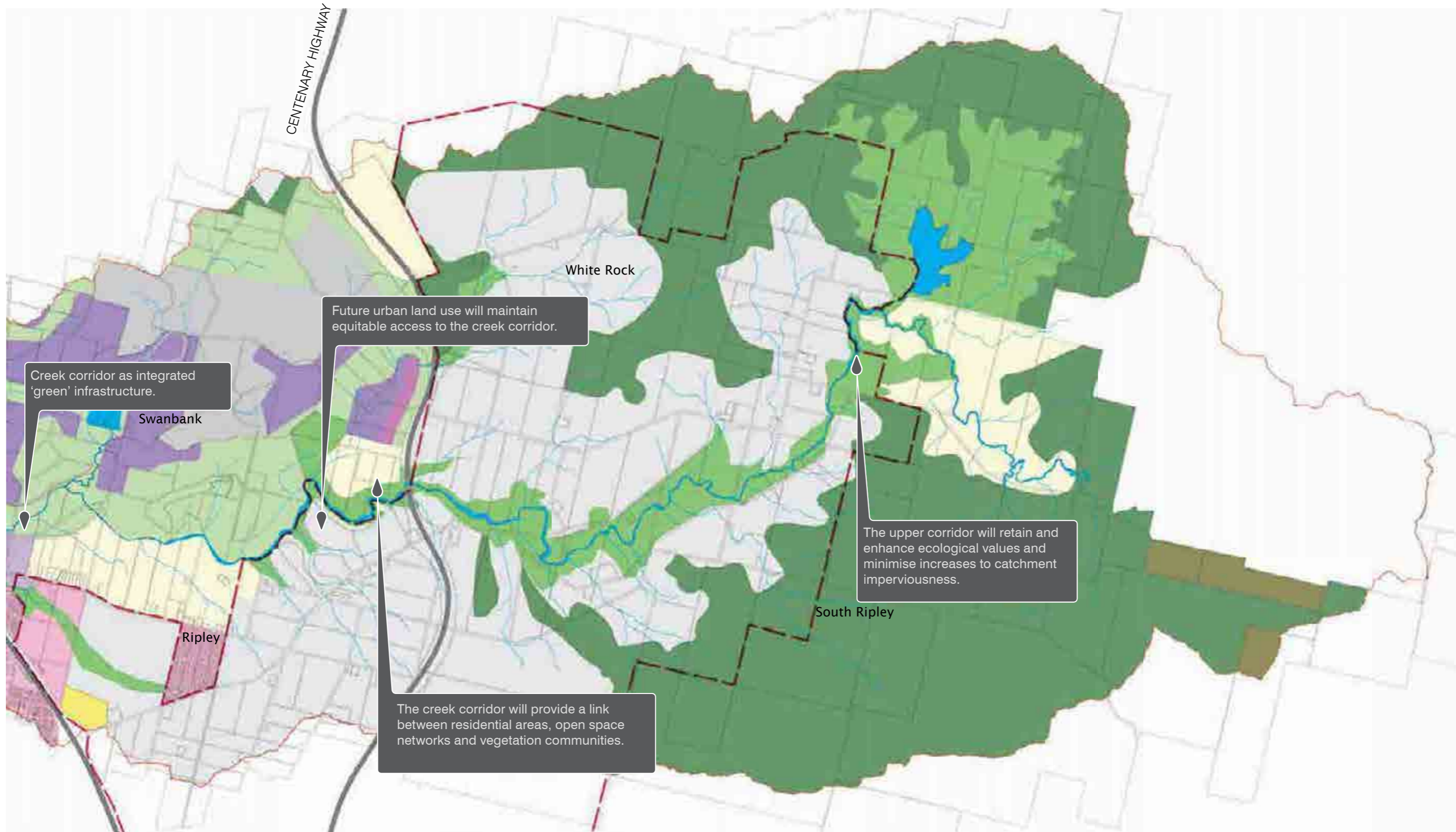
Green infrastructure describes a network of green spaces and water systems that deliver multiple environmental, economic and social values and benefits. It includes vegetated stormwater management systems, parks, waterways, wetlands and street trees.

Legend

- Regional Business & Industry Buffer
- Recreation
- Conservation
- Waterway
- Special Use
- Residential Housing - Low Density
- Character Housing - Mixed Density
- Primary Business Centre
- Character Housing - Low Density
- Regional Business and Industry
- Catchment Outline
- Urban Growth (PDA) Boundary
- Future Urban
- Water
- Special Land Management
- Regional Business and Industry - Low Impact
- Regional Business and Industry - Investigation Area

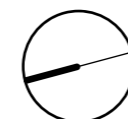


LOWER CORRIDOR

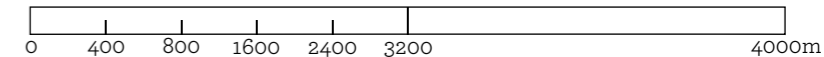


MIDDLE CORRIDOR

UPPER CORRIDOR



1:40000



Source: Design team interpretation of land use mapping supplied by ICC.

3.3.1.3 VEGETATION

Despite historic clearing in the catchment, there are a number of Regional Ecosystems mapped throughout the Bundamba Creek catchment under the Vegetation Management Act 1999, including areas which are classified as 'endangered' and 'of-concern'. These include areas of the endangered Queensland Blue Gum adjacent to the riparian corridor, particularly in the lower reaches of the creek corridor north-east of the Ripley Valley PDA.

The steep hills surrounding the Bundamba Creek Catchment are predominately covered by native forests which are zoned for conservation and strategic reserves. This vegetation is part of the Flinders Karawatha Corridor which is the largest remaining continuous stretch of open eucalyptus bush land south of the Brisbane River and supports many rare and threatened flora and fauna species. Of note, the White Rock - Spring Mt Conservation Estate and the Flinders- Goolman Conservation Estate both sit partly within the Bundamba Creek catchment.

Clearing of vegetation from floodplain areas along much of Bundamba Creek for rural use, industry and residential developments has generally degraded the riparian corridor and destabilised the creek however there remain some relatively intact reaches with good ecological values. These are predominantly found in the middle corridor area near the existing township of Ripley and the Swanbank Power Station where the riparian vegetation is far more extensive than in the upper and lower corridor areas.

Part 15 of the Planning Scheme provides that "vegetated open space buffers are established to water courses" that are "fifty (50) metres from the top of bank for Bundamba and Deebing Creeks (i.e. a minimum 100 metre wide corridor). This is consistent with the Ipswich City Council Waterway Health Strategy minimum recommendations. These outcomes should be met across Ipswich where feasible and practicable.












Protecting and enhancing remnant riparian vegetation communities is a key function of the corridor plan. This includes improving connectivity and width of the riparian corridor as well as re-engaging catchment stormwater flows with the floodplain to improve resilience, biodiversity, waterway stability and improve water quality.

Corridor Plan Principles

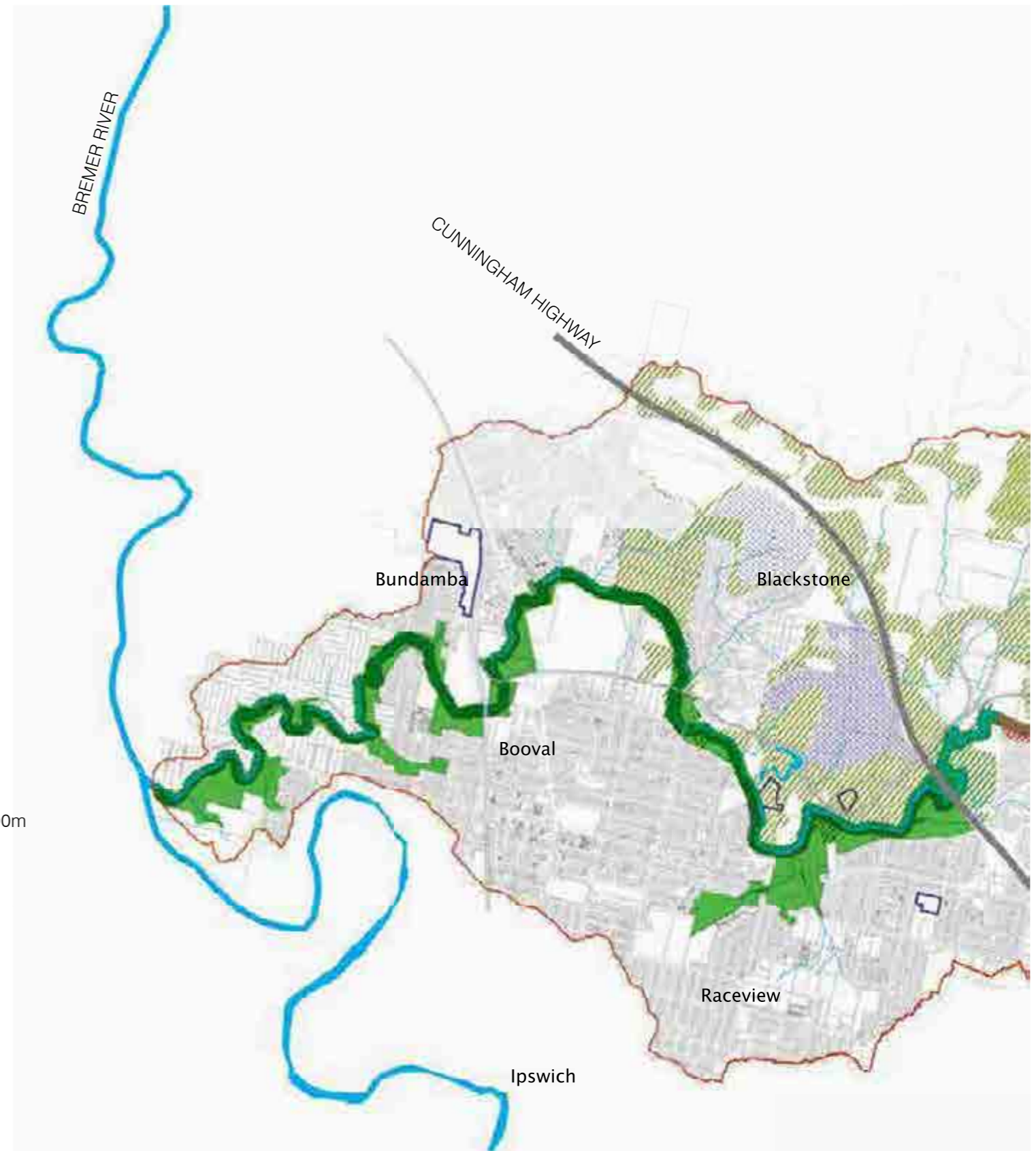
The following principles protect and enhance vegetation within the creek corridor:

- + Areas of remnant vegetation within the corridor will be protected and enhanced.
- + Riparian vegetation will be enhanced to provide increased stability for the waterway corridor and to help support healthy creek environments.
- + Riparian buffer widths will meet the minimum recommendations as outlined in the Planning Scheme and Waterway Health Strategy.
- + Stormwater can be discharged as distributed flows through riparian corridors to re-engage floodplain features.

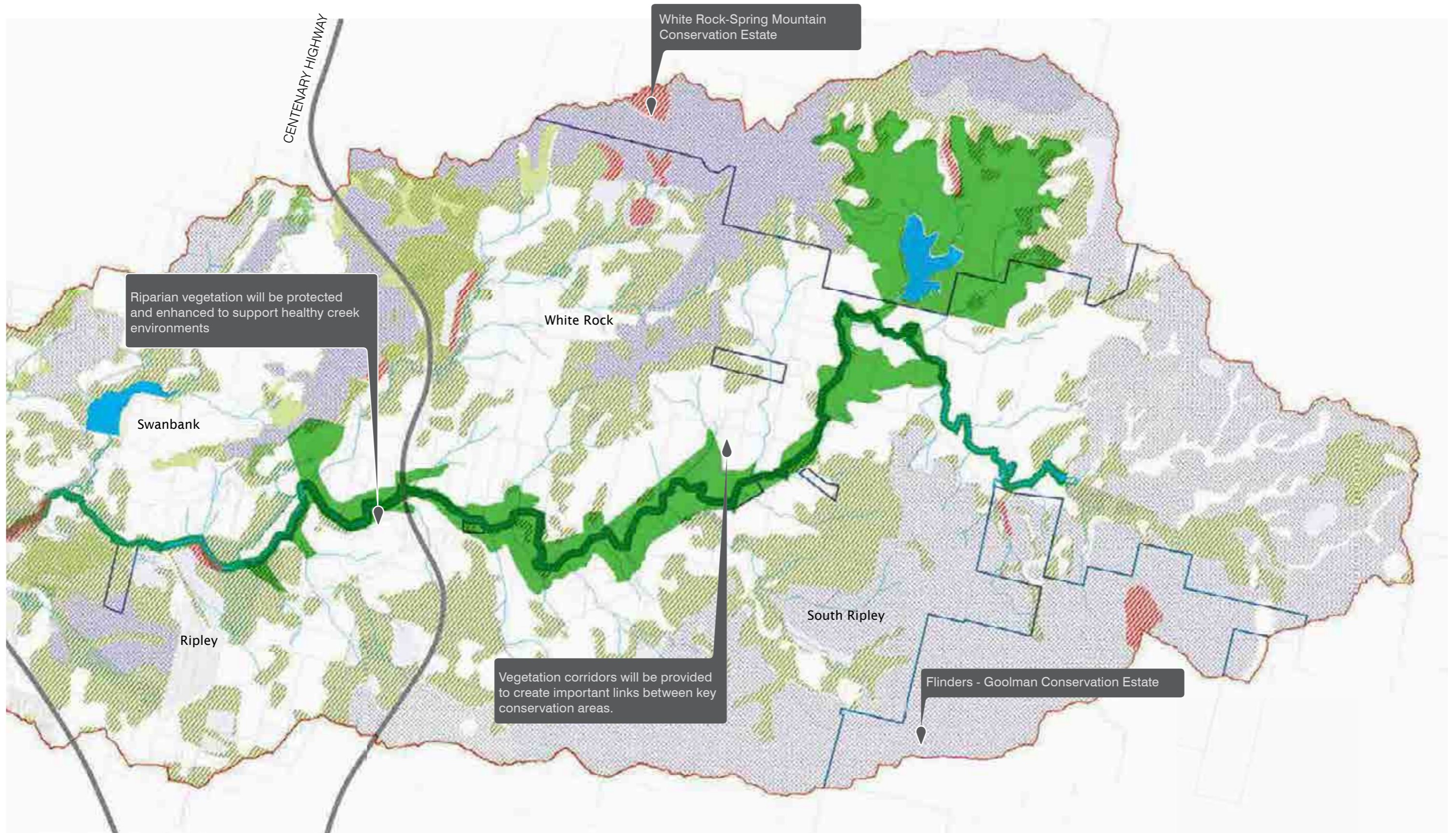
Legend

-  Proposed Riparian Vegetation (100m wide corridor shown)
-  Recreation
-  Endangered Vegetation
-  Of Concern Vegetation
-  Mature Regrowth
-  Known Koala Habitat
-  Potential Koala Habitat
-  Known Habitat Vegetation
-  Land For Wildlife Boundary
-  Waterway
-  Catchment Outline

NB: Plan built upon vegetation mapping data provided by ICC.

