

New Chum Enterprise Area Planning Study

Date of Resolution

These guidelines were originally adopted by Council on 25 January 2012 and took effect from the 9 February 2012, in accordance with section 2.3(2) of the Planning Scheme. The guidelines were amended by Council:

- 17 September 2014 and took effect on 29 September 2014; and
- 27 March 2018 and took effect on 23 April 2018.

Purpose of the Guideline

The purpose of this guideline is to assist in the co-ordination and integration of development outcomes within the New Chum Enterprise Area and to clarify Council's planning intent.

This guideline is intended to identify and resolve issues regarding strategic outcomes for the future development of the New Chum Enterprise Area. Particular regard is