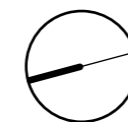


LOWER CORRIDOR

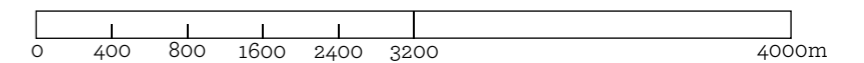


MIDDLE CORRIDOR

UPPER CORRIDOR



1:40000



Source: Specific vegetation mapping extracted from the current town plan as supplied by ICC.

3.3.1.4 FLOODING & DRAINAGE

Vegetation clearing and increased catchment imperviousness has changed the hydrology and geomorphology of the Bundamba Creek corridor resulting in more frequent ‘flashy’ flooding in the middle and lower catchment. The catchment currently experiences flooding issues that impact mostly on existing urban developments in the lower catchment.

Future hydrologic changes are expected as a result of the planned development within the Ripley Valley PDA. To ensure this development does not further impact flooding in the lower corridor it will be necessary for flood mitigation works to be provided as part of the development to ensure there is no increase in flood inundation and/or flood damages within the lower catchment as a result of the development.

Ensuring actions in the contributing catchment and within the creek corridor do not adversely impact on flooding is a key function of The Corridor Plan.

Two types of stormwater management are proposed. These reflect the condition of the closest tributaries and also the existing and planned services and values in the main corridor.

-Type 1 requires management of stormwater quantity and quality entirely within the development footprint and not within the creek corridor. The reasoning for this is due to the good condition of the receiving tributary which needs to be protected and / or the requirement for the main corridor downstream to accommodate other services, such as the priority of the riparian corridor in the upper catchment area to provide floodplain revegetation, not water quality treatment.

-Type 2 requires management of stormwater quantity within the development footprint with stormwater quality able to be managed via integrated stormwater treatment solutions as part of the open space network within the creek corridor. The identification of potential regional stormwater treatment system locations was based on a high level assessment of suitable sites for constructed stormwater wetlands* considering available land area, existing vegetation, topography and flood depths / velocities. For example, areas within the corridor which currently periodically pond with low velocity flood flows were identified as potential stormwater treatment wetland sites as this area would not be suitable for some recreational land uses.








*stormwater wetlands are current best practice stormwater treatment solutions for end-of-pipe locations in flood-prone land as they are resilient and provide a high level of treatment. Other solutions may also be available in the future which will provide comparable outcomes.

Corridor Plan Principles

The following principles ensure flooding within the creek corridor is not made worse and where practicable is improved:

- + No net increase in stormwater runoff peak flows will be achieved through a combination of increased floodplain vegetation, where this does not increase local flooding, and by incorporating detention basins and water sensitive urban design measures into new development areas.
- + Floodplain vegetation cover in the upper corridor will be increased to temporarily store and slow flood flows.
- + Best practice Water Sensitive Urban Design principles will be adopted by all new development to manage stormwater discharges to the creek corridor.
- + Retrofit measures will be considered within existing urban areas to mitigate urban stormwater pollutant inputs and to reduce localised flood impacts where practicable.

Legend

-  Potential Location for Floodplain Revegetation
-  Possible Location for Regional Stormwater Treatment / Low Velocity Flooding
-  Sub-catchment Stormwater Management Type 1: refer text box
-  Sub-catchment Stormwater Management Type 2: refer text box
-  Q100 Flood Line
-  Waterway
-  Catchment Outline

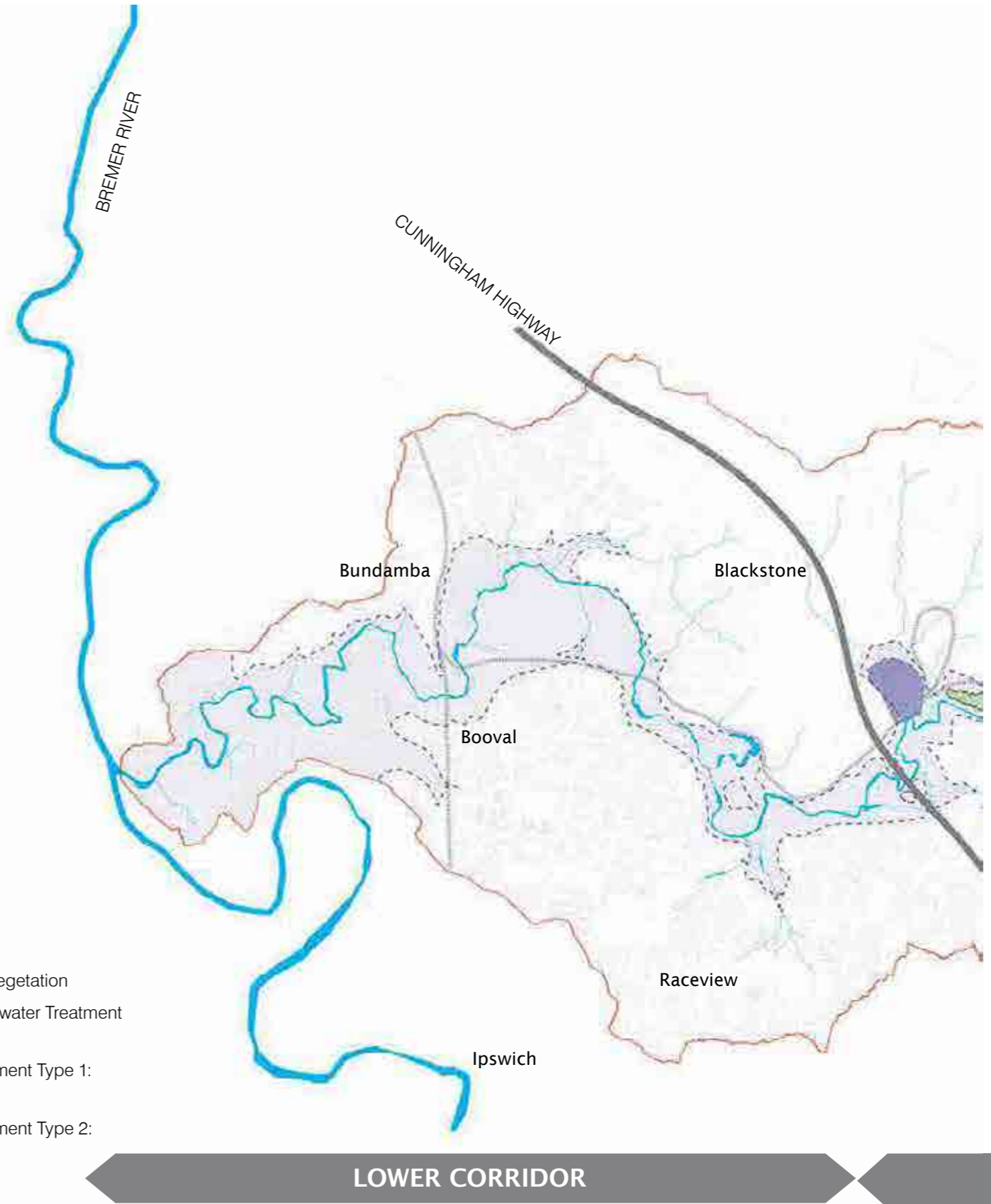
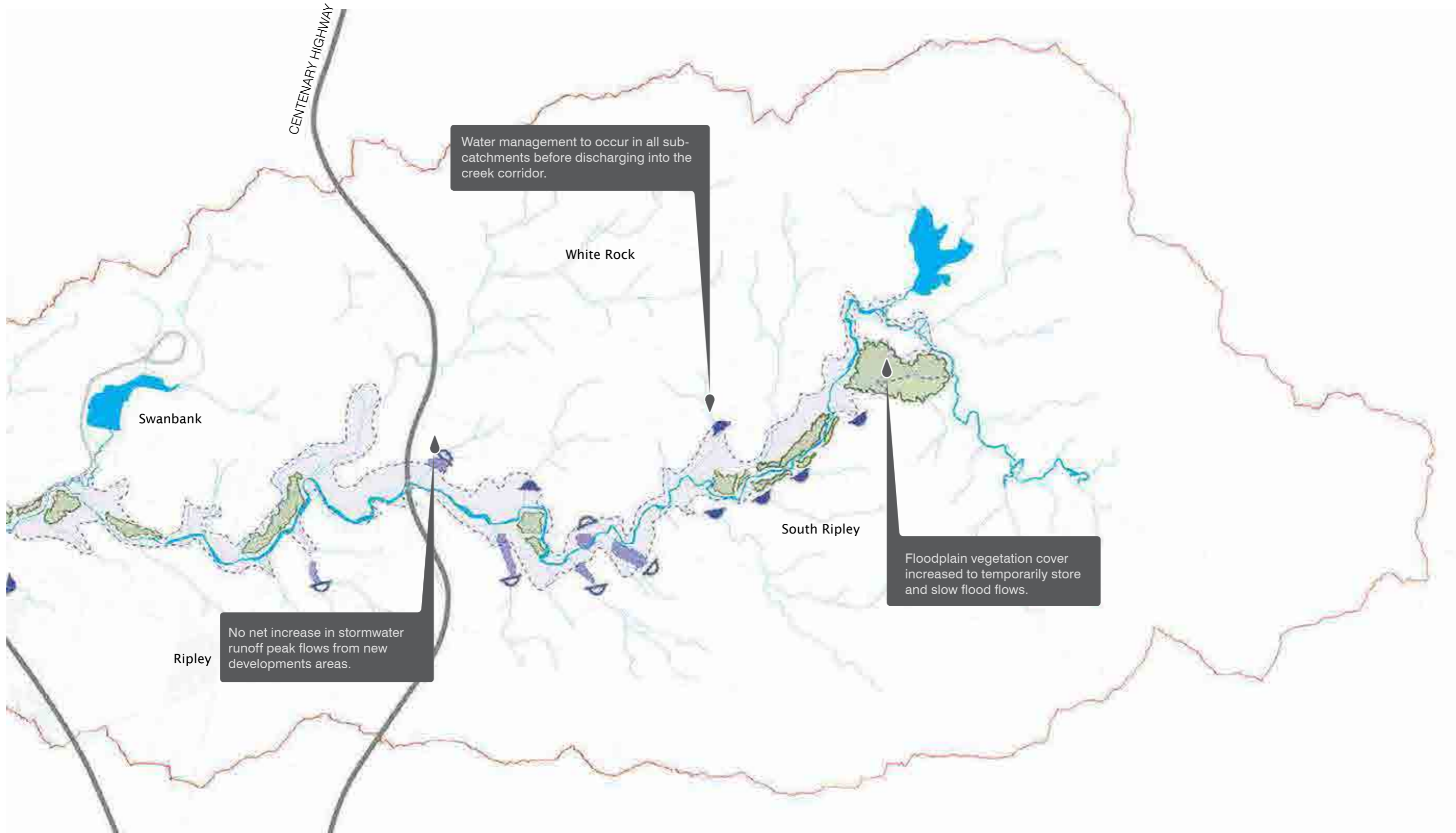
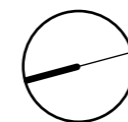


Figure 11. Bundamba Creek Corridor Flooding

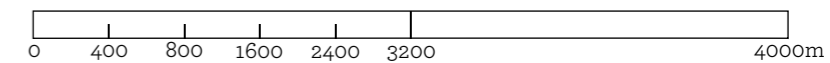


MIDDLE CORRIDOR

UPPER CORRIDOR



1:40000



Source: Design team diagram over flood and tributary data supplied by ICC.

3.3.1.5 WATERWAY HEALTH

The upper and middle reaches of the Bundamba Creek are largely ephemeral, supporting isolated pools in dry periods. The lower section of the waterway corridor is tidally influenced from the Bremer River and has a large number of stormwater outlets discharging directly into it.

Pollution sources in the catchment include industrial land uses, diffuse stormwater pollution from existing urban and rural land uses and sewer surcharges. Water quality monitoring along the Bundamba Creek corridor shows a decline in water quality generally from upstream to downstream.

Overall Bundamba Creek and its tributaries are in a moderately degraded state with gully and stream bank erosion limiting in-stream habitats. This can be attributed to limited riparian vegetation, uncontrolled stock access and highly dispersive soils.

Current instability along sections of the creek corridor within and downstream of the future Ripley Valley PDA could be exacerbated unless appropriate hydrologic controls are implemented as part of future urban development activities. Where practicable these hydrologic controls (e.g. detention basins) should be integrated within the urban footprint and co-located with diffuse pollution management controls.

Ensuring actions in the contributing catchment and within the creek corridor improve overall waterway health is a key function of the Corridor Plan.

Corridor Plan Principles

The following principles were identified to ensure waterway health along the creek corridor is improved:

- + Best practice erosion and sediment control will be adopted within all new developments to manage construction phase stormwater runoff.
- + Natural channel design principles as per Ipswich City Council's Waterway and Channel Rehabilitation Guidelines will be adopted to address existing creek erosion and mitigate impacts associated with new development.
- + Riparian vegetation will be enhanced to provide increased stability for the waterway corridor and to help support healthy creek environments.
- + Best practice Water Sensitive Urban Design principles will be adopted by all new development to manage stormwater discharges to the creek corridor (see also Flooding).
- + Where practicable, water quality improvement solutions will be retrofitted within existing urban areas to address current urban diffuse water pollution issues.

Legend

- Regional Business & Industry Buffer
- Recreation
- Conservation
- Waterway
- Catchment Outline
- Potential Location for Floodplain Revegetation
- Proposed Riparian Vegetation (100m wide corridor shown)
- Endangered Riparian
- Degraded Riparian

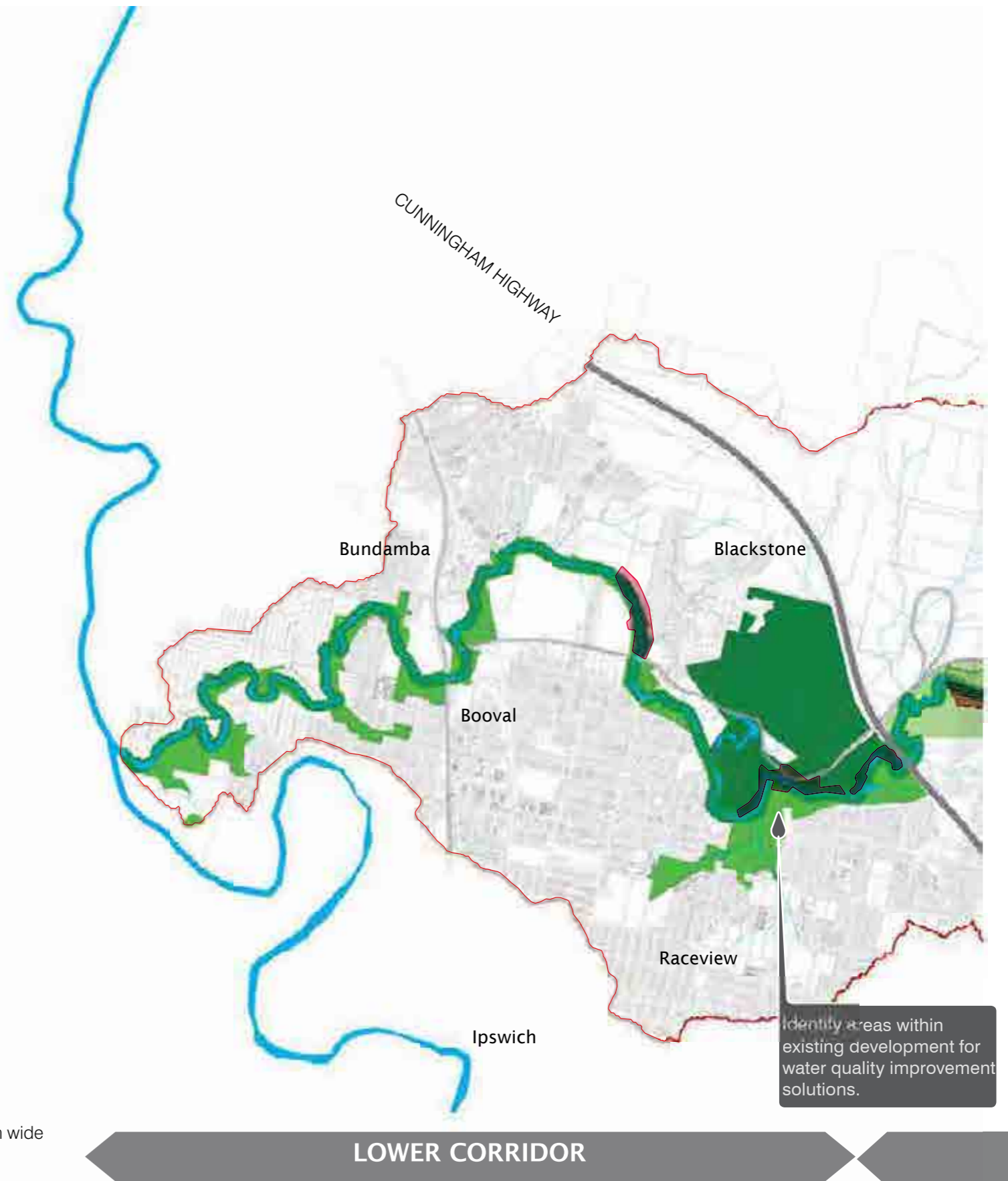
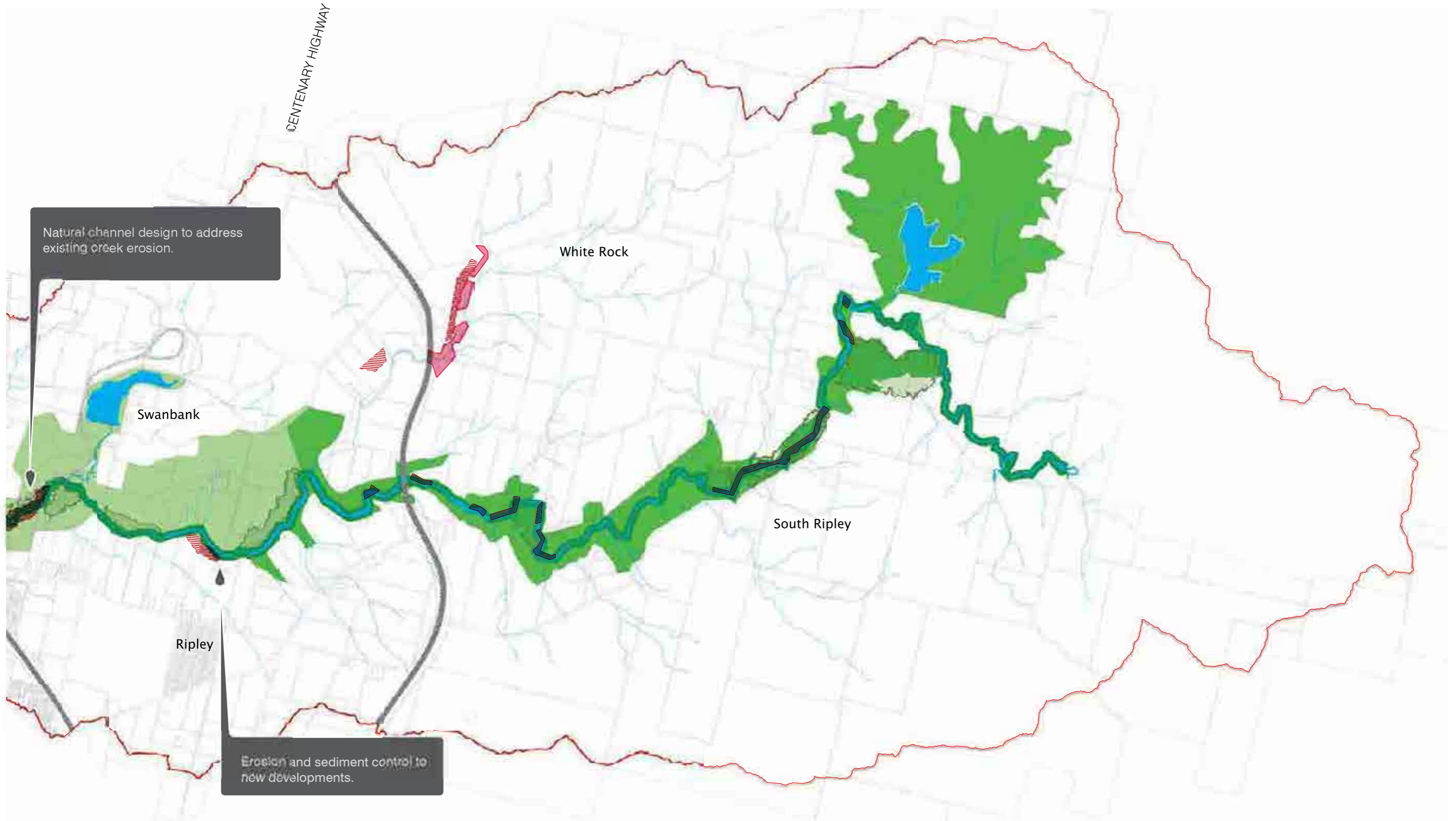


Figure 12. Bundamba Creek Corridor Waterway Health

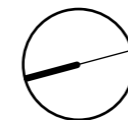


Natural channel design to address existing creek erosion.

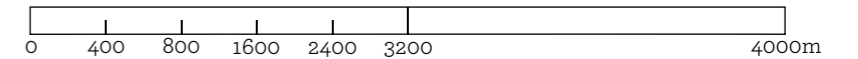
Erosion and sediment control to new developments.

MIDDLE CORRIDOR

UPPER CORRIDOR



1:40000



Source: Design team interpretation of vegetation mapping supplied by ICC. Note areas for Potential Location for Floodplain revegetation were notionally verified by on site ground truthing.

3.3.2.6 OPEN SPACE & RECREATION

The Bundamba Creek Corridor presents the opportunity to create a significant open space network within the context of an area of future significant urban growth. The lower reaches are representative of many urban creek corridors, set within urban environments, traversing established urban and commercial tenures interspersed with patchworks of local parks and linear open space edges.

The middle and upper reaches of the creek will be influenced by high levels of urban growth in the Ripley Growth corridor. This context provides opportunities to connect the established lower corridor with the broader open space network of the middle and upper corridor.

What is important within this planning mind-set; is to realise the exciting opportunity to explore beyond the 'business as normal' scenarios and develop urban systems that engender a positive contribution to a fully integrated network of active transport, public parks and natural areas that will also facilitate ecological and other enhancements. The key challenge will be the realisation of a Corridor Plan that is not simply a series of neighbourhoods that have an edge to Bundamba Creek, but rather a comprehensive and connected linear open space corridor re-imagining Bundamba Creek as the green heart of the Ripley Valley; in effect a 17km long parkland system.

When planning a park for the future, it was considered important to not only provide Ipswich's suite of code compliant population based needs facilities such as sports parks, but to also investigate the strength of building a regional scaled nature-based recreation corridor. This will connect the programmed park spaces and offer an experiential and ecological framework and provides a physical and thematic connection to the broader context.

The wider open space assets of Bundamba Creek's headwaters, the White Rock - Sprint Mt Conservation Estate and the Flinders-Goolman Conservation Estate provide important natural areas which incorporate walking trails and other nature based pursuits. Active transport connections to these areas from the creek corridor should be promoted where practical.

Through the middle reach, the creek traverses the planned Ripley Valley PDA. This extensive development area will eventually provide; civic parks, regional and district sporting parks, and recreational linear parklands within the open space corridor.

Along its lower reaches, the creek corridor is bordered by linear parks, sport fields, land set aside for conservation of cultural values (e.g. Evelyn Dodds Cultural Reserve) and open space for buffers to adjoining industrial land uses.

Achieving an integrated open space network that provides multiple user experiences and community benefits is a key driver for The Corridor Plan.

Corridor Plan Principles

The following principles were identified to ensure the creek corridor delivers a high degree of amenity and user experience:

- + The open space and recreation network along the creek corridor will be a connected, multi-values network allowing for ease of movement, exploration and improved ecological and habitat resilience.
- + Where practical, active transport links will be provided from the creek corridor into the surrounding Conservation Estates of White Rock - Spring Mountain and Flinders-Goolman.
- + The creek corridor will provide an important linear network between the existing and future residential areas in the catchment, providing cycle and pedestrian access to a diverse range of open space areas along the corridor.
- + Provides active transport links between neighbourhoods, centres and places of work.

Legend

- Regional Business & Industry Buffer
- Recreation
- Conservation
- Waterway
- Catchment Outline
- Local Recreation Parks
- Linear Parks
- Sports Grounds
- Planned Pedestrian Connections
- Planned Pedestrian Waterway Crossings
- Pedestrian Access Points

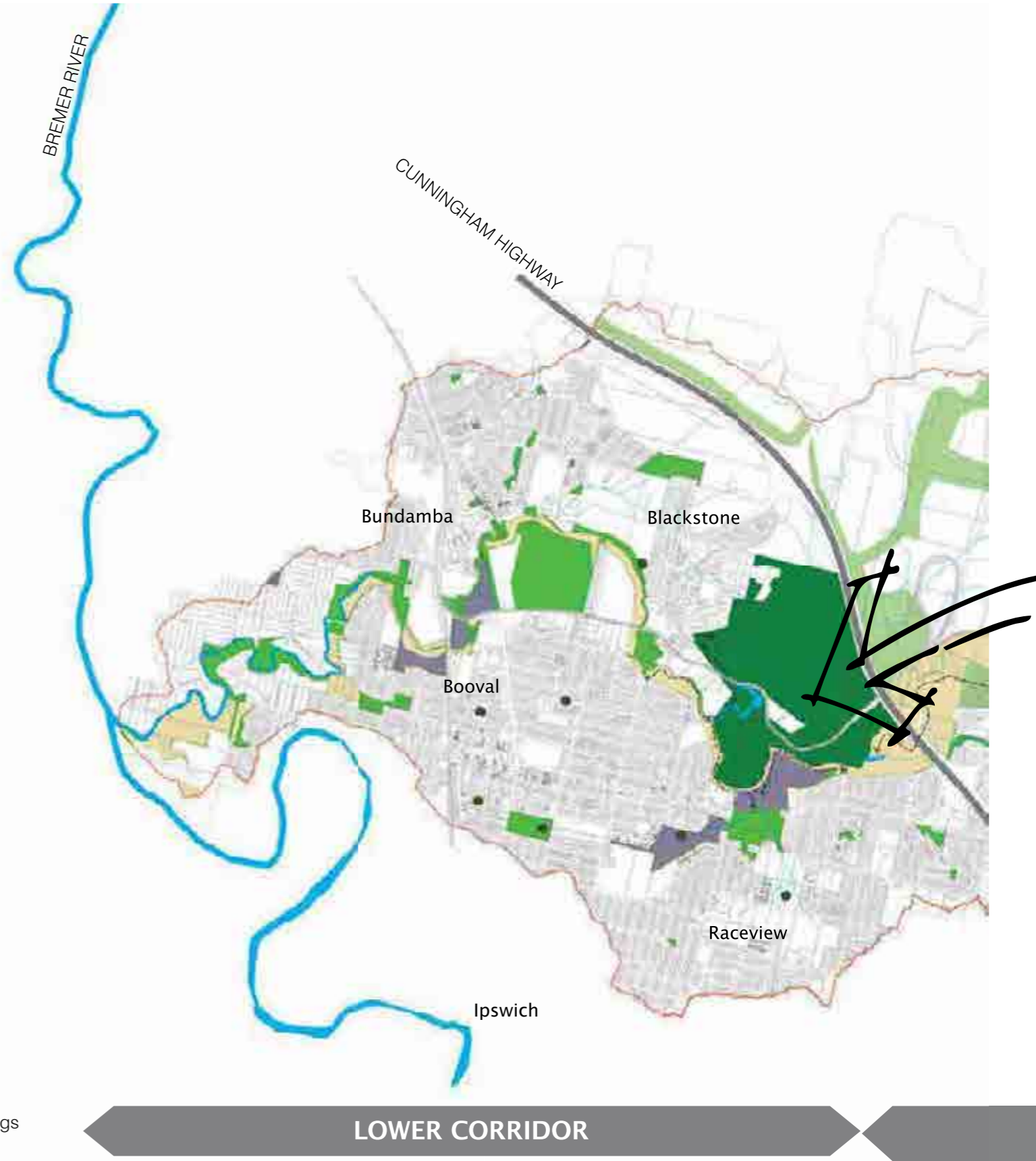
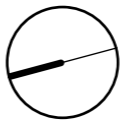


Figure 13. Bundamba Creek Corridor Open Space

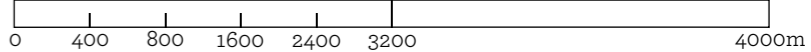


MIDDLE CORRIDOR

UPPER CORRIDOR



1:40000



Source: Design team interpretation of vegetation mapping supplied by ICC and that available from the EDQ web site.

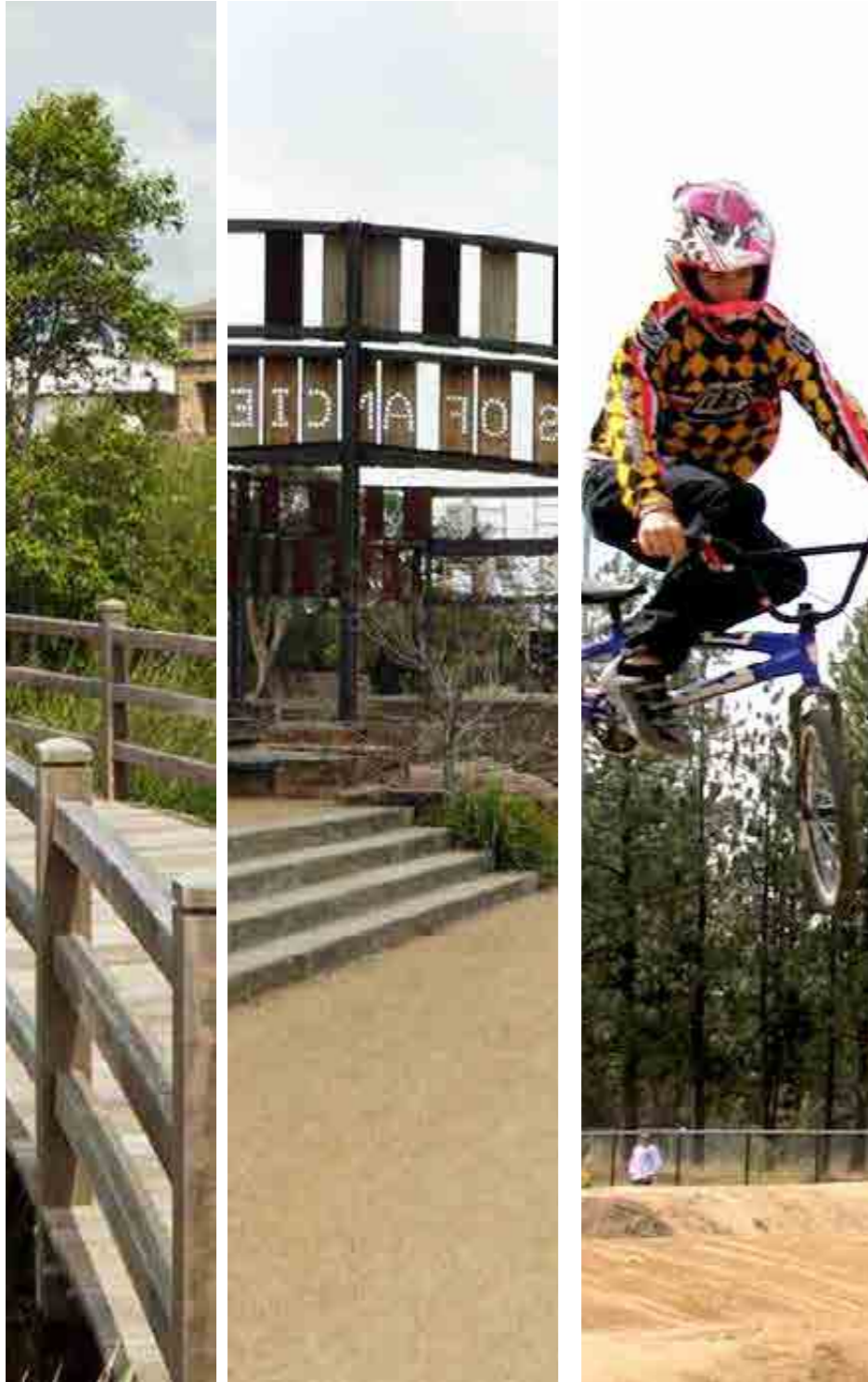


3.3 Synthesis of Opportunities

The process of developing the Corridor Plan involved application of the 'thematic' principles described in Section 3.3.1 and based on identified on-ground opportunities for integrated outcomes. The following sub-sections describe this process and provide the basis for the specific actions included in The Corridor Plan (Section 4).

3.3.1 Lower Corridor

Directional Focus: Community Connectivity



In the lower corridor area, a key motivation is to better connect local residents with the corridor in a meaningful and positive manner. Older residential areas are located along much of the lower corridor area and as such the corridor has a layered history of formal and informal uses including numerous playing fields.

Council has recently acquired land on Blackstone Hill for nature based recreational pursuits such as mountain biking. Linking this area to the creek corridor via a connecting shared use pathway network would enhance both access to and use of Blackstone Hill.

Native vegetation communities (Queensland Blue Gum) occur in a thin strip along the creek corridor and floodplain wetlands occur within the Evelyn-Dodds Cultural Reserve. These natural assets offer opportunities for improvement to enhance resilience and landscape amenity. Such improvements would require increasing the width and structure of the riparian corridor, having regard to the flood storage and conveyance requirements, and managing terrestrial and aquatic weeds. Resources to aid the riparian corridor improvements such as soil amendments, water and nutrients may potentially be sourced from local water cycle infrastructure in partnership with the responsible local water utility.

Existing areas of active bed and bank erosion along the creek channel will need to be arrested using appropriate natural channel design techniques. This will improve in-stream habitat and ecological health and ensure the integrity of riparian re-forestation is not undermined by channel avulsion or mass bank slumping.

Improving water quality entering the lower corridor area from adjoining land uses will improve waterway health and reduce pressure on the riparian corridor. To this end, a systematic program of strategic retrofit of stormwater management infrastructure within the sub-catchments draining to the lower corridor area should be undertaken as part of Ipswich City's longer term catchment management investment program. Disconnecting stormwater and directing these flows to the riparian corridor via dispersal swales / bioretention curtains rather than direct to the waterway channel allows for filtering of stormwater flows but can also provide passive irrigation to new riparian plantings. This also re-engages some key floodplain features (e.g. denitrification) through the local recharge of the shallow groundwater.

Improving the pathway network into and within the lower corridor area will enhance the use of the corridor for multiple benefits. A pathway network that better connects natural assets with other parkland uses and cultural sites such as Evelyn-Dodds Reserve would deliver a rich and diverse set of user experiences and associated benefits. A shared pathway network that builds on what is already in place and enhances north-south movement along the corridor is required. This would serve the functional requirement of movement and provide opportunity for environmental and cultural heritage education through way finding and other design responses. Importantly, any pathways into the Evelyn-Dodds Reserve should be considered in conversation with the Local Traditional Owners.

The planned extension of Robertson Road across the corridor near Evelyn-Dodds Reserve should make provision for north-south pedestrian and bicycle movement along the corridor and should avoid where practicable disturbance to the remnant wetlands within the Reserve. In addition impacts on water quality entering the wetlands and creek should also be avoided.

On the basis of the above description and synthesis of opportunities and constraints for the lower corridor area, the following key opportunities were identified for inclusion in the Corridor Plan:

- + Regenerate the riparian corridor along the creek line, creating bank stability, stormwater filtering, temporary storage of flood flows, and improved shade and amenity to the corridor.
- + The structure of the riparian vegetation will ensure flood conveyance and storage requirements are preserved.
- + Natural channel design will be implemented at sites with active channel erosion.
- + Cooperative management of floodplain wetlands within the Evelyn-Dodds Cultural Reserve as an on-going partnership between the Local Traditional Owners, Council and the Bremer River Fund.
- + Where feasible and practicable, strategic retrofit of stormwater treatment devices within existing urban sub-catchment to pre-treat stormwater entering the corridor.
- + Shared pathway network to improve movement into and along the corridor including better connecting ecological, cultural and recreational areas within and adjoining the corridor.
- + Evelyn-Dodds Cultural Reserve will be positioned as a cultural / interpretive beacon from which other trails, activities and events may springboard from.
- + The planned Robertson Road extension will contribute positively to the function and amenity of the corridor through improved access opportunities, offset planting activities, and demonstrations of environmentally appropriate design.

3.3.2 Middle Corridor

Directional Focus: Integrated Precinct Wetlands and Sports Grounds (south of Centenary Highway) and Regional Open Space (north of Centenary Highway)



The majority of the middle corridor area interfaces with planned future urban neighbourhoods and town centre of the Ripley Valley PDA. This section of the corridor will play an important role in meeting the diverse open space needs of this large future resident and working community.

With the development boundary typically set well back from the creek to accommodate the passage of flood flows, there is typically ample room within the corridor to deliver an integrated open space offering including ensuring waterway stability and ecological protection and enhancement is delivered.

The Swanbank Power Station operated by the State Government owned Stanwell Corporation also adjoins the middle corridor area. Current considerations for the future use of the land owned by Stanwell Corporation adjoining the creek corridor may result in this land becoming available as it would not be required as a land buffer. If some of that land could be transferred to public ownership it would expand the potential of the corridor to deliver even more significant 'regional' scale recreational and nature based outcomes.

There are a number of low-lying areas of floodplain which present opportunities for regional stormwater treatment wetlands or floodplain vegetation. Existing areas of active bed and bank erosion along the creek channel will need to be arrested using appropriate natural channel design techniques. Ensuring future stormwater connections from the new development discharge to the floodplain rather than directly to the waterway channel can provide passive irrigation to new riparian plantings as part of these channel works and also re-engages some key floodplain features (e.g. denitrification) through the local recharge of the shallow groundwater.

On the basis of the above description and synthesis of opportunities for the middle corridor area, the following key actions were identified for inclusion in The Corridor Plan:

- + A minimum 100m wide riparian corridor could be regenerated along the creek line, creating bank stability, stormwater filtering, temporary storage of flood flows, and improved shade and amenity to the corridor.
- + Natural channel design will be implemented at sites with active channel erosion.
- + Retained wetlands will be protected and enhanced and where desirable connected to the recreational trail network.
- + A continuous recreation trail will be provided along Bundamba Creek with linkages into adjoining future residential neighbourhoods, the Ripley Town Centre and connecting 'nodes' of active recreation.
- + An active transport link from the corridor to the trails within the nearby Conservation Estates will be considered as part of the active transport planning for adjoining urban development areas.
- + Position of proposed new sports fields to service adjoining urban development areas will be investigated to avoid impedance to existing overland flow paths.

- + Nature based active and passive recreation will act as a transition area between industrial uses east of the creek corridor and the planned new Ripley Town Centre.
- + Best practice erosion and sediment controls will be employed by all new urban development.
- + The Type 1 (within development) stormwater management approach described in Section 5 of this report should be employed as the default by all new urban development.
- + The Type 2 (regional system) stormwater management approach described in section 5 of this report is a potential option at a few select locations where preliminary high level assessments have identified the potential for constructed stormwater wetlands to be integrated within the open space corridor.

3.3.3 Upper Corridor

Directional Focus: Riparian Forest



The upper corridor area represents a potential arrangement for re-forested floodplains to help manage waterway condition in this area and further downstream through stormwater filtration and the slowing and temporary storage of flood flows emanating from the upper catchment.

The timing of planned urban growth in this area is tempered by the pragmatics and costs of servicing the area with water, sewer, roads and power. With this appreciation, the motivation to re-forest the broad floodplains and restore the riparian vegetation in the short term is to ensure concurrent investments being made downstream in the middle and lower corridor areas are less impacted by flood flows and poor water quality (particularly sediments) emanating from the upper catchment.

Riparian re-forestation in the upper corridor area will enhance local and regional biodiversity particularly given the proximity of the corridor to the nearby regional Conservation Estates of White Rock - Spring Mountain and Flinders-Goolman. It will also improve the overall amenity of the corridor for community uses including walking and cycling trails along the creek corridor providing shade and visual amenity.

Active transport links from the creek corridor to walking trails in the nearby Conservation Estates should be considered in the planning and approval of adjoining urban development areas.

Existing areas of active bed and bank erosion along the creek channel will need to be arrested using appropriate natural channel design techniques. This will be important to ensure the integrity of riparian re-forestation is not undermined by channel avulsion or mass bank slumping.

Resources to aid the re-forestation program such as soil amendments, water and nutrients may potentially be sourced from local water cycle infrastructure in partnership with Queensland Urban Utilities.

The upper corridor may continue to support economically viable rural endeavours prior to future urban development and as such it will be prudent to consider alternatives for cattle to access water in lieu of entering the creek corridor which is adding to current waterway instability and erosion. Options for access to alternative water supplies or restricted access measures to the creek for stock watering will need to be investigated in partnership with land owners.

With the focus on riparian re-forestation in the upper corridor, it will be important for adjoining urban development areas to manage stormwater quantity and quality entirely within the development footprint and not within the corridor. This will involve all new development employing best practice erosion and sediment controls during construction and the Type 1 stormwater management approach described in Section 5 of this report. Ensuring future stormwater connections from the new development discharge to the floodplain rather than directly to the waterway channel can provide passive irrigation to new riparian plantings and also re-engages some key floodplain features (e.g. denitrification) through the local recharge of the shallow groundwater.

The passage of overbank flows is also important in the upper corridor in areas where breakout flows from contributory streams and the main creek channel access 'flood runners' in the floodplain to relieve stream pressure on the main channel. One particular location where this appears to be an issue is the current location proposed for regional sports fields in the open space planning for the Ripley Valley PDA. The final siting of these playing fields and their design will need to allow for the passage of periodic overland flows in order to avoid potential waterway stability impacts in the main creek channel should the overland flow path be impeded.

On the basis of the above description and synthesis of opportunities and constraints for the upper corridor area, the following key opportunities were identified for inclusion in The Corridor Plan:

- + A minimum 100m wide riparian corridor will be regenerated along the creek line, creating bank stability, stormwater filtering, temporary storage of flood flows, and improved shade and amenity to the corridor.
- + Natural channel design will be implemented at sites with active channel erosion.
- + A continuous recreation trail will be provided along Bundamba Creek with linkages into adjoining future residential neighbourhoods and connecting 'nodes' of active recreation.
- + An active transport link from the corridor to the trails within the nearby Conservation Estates will be considered as part of the active transport planning for adjoining urban development areas.
- + Position of proposed new sports fields to service adjoining urban development areas will be investigated to avoid impedance to existing overland flow paths.
- + Best practice erosion and sediment controls and the Type 1 stormwater management approach will be employed by all new urban development.

4.0 The Corridor Plan

The Corridor Plan represents a long term transformative plan to deliver on the vision for the Bundamba Creek Corridor set down by the Bundamba Creek Think Tank. It reflects the aspirational themes and guiding principles identified though the master planning process.

The Corridor Plan is a schematic representation of actions and interventions that demonstrate how the Bundamba Creek Corridor may be transformed into a resilient creek system of high ecological and community value over time.

The Corridor Plan is presented herein as:

Corridor Plan

An overall integrated plan for the corridor (Corridor Plan)



(Refer Report Pg 34-35)

(Refer Report Pg 36-37)

Corridor Plan Detailed Areas

Three key planning area plans (Corridor Plan Detail Plans) to provide more resolution where it is needed.



Location Plan
(Refer Report Pg 38-45)























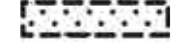


Corridor Plan Illustrative Sections

A series of locational cross-sections (Corridor Plan Sections)



(Refer Report Pg 46-55)

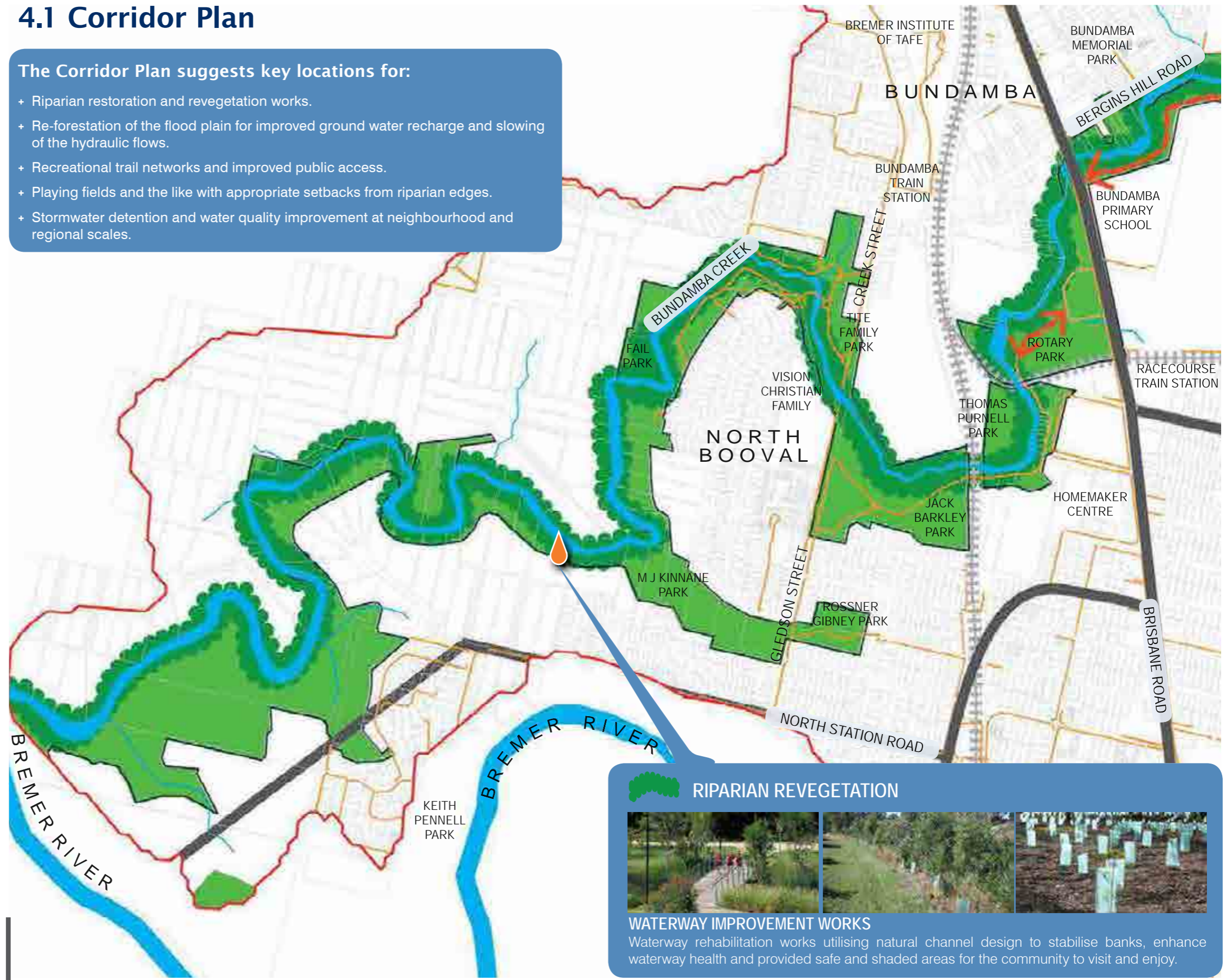
DRAWING KEY

-  Bundamba Creek Corridor Outline
-  Catchment Boundary
-  Investigation Area
-  Heritage Node
-  Regional Business & Industry Buffer
-  Recreation
-  Conservation
-  Waterway
-  Riparian Protection/Enhancement (50m from top of bank both sides of channel)
-  Cadastre (Refer ICC Mapping)
-  Pedestrian Footpaths (Refer ICC Mapping)
-  Existing Railway Line (Refer ICC Mapping)
-  Major Roadways
-  Planned Roadways
-  Proposed Regional Shared User Path
-  Planned Pedestrian Waterway Crossings
-  Planned Railway Line
-  Planned Cycle Way
-  Existing Water Bodies to be Protected
-  Potential Location for Regional Recreation
-  Potential Location for Floodplain Revegetation
-  Potential Location for Regional Stormwater Treatment Wetland
-  Sub-catchment Stormwater Management Type 1: Hydrology Management (flooding and waterway stability) and water quality management to be provided at or upstream of this location.
-  Sub-catchment Stormwater Management Type 2: Hydrology (flooding and waterway stability) to be provided at or upstream of this location.
-  Planned Recreation Sports Fields (based on available information as at FEB 2014)

4.1 Corridor Plan

The Corridor Plan suggests key locations for:

- + Riparian restoration and revegetation works.
- + Re-forestation of the flood plain for improved ground water recharge and slowing of the hydraulic flows.
- + Recreational trail networks and improved public access.
- + Playing fields and the like with appropriate setbacks from riparian edges.
- + Stormwater detention and water quality improvement at neighbourhood and regional scales.

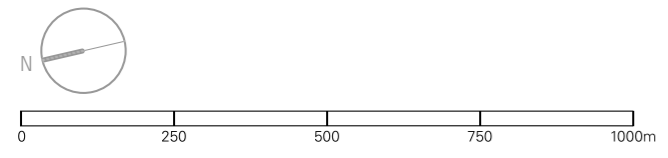


RIPARIAN REVEGETATION



WATERWAY IMPROVEMENT WORKS
 Waterway rehabilitation works utilising natural channel design to stabilise banks, enhance waterway health and provided safe and shaded areas for the community to visit and enjoy.

COMMUNITY CONNECTIVITY
LOWER CORRIDOR





POTENTIAL REGIONAL OPEN SPACE NETWORK
 Blackstone Hill (East of Evelyn Dodds Cultural Reserve) offers the ideal stepping stone for the growth of the nature based open space precinct.

WATER QUALITY OFFSETTING SITES
 Opportunity to utilise flood prone land to provide water quality improvement for the catchment as well as provide ecological habitat.



CULTURAL CONNECTIONS
 Evelyn Dodds Cultural Reserve marks the start of the cultural experience / journeyIt is here that the site's storey and meaning can be well crafted and set the scene for the journey beyond (refer principals text).

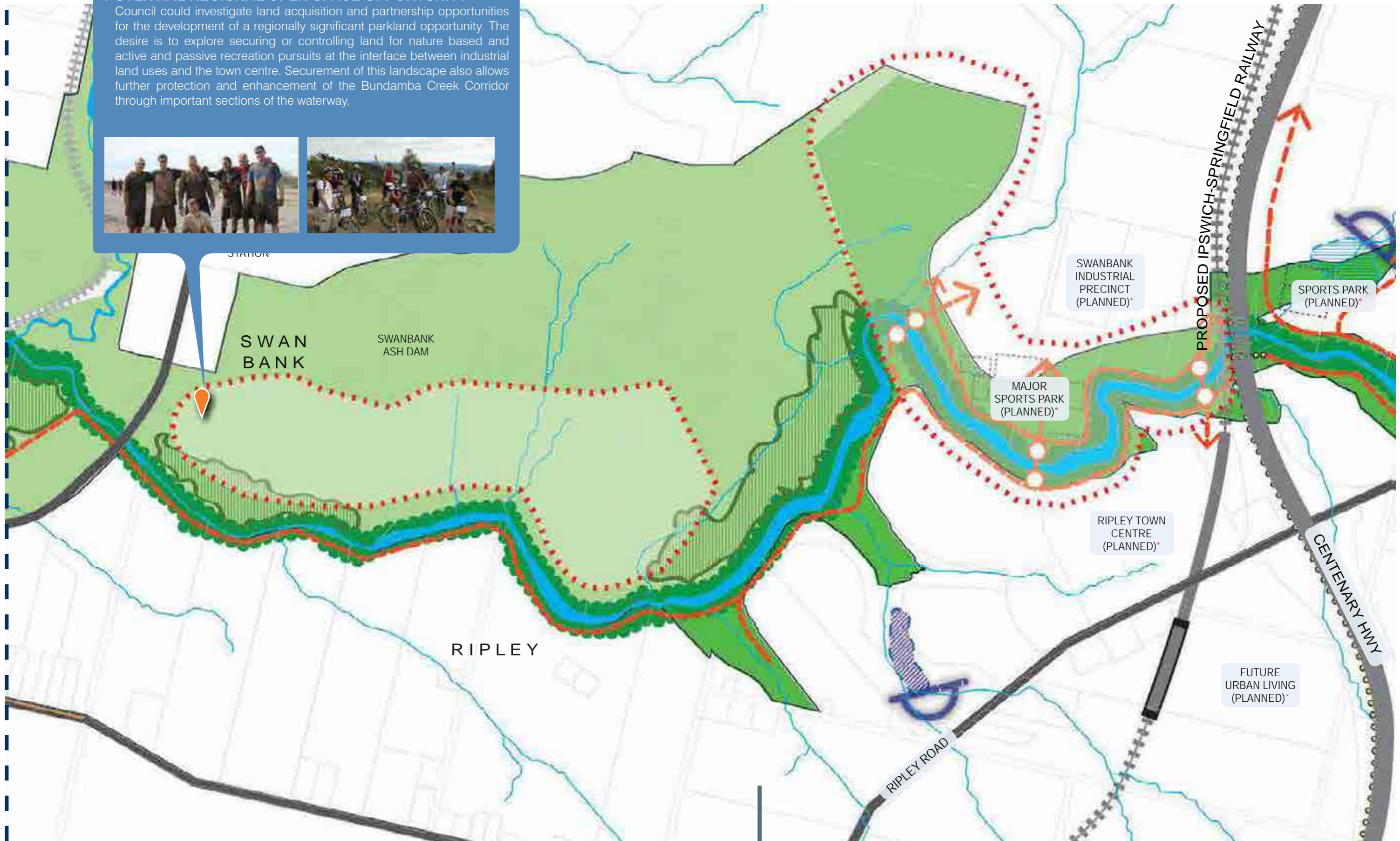
CONNECTED COMMUNITIES
 Consider utilising the existing rail easement / corridor to physically connect communities on either side of the Cunningham Highway.

COMMUNITY CONNECTIVITY
 LOWER CORRIDOR

REGIONAL OPEN SPACE
 MIDDLE CORRIDOR

POTENTIAL REGIONAL OPEN SPACE OPPORTUNITY

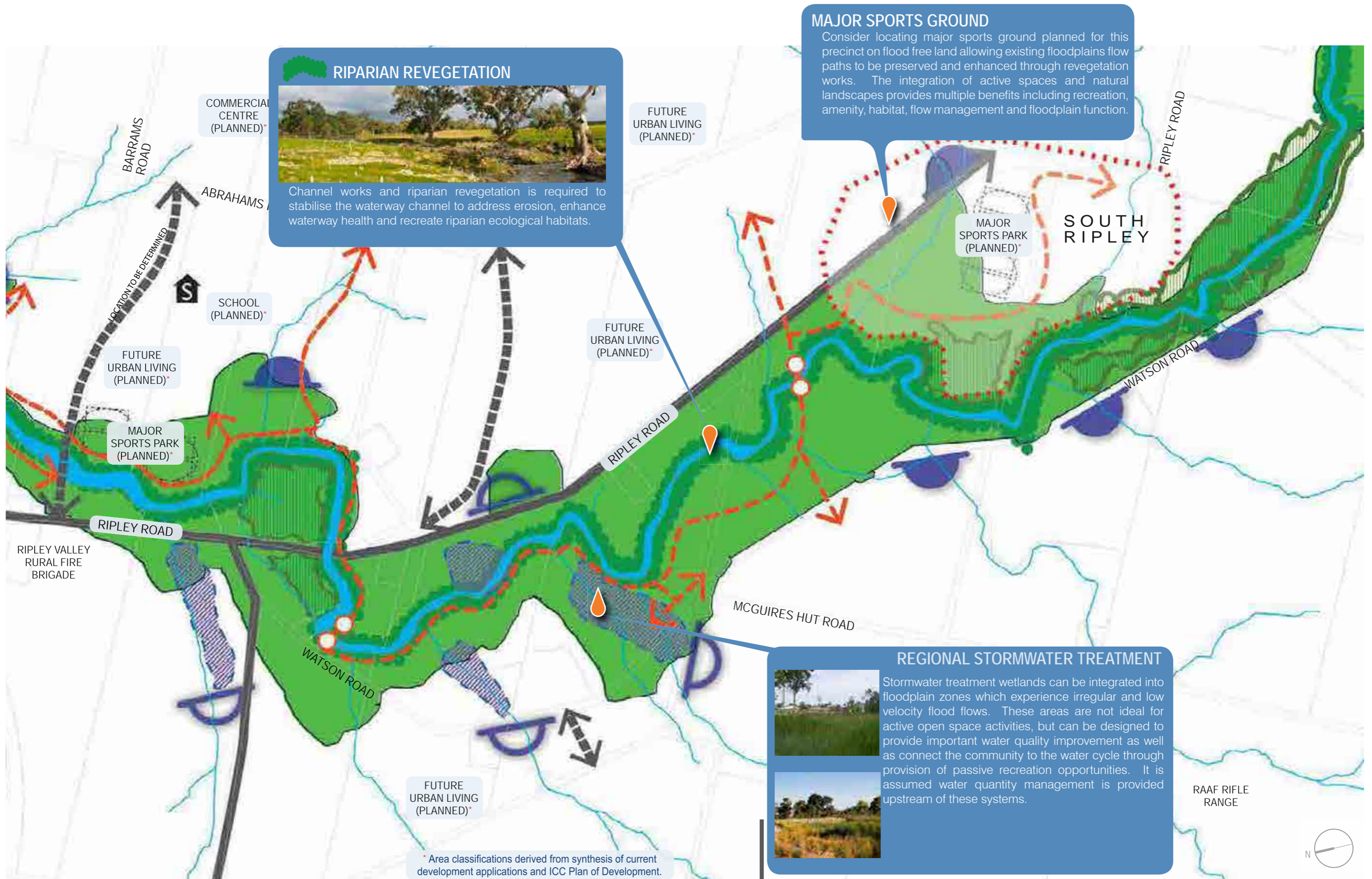
Council could investigate land acquisition and partnership opportunities for the development of a regionally significant parkland opportunity. The desire is to explore securing or controlling land for nature based and active and passive recreation pursuits at the interface between industrial land uses and the town centre. Securement of this landscape also allows further protection and enhancement of the Bundamba Creek Corridor through important sections of the waterway.



REGIONAL OPEN SPACE

INTEGRATED PRECINCT WETLANDS & SPORT GROUNDS

M I D D L E C O R R I D O R



RIPARIAN REVEGETATION



Channel works and riparian revegetation is required to stabilise the waterway channel to address erosion, enhance waterway health and recreate riparian ecological habitats.

MAJOR SPORTS GROUND

Consider locating major sports ground planned for this precinct on flood free land allowing existing floodplains flow paths to be preserved and enhanced through revegetation works. The integration of active spaces and natural landscapes provides multiple benefits including recreation, amenity, habitat, flow management and floodplain function.

REGIONAL STORMWATER TREATMENT



Stormwater treatment wetlands can be integrated into floodplain zones which experience irregular and low velocity flood flows. These areas are not ideal for active open space activities, but can be designed to provide important water quality improvement as well as connect the community to the water cycle through provision of passive recreation opportunities. It is assumed water quantity management is provided upstream of these systems.

* Area classifications derived from synthesis of current development applications and ICC Plan of Development.

RIPARIAN FOREST
UPPER CORRIDOR

4.2 Corridor Plan Detailed Areas

Detailed Areas Reference Plan

The detail plans highlighted herein, represent a more in depth review of how outcomes offered within the Corridor Plan may be realised within each sub-corridor area. These are illustrative in nature and provide an indicative spatial arrangement for future planning and design projects to develop further. Further information has been provided within the illustrative sections (pg 46-53).



KEY PLAN



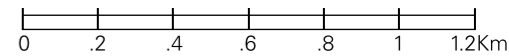
AREA 2

Refer Detailed Area 2 (p43)



AREA 3

Refer Detailed Area 3 (p45)



Area 1

In the lower corridor area, a key motivation is to better connect local residents with the corridor in a meaningful and positive manner. Older residential areas are located along much of the lower corridor area and as such the corridor has a layered history of formal and informal uses including numerous playing fields.

Council has recently acquired land on Blackstone Hill for nature based recreational pursuits such as mountain biking. Linking this area to the creek corridor via a connecting shared use pathway network would enhance both access to and use of Blackstone Hill.

Key actions to enhance 'community connectivity' in this area include:

KEY PLAN



PROPOSED ACTION	OUTCOMES
1 Develop masterplan from Cunningham Hwy to Mary St (including Evelyn Dodds Cultural Reserve and South Station Road wetlands)	<ul style="list-style-type: none"> + Develop masterplan from Cunningham Hwy to Mary St (including Evelyn Dodds Cultural Reserve). + Provide over arching vision and long term management strategies for the site
2 Pursue with DTMR rail connection under Cunningham Hwy	<ul style="list-style-type: none"> + Improve access to site + Unlock North-South recreation corridor
3 Investigate opportunities for riparian corridor regeneration along creek line through community plantings, parkland enhancements and potential offsets. It is important that these works preserve flood conveyance and storage requirements.	<ul style="list-style-type: none"> + Provide bank stability + Provide stormwater filtering + Provide temporary storage and overflow areas for storm and flood events + Improve shade and amenity of the corridor + Fit-for-purpose use of water
4 Where active erosion exists, design and implement natural channel design	<ul style="list-style-type: none"> + Reduce erosion + Provide bank stability + Provides in-stream habitat
5 Establish a collaborative partnership between the Local Traditional Owners, Council and the Bremer River Fund	+ Create an on-going management strategy for the floodplain wetlands within the Evelyn-Dodds Cultural Reserve
6 Investigate opportunities to retrofit existing stormwater treatment devices within urban sub-catchment, including identification of pollutant hot spot areas which require priority treatment and also suitable locations for water quality offset projects.	<ul style="list-style-type: none"> + Pre-treat stormwater entering the corridor + Improve waterway health + Reduce nutrient and pollutant loads
7 Further planning and design development to inform implementation of key wetland offset projects, including understanding of costs, treatment benefits and potential delivery pathways	<ul style="list-style-type: none"> + Enhance floodplain ecological function + Provide stormwater filtering + Provide temporary storage and overflow areas for storm and flood events + Improve waterway health and reduce nutrient and pollutant loads + Transparent offset delivery
8 Provide new and enhance existing shared pathway network through integrated network planning and design project	<ul style="list-style-type: none"> + Improve movement into and along corridor + Improve connectivity of ecological, cultural and recreational areas within and adjoining the corridor
9 Create identity of Evelyn-Dodds Cultural Reserve as a cultural / interpretive beacon	+ Catalyst from which other trails, activities and events may develop
10 Check status of Roberston Rd project (attempt to integrate project) from strategic investment and urban design perspectives.	<ul style="list-style-type: none"> + Improve function and amenity of the corridor + Improve access and North - South pedestrian movement + Environmentally appropriate design exemplar



BLACKSTONE

CUNNINGHAM HWY

MARY STREET

THOMAS STREET

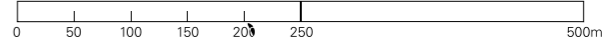
SEALY STREET

SOUTH STATION ROAD

ROBERTSON ROAD

SOUTH STATION ROAD

Refer Illustrative Section (p46-47)



Area 2

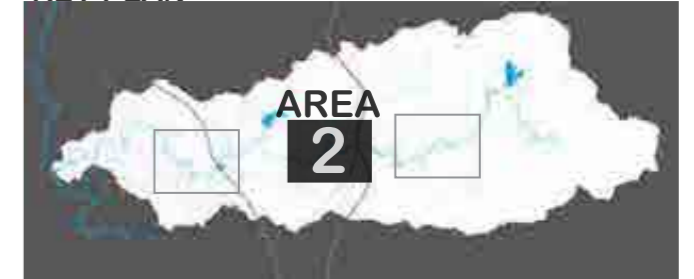
The middle corridor area contains some of the more intact areas of riparian vegetation, particularly in the vicinity of Swanbank where the geological setting has contained creek erosion and buffer land to the Power Station has avoided widespread vegetation clearing. Floodplain wetlands at this location also offer opportunity for improvement for biodiversity and water quality benefits.

A key focus for the corridor at this location is to protect and enhance the existing values of the corridor for ostensibly ecological benefits. A north-south shared pathway link would provide access to the natural assets at this location making them accessible for passive and active nature based recreational uses where appropriate.

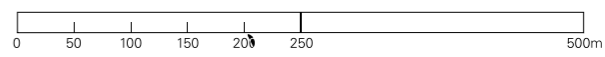
Key open space areas are also provided within this area of the corridor. These areas require careful consideration and planning to ensure they can incorporate the required community infrastructure while also preserving overland flow paths and a stable and vegetated riparian corridor.

Key actions to ensure 'Integrated open space and water management' in this area include:

KEY PLAN



PROPOSED ACTION	OUTCOMES
1 Negotiate with private developer to ensure design of new recreational sport field(s) and facilities can meet ICC's desired standards of service, are outside of the riparian corridor and avoid impedence for existing overland flow paths, while being delivered in a manner that compliments the natural aesthetics of the creek corridor.	<ul style="list-style-type: none"> + Provide new suitable sport facilities for the adjoining urban developments + Retain existing function and capacity of the creek and riparian corridor
2 Investigate nature based active and passive recreation opportunities between industrial uses east of the creek corridor and the planned new Ripley Town Centre	<ul style="list-style-type: none"> + Create a buffer between industrial land use and new town centre
3 Consider possibilities for active transport links from and within the broader network	<ul style="list-style-type: none"> + Increase urban amenity + Increase value of urban development areas + Provide connected active transport network
4 Provide a continuous recreation trail along Bundamba Creek	<ul style="list-style-type: none"> + Create linkages to adjoining future residential neighbourhoods + Create linkages to the Ripley Town Centre + Create linkages to active recreation nodes
5 Identify appropriate riparian corridor widths and waterway design requirements (e.g. natural channel design guidelines) to inform riparian regeneration and waterway works along the corridor	<ul style="list-style-type: none"> + Provide bank stability + Provide stormwater filtering + Improve shade and amenity of the corridor + Provide temporary storage and overflow areas for storm and flood events + Improve habitat value + Provide clarity to stakeholders about riparian corridor and waterway design expectations from Council
6 Identify location and attributes of retained wetlands and overland flow paths to encourage their protection and enhancement during future development of the corridor	<ul style="list-style-type: none"> + Reduce project costs + Protect and enhance ecological function + Maintain existing hydrology and habitats + Preserve and enhance existing community and natural assets
7 Ensure all new developments design and employ best practice erosion and sediment controls	<ul style="list-style-type: none"> + Reduce impact of new developments upon Bundamba Creek and riparian corridor + Reduce nutrient and sediment loads
8 Use Type 1 stormwater management approach as the default for all new urban developments	<ul style="list-style-type: none"> + Provide stormwater management
9 Consider Type 2 stormwater management approach as a potential option in select locations where preliminary high level assessments have identified the potential for constructed stormwater solutions (such as stormwater treatment wetlands) to be integrated within the open space corridor	<ul style="list-style-type: none"> + Provide alternative stormwater management strategies + Integrate stormwater management facilities within the open space corridor + Preserve and enhance existing floodplain ecosystem services
10 Investigate opportunity for Swanbank Parkland	<ul style="list-style-type: none"> + Provide additional open space to showcase best practice urban and ecological design + Identify opportunities for partnership and investment opportunities to capitalise on potential regionally significant open space outcomes

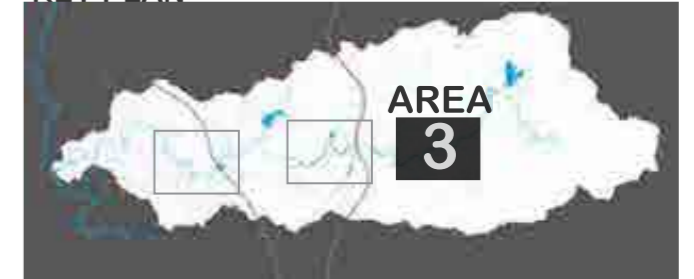


Area 3

The upper corridor area represents a potential arrangement for re-forested floodplains to help manage waterway condition in this area and further downstream through stormwater filtration and the slowing and temporary storage of flood flows emanating from the upper catchment.

Key actions to deliver a 'Riparian Forest' in this area include:

KEY PLAN



INVESTIGATION AREA

	PROPOSED ACTION	OUTCOMES
1	Identify potential extent and design requirements to regenerate riparian vegetation along the corridor in this area to re-establish floodplain habitats and flood storage	<ul style="list-style-type: none"> + Provide bank stability + Provide stormwater filtering + Provide temporary storage and overflow areas for storm and flood events
2	Restrict cattle access to waterway and identify areas of active erosion which require rehabilitation (ideally using natural channel design)	<ul style="list-style-type: none"> + Reduce erosion
3	Negotiate with private developer to ensure design of new recreational sport field(s) and facilities are outside of the riparian corridor and avoid impedence for existing overland flow paths, while being delivered in a manner that compliments the natural aesthetics of the creek corridor and meets ICC's desired standards of service.	<ul style="list-style-type: none"> + Provide new sport facilities for the adjoining urban developments + Retain existing function and capacity of the creek and riparian corridor
4	Ensure all new developments design and employ best practice erosion and sediment controls	<ul style="list-style-type: none"> + Reduce impact of new developments upon Bundamba Creek and riparian corridor
5	Use Type 1 stormwater management approach as the default for all new urban developments	<ul style="list-style-type: none"> + Reduce nutrient and sediment loads + Provide best practice stormwater management
6	Provide a continuous recreation trail along Bundamba Creek	<ul style="list-style-type: none"> + Create linkages to adjoining future residential neighbourhoods + Create linkages to active recreation nodes
7	Consider possibilities for active transport links from the corridor to the trails within nearby Conservation Estates	<ul style="list-style-type: none"> + Increase urban amenity + Increase value of urban development areas + Provide connected active transport network



RIPLEY ROAD

WATSON ROAD

PLANNED DEVELOPMENT TO FUTURE DETAIL

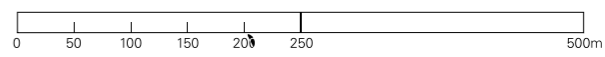
PLANNED DEVELOPMENT TO FUTURE DETAIL

PLANNED DEVELOPMENT TO FUTURE DETAIL

PLANNED DEVELOPMENT TO FUTURE DETAIL

PLANNED DEVELOPMENT TO FUTURE DETAIL

Refer Illustrative Section (p52-53)



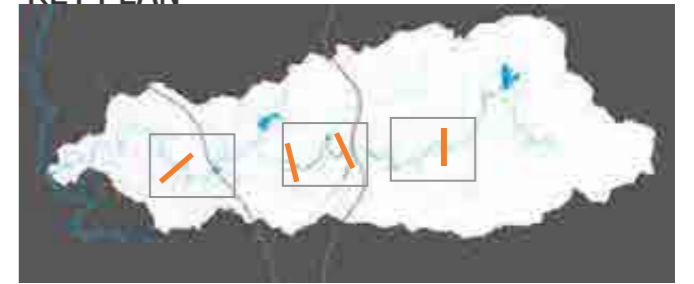
4.3 Corridor Plan Illustrative Sections

Section Areas Reference Plans

The Corridor Plan illustrative sections herein, represent a more in depth review of how actions identified within the Detail Plans may be realised within each sub-corridor area. These are illustrative in nature and provide an indicative spatial arrangement for future planning and design projects to develop further.



KEY PLAN



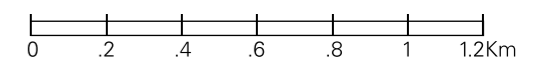
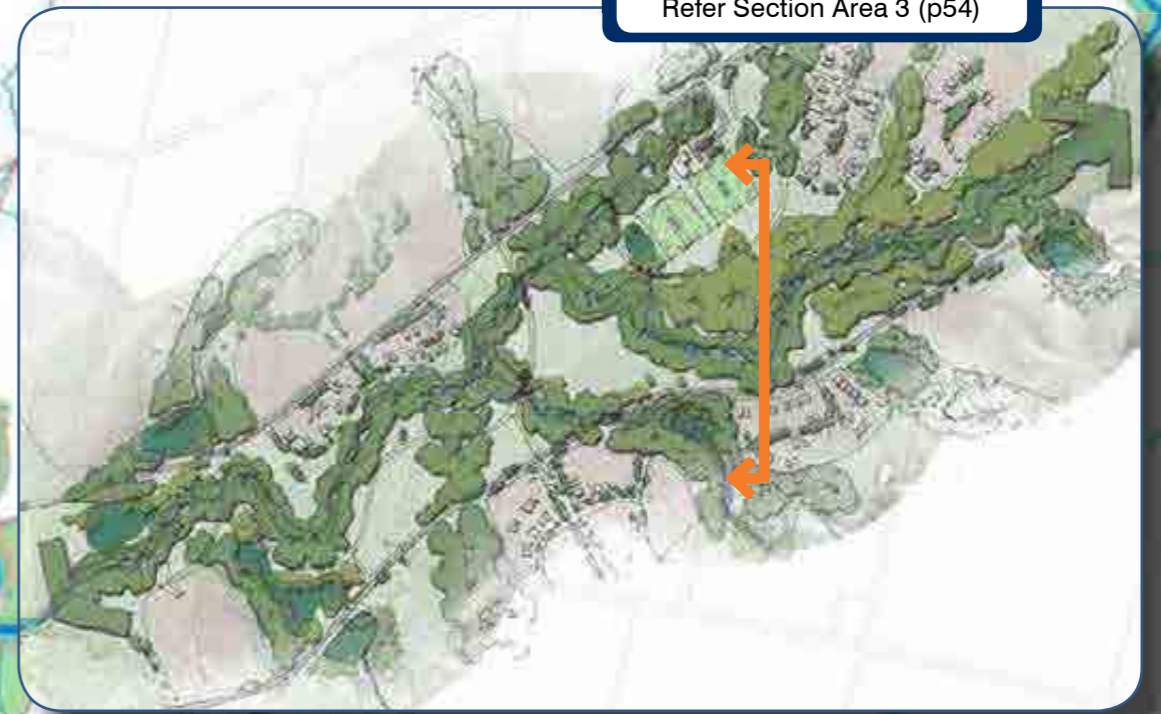
AREA 2

Refer Section Area 2 (p50,52)



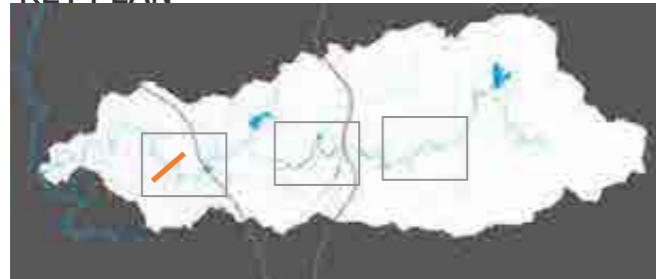
ARFA 3

Refer Section Area 3 (p54)



SECTION AREA 1

KEY PLAN



Corridor Objectives Icon Key

These illustrative sections utilise the icons developed for the Bundamba Creek Corridor Plan to represent how the objectives may operate at a site scale.



Working as One



Embracing the Environment



We all Benefit



Making it Happen

REFERENCE PLAN





Improve access as well as movement into and along the corridor by enhancing existing and providing new shared pathways.



Regenerate riparian vegetation in order to increase shade and amenity of the corridor while also providing bank stability, stormwater filtering, temporary storage and overflow areas for storm and flood events, fit-for use water.



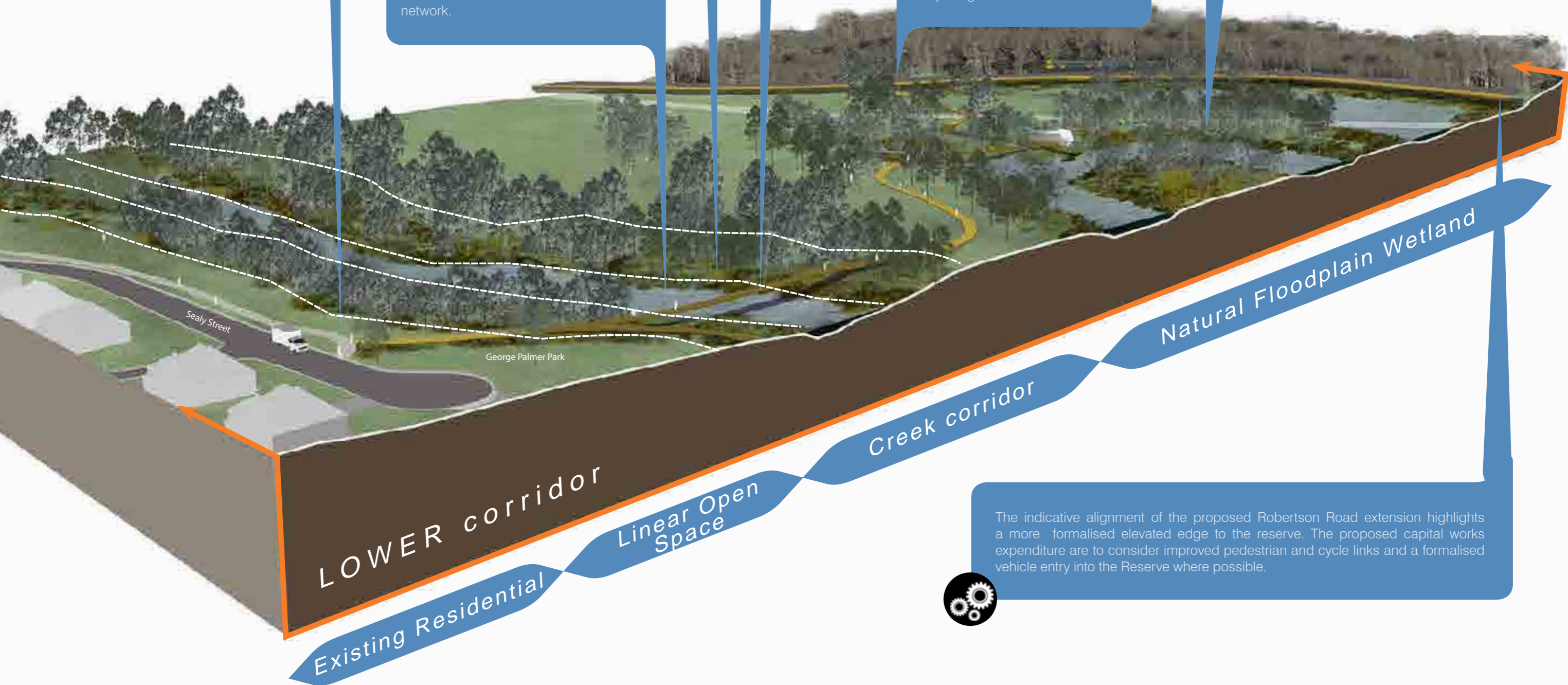
Create identity of Evelyn-Dodds Cultural Reserve as a cultural / interpretive beacon that will become a catalyst from which other trails, activities and events may develop.



Provide new active transport links to increase access to site and improving the connectivity of ecological, cultural and recreational areas within and adjoining the corridor.



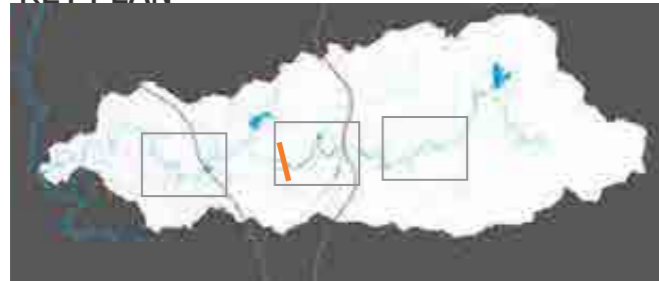
Create an on-going management strategy for the floodplain wetlands within the Evelyn-Dodds Cultural Reserve, in collaboration with the Local Traditional Owners, Council and the Bremer River Fund.



The indicative alignment of the proposed Robertson Road extension highlights a more formalised elevated edge to the reserve. The proposed capital works expenditure are to consider improved pedestrian and cycle links and a formalised vehicle entry into the Reserve where possible.

SECTION AREA 2

KEY PLAN



Corridor Objectives Icon Key

These illustrative sections utilise the icons developed for the Bundamba Creek Corridor Plan to represent how the objectives may operate at a site scale.



Working as One



Embracing the Environment



We all Benefit

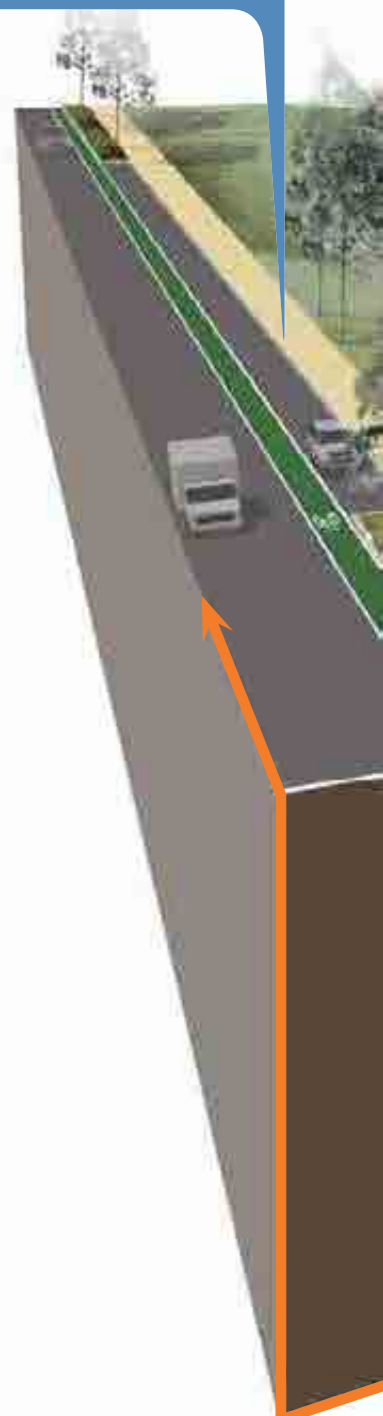


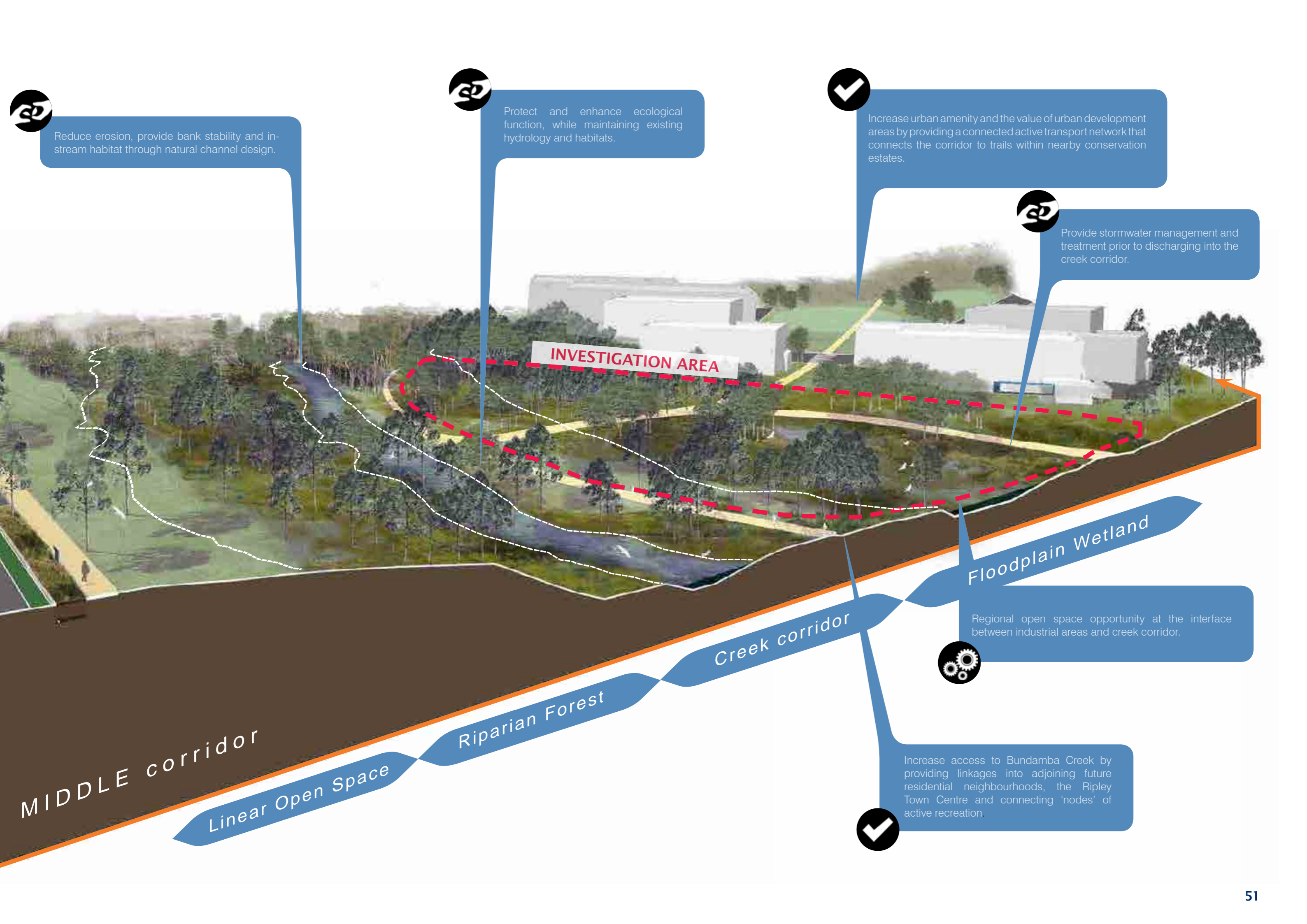
Making it Happen

REFERENCE PLAN



Provide stormwater management and filtration prior to entering waterway.





Reduce erosion, provide bank stability and in-stream habitat through natural channel design.



Protect and enhance ecological function, while maintaining existing hydrology and habitats.



Increase urban amenity and the value of urban development areas by providing a connected active transport network that connects the corridor to trails within nearby conservation estates.



Provide stormwater management and treatment prior to discharging into the creek corridor.

INVESTIGATION AREA

Floodplain Wetland



Regional open space opportunity at the interface between industrial areas and creek corridor.

Creek corridor

Riparian Forest

Linear Open Space

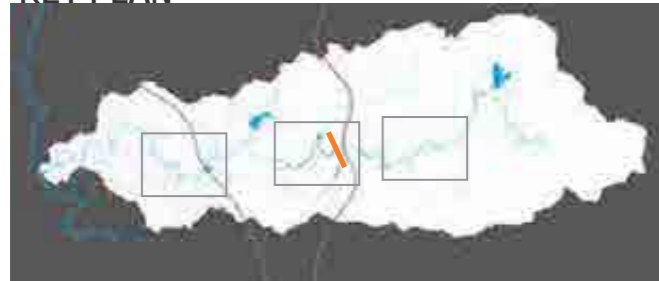
MIDDLE corridor



Increase access to Bundamba Creek by providing linkages into adjoining future residential neighbourhoods, the Ripley Town Centre and connecting 'nodes' of active recreation.

SECTION AREA 2

KEY PLAN



Corridor Objectives Icon Key

These illustrative sections utilise the icons developed for the Bundamba Creek Corridor Plan to represent how the objectives may operate at a site scale.



Working as One



Embracing the Environment



We all Benefit



Making it Happen

REFERENCE PLAN





Improve connectivity by providing creek crossings.



Retain existing function and capacity of the creek and riparian corridor.



Formal Sports fields set back from top of bank to allow for 50m riparian vegetation to be achieved.



50m vegetation buffer between playing fields and top of bank.



Investigation area for the integrated design of new recreational sport field(s).



Reduce bank and stream erosion.

The existing terrain suggests that shared use paths may be consolidated within streetscape works rather than undertaking excessive bulk earthworks within the riparian corridor.

INVESTIGATION AREA

Open Space

Creek corridor

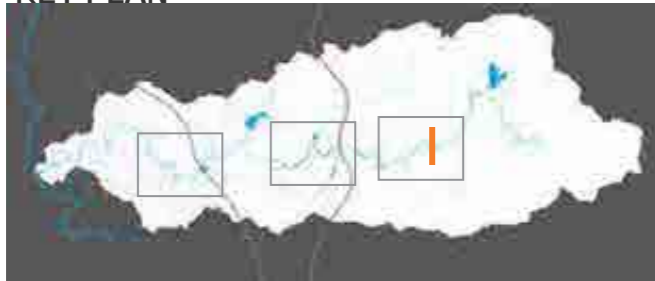
Linear Open Space

MIDDLE corridor
Ripley Town Centre



SECTION AREA 3

KEY PLAN



Corridor Objectives Icon Key

These illustrative sections utilise the icons developed for the Bundamba Creek Corridor Plan to represent how the objectives may operate at a site scale.



Working as One



Embracing the Environment



We all Benefit



Making it Happen

REFERENCE PLAN





Provision of constructed wetlands adjacent to playing fields creates opportunity for stormwater harvesting and re-use as irrigation.



Investigation area for the integrated design of new recreational sport field(s).

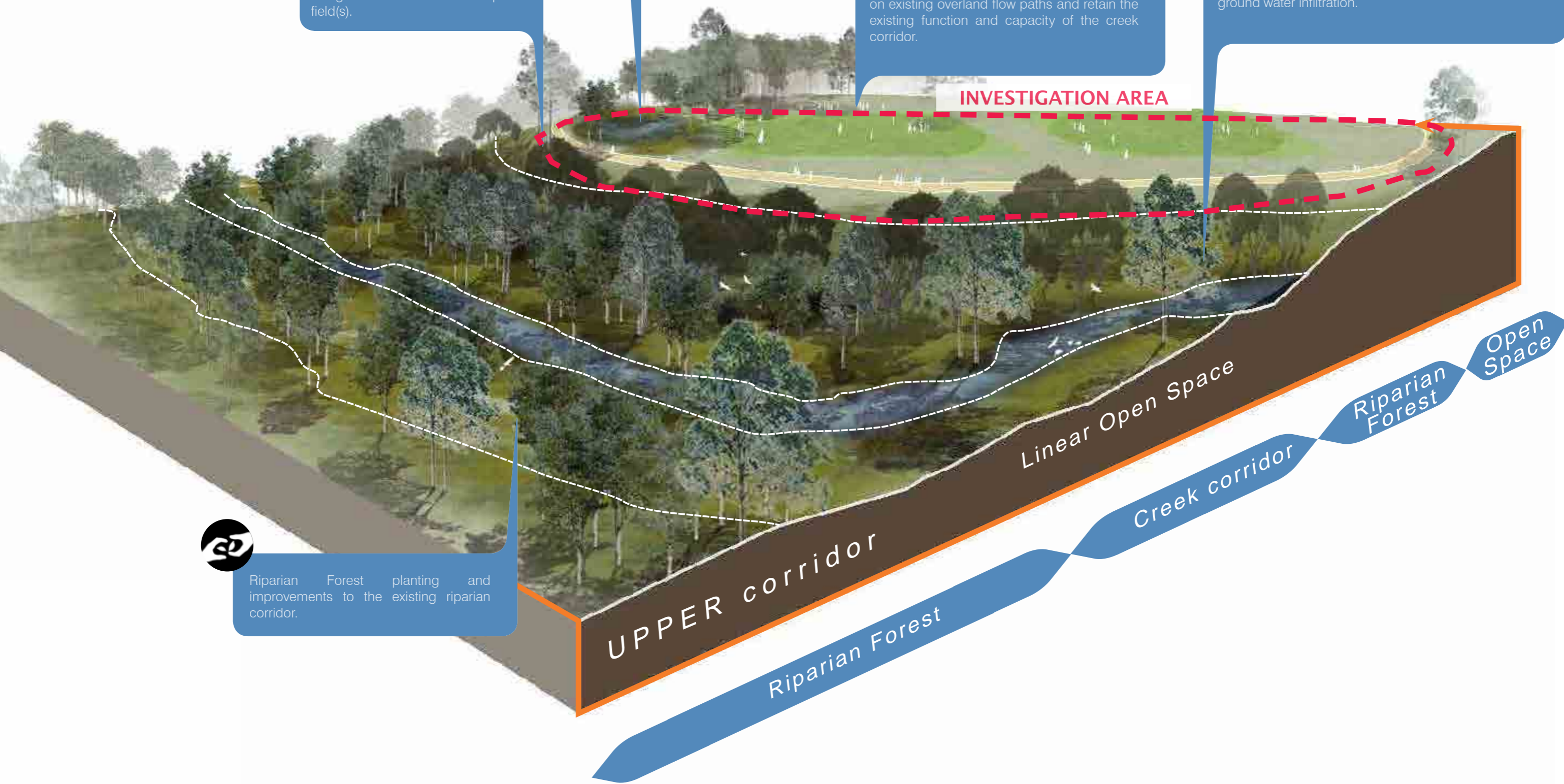


New fields are designed outside of the riparian corridor in order to avoid impedance on existing overland flow paths and retain the existing function and capacity of the creek corridor.



Proposed re-forested flood plain; accommodating periodic inflows and inundation. The new tree cover is designed to slow and dissipate storm water and creek flows and reengage ground water the flood plain and ground water infiltration.

INVESTIGATION AREA



Riparian Forest planting and improvements to the existing riparian corridor.

5.0 Implementation & Delivery Plan

5.0 Implementation

The Corridor Plan is a strategic guide to the long term transformation and management of the Bundamba Creek corridor as a cherished and valued public asset. It identifies the vision and the opportunities to deliver this vision. It also identifies where actions are required to allow this transformation to be successfully achieved.

Specific actions have been identified for key locations (Detail Areas) to address key conflicts and to deliver some exciting opportunities. These specific actions can also be supported through a range of small to large scale interventions which can be delivered across the corridor to drive and support its transformation.

This combined action list is provided below, highlighting the project objectives delivered, the scale of the project and the stakeholders involved. This table can be used by Council to help identify and prioritise key actions to take forward as a priority. The following criteria could be considered to inform this prioritisation:

- + number of different objectives met
- + timing (i.e. some actions need to be undertaken initially to inform others, such as master plans and investigation areas)
- + partnership opportunities to deliver actions
- + strategic investment opportunities

To support this prioritisation, Council could also take this list and undertake a cost / benefit assessment which would help to identify the likely costs, value of the benefits and also to identify where there might be discrepancy between who pays and who benefits. This future work can be used to help negotiations between the many different stakeholders / users / benefactors associated with the transformation of the Bundamba Creek Corridor.

To monitor and evaluate the implementation of the Corridor Plan, this document should be used as a reference document throughout the development of the corridor to ensure that all works undertaken help to deliver the common vision and project objectives.

The following implementation table provides a detailed list of proposed actions and/or projects that have been developed based upon the objectives identified for the corridor (refer below).



WORKING AS ONE

How

- + Management and coordination
- + Development of a master plan
- + The process thus far
- + Agreed standards
- + Shared resources



WE ALL BENEFIT

How

- + Recreational returns, access to waterways
- + Health improvements
- + Aesthetics
- + Education / information
- + Resilience



EMBRACING THE ENVIRONMENT

How

- + Natural systems for life
- + Riparian systems / corridors
- + Education / information
- + Pollution control
- + Wetlands
- + Plants and Animals




























MAKING IT HAPPEN











How











- + A Clear plan of action
- + We all have a role
- + Monitoring and compliance
- + Community engagement / involvement

INVESTIGATION AREA

	PROPOSED ACTION / PROJECT	AREA	DESCRIPTION	OPPORTUNITY FOR IMPLEMENTATION	OBJECTIVES	STAKEHOLDERS
1	Establish a collaborative partnership between the Local Traditional Owners, Council and the Bremer River Fund	Whole corridor	A collaborative partnership will have many benefits including the creation of an on-going management strategy for the floodplain wetlands within the Evelyn-Dodds Cultural Reserve (in detailed area 1)	+ Meeting/s with Local Traditional Owners, Council and the Bremer River Fund	   	ICC / Community
2	Create identity of Evelyn-Dodds Cultural Reserve as a cultural / interpretive beacon	Area 1 / Whole corridor	The celebration of the existing Evelyn-Dodds Cultural Reserve is an existing cultural site within the corridor can act as a catalyst for the development of an identify for the corridor and the creation of other trails, activities and events which could develop under this identity	+ Develop an identify to support the vision for the Bundamba Creek Corridor + Develop a way finding and story-telling strategy + Prepare a clear communication and community engagement strategy for the corridor + Develop community education and awareness program and activities (e.g. produce what's happening in the catchment flyers for residents / adopt a creek program / clean up creek days / explore the catchment walks)	 	ICC / Community ICC / Community ICC / Community
3	Develop masterplan from Cunningham Hwy to Mary St (including Evelyn Dodds Cultural Reserve and South Station Road wetlands)	Area 1	A master plan will provide clear strategic direction for all activities within this area which will provide Council with an integrated plan which will provide cost efficiencies in the delivery of multiple outcomes	+ Development of master plan	   	ICC / Community / Industry
4	Liaise with DTMR to explore the possibility of gaining access to the existing rail corridor and unlock the recreation and active transport potential of the corridor	Area 1	Conversations held with DTMR could open up the opportunity for the existing rail corridor to provide an important recreation link for the corridor	+ Meeting/s with DTMR about rail corridor	  	ICC/DTMR
5	Check status of Robertson Rd project (attempt to integrate project from a strategic investment and urban design perspective)	Area 1	The Robertson Road upgrade can be designed to help deliver the Bundamba Corridor Plan vision and improve the function and amenity of the corridor, improve access and include environmentally appropriate design for the waterway crossing	+ Meeting/s with Robertson Road project leaders to understand status and opportunities to influence design		ICC / STATE government
6	Identify appropriate riparian corridor widths and waterway design requirements (e.g. natural channel design guidelines) to inform riparian regeneration and waterway works along the corridor	Whole corridor	Early investigations by Council into preferred riparian widths and appropriate waterway design requirements will allow Council to provide developers with clear direction for how riparian and waterway works are to be undertaken	+ Development of Bundamba specific riparian corridor widths and natural channel design templates for the waterway corridor based on understanding of waterway condition, typical issues and design requirements to address issues	 	ICC
7	Identify potential extent and design requirements to regenerate riparian vegetation along the corridor to re-establish floodplain habitats and flood storage	Area 3	The riparian revegetation in this area should be informed by the action above, but also should be tested to understand the potential of this revegetation to manage corridor flood flows.	+ Undertake investigation into flooding benefits provided by floodplain revegetation in Area 3		ICC

	PROPOSED ACTION / PROJECT	AREA	DESCRIPTION	OPPORTUNITY FOR IMPLEMENTATION	OBJECTIVES	STAKEHOLDERS
8	Investigate opportunities for riparian regeneration along creek line through community plantings, parkland enhancements and potential offsets.	Whole corridor	Riparian revegetation works along the corridor can help to provide bank stability, habitat and shading for the waterway corridor. These works can also help to slow flood flows and therefore works need to ensure that flood conveyance and storage is considered in the design. Areas which may be prioritised for revegetation include those areas with high flood velocities which may have bank instability issues and also floodplain areas which provide key habitat links or could provide flood detention in the upper catchments. Revegetation works should be informed by the appropriate riparian widths identified in the above action.	<ul style="list-style-type: none"> + Support creation of catchment group/s + Engage local schools (e.g. adopt a creek / clean up creek days / monitor waterway) + Organise community planting days + Developers to provide riparian revegetation of waterways within development site + Projects funded by grants or Council budgets + Offsets 	 	ICC / Community ICC / Community ICC / Community ICC / Developers ICC
9	Where active erosion exists, design and implement natural channel design	Whole corridor	Natural channel design techniques can address waterway erosion and increase the habitat value and ecosystem function of waterways. These works need to consider the flow rates and volumes of the waterway and also the soil types and should be based on the waterway design requirements identified in the action 2 lines above.	<ul style="list-style-type: none"> + Developers to address erosion using natural channel design for waterways within development site + DA officers in Council to refer to Council's Channel Guidelines to ensure natural channel design is considered and used by developers + Projects funded by grants or Council budgets to address current erosion 	 	ICC / Developers ICC / Developers ICC
10	Restrict cattle access to waterway and identify areas of active erosion which require rehabilitation (ideally using natural channel design)	Area 3	Restriction of cattle to the waterway can help to provide early stabilisation of the waterway corridor	<ul style="list-style-type: none"> + Council to work with rural landholders to encourage fencing of waterway corridor 	 	ICC / landholders
11	Identify location and attributes of retained wetlands and overland flow paths to encourage their protection and enhancement during future development of the corridor	Whole corridor	There are a number of flow paths and wetlands throughout the corridor which are at risk of being removed for the development of the new urban areas, especially in the design of key open space areas. The condition of these water assets needs to be identified early to ensure their protection and enhancement can be requested during development assessment. This will ensure existing hydrology and habitats are maintained and it will also protect the condition of downstream habitats.	<ul style="list-style-type: none"> + Identification and condition assessment required for existing wetlands and overland flow paths + Documentation of protection and enhancement requirements to provide development assessment officers and developers with clarity for management of existing wetlands and overland flow paths 	 	ICC / developers ICC / developers
12	Investigate opportunities to retrofit existing stormwater treatment devices within urban sub-catchments	Area 1	Retrofit stormwater treatment locations in existing urban areas could include pollutant hot spot areas which require priority treatment and also suitable locations for water quality offset projects.	<ul style="list-style-type: none"> + Identify pollutant hot spot areas of concern + Identify suitable water quality offset locations 		ICC ICC / State government

	PROPOSED ACTION / PROJECT	AREA	DESCRIPTION	OPPORTUNITY FOR IMPLEMENTATION	OBJECTIVES	STAKEHOLDERS
13	Further planning design development to inform implementation of key offset water quality treatment / wetland projects	Whole corridor	Areas which have been identified as potential water quality offset locations require detailed analysis to understand the costs, treatment benefits and potential delivery pathways. These systems can provide multiple benefits which should be identified and factored into the analysis. This detailed analysis will provide a transparent offset delivery mechanism to allow Council to collect contributions.	+ Detailed analysis of water quality treatment offset sites and development of funding contribution regime	 	ICC / Developers / Community / State government
14	Consider Type 2 stormwater management approach as a potential option in select locations where preliminary high level assessments have identified the potential for constructed stormwater wetlands to be integrated within the open space corridor	Area 2	Areas of the corridor which have periodic flooding of low velocity floods, could provide suitable regional stormwater treatment. Systems such as stormwater treatment wetlands would be designed as integrated systems within the open space corridor which deliver multiple outcomes (water quality treatment, passive recreation, habitat). The potential for these systems to be used as part of a stormwater harvesting scheme should also be considered. The early planning and design of the systems (as per above action) can provide clarity for Council and developers to allow contributions to be sought for these systems from upstream developers.	+ Planning and design projects to understand potential of identified regional stormwater treatment locations + Links to - detailed analysis of water quality treatment offset sites and development of funding contribution regime	 	ICC / state government / developers ICC / state government / developers
15	Use Type 1 stormwater management approach as the default for all new urban developments	Areas 2 and 3	Best practice stormwater treatment is a regulatory requirement for all new developments. This is typically undertaken within the development area and is later handed to Council as an asset. It is important that these assets are designed to function as stormwater treatment devices as well as provide amenity.	+ Council to investigate how tools such as the Water by Design Living Waterways tool can be used by the development assessment group to ensure development designs stormwater treatment devices appropriately	 	ICC / developers
16	Ensure all new developments design and employ best practice erosion and sediment controls	Areas 2 and 3	Erosion and sediment control is critical during construction phase of urban development for waterway health protection. Erosion and sediment control is a requirement for all new developments. Council should ensure in the DA process that the erosion and sediment control plan appropriately consider the soil types (i.e. are the soils dispersive / highly erosive) and Council should also undertake investigations to ensure erosion and sediment control works are actually undertaken	+ Development of publicly available maps outlining soil types and erosivity + Council DA group to have guidance on how erosion and sediment control plans should demonstrate they have considered soil types appropriately + Relevant Council department to undertake regular inspections of development sites to ensure erosion and sediment control is being undertaken	 	ICC ICC / Developers ICC / Developers
17	Provide new and enhance existing shared pathway network through integrated network planning and design project	Whole corridor	A well planned and continuous shared pathway network along the corridor will improve movement into and along corridor as well as provide important cultural and recreational connections to areas within and adjoining the corridor	+ Undertake planning and design project of shared pathway network – include investigations of new recreational trail along creek and active transport links into Conservation Estates (see below)	 	ICC / developers / State government

	PROPOSED ACTION / PROJECT	AREA	DESCRIPTION	OPPORTUNITY FOR IMPLEMENTATION	OBJECTIVES	STAKEHOLDERS
18	Provide a continuous recreation trail along Bundamba Creek	Whole corridor	A share pathway network (see above) can provide a continuous recreation trail along the corridor - linking residential neighbourhoods the town centre and active recreation nodes	+ Ensure above planning and design project ensures a continuous trail along the corridor	 	ICC / developers / State government
19	Consider possibilities for active transport links from and within the corridor to the broader network	Whole corridor	A share pathway network (see above) can provide active transport links to a broader network of pathways (such as trails within nearby conservation estates)	+ Ensure above planning and design project identifies location of potential active transport links	 	ICC / developers / State government
20	Provide nature based active and passive recreation between industrial uses east of the creek corridor and the planned new Ripley Town Centre	Area 2	The creation of a nature based and passive recreation zone within this area will create a buffer between the industrial land uses and new town centre. It will also provide an exciting new nature based recreation zone within this floodplain area which could also be designed to provide a link to the adjacent conservation area	+ Undertake a planning and design project to investigate feasibility and requirements for new nature based and passive recreation zone	 	ICC / Developers / State government
21	Negotiate with private developer to ensure design of new recreational sport field(s) and facilities can meet Council's desired standards of service, are outside of the riparian corridor and avoid impedance for existing overland flow paths	Areas 2 and 3	The design of new recreational sporting fields along the corridor need to ensure that the corridor plan vision can be delivered. This requires consideration of the impact on the waterway, riparian corridor, overland flow paths and access and amenity of the fields. The recreational zones also need to comply with Council's desired standards of service for these areas.	+ Undertake planning and design project of new recreation sporting fields to ensure the vision of the Corridor Plan can be delivered. Alternative sites may be considered as part of this investigation	   	ICC / developers / State government

INVESTIGATION AREA →



This action has critical importance in identifying and investigating the ability for Council to deliver the open space network. Key to this is investigating flooding, fit for purpose requirements (feasibility and constructability ect.) and being able to demonstrate to Council and the development industry if network changes are required or additional land acquisitions, construction costs or further earthworks and design are needed to deliver the network at these locations.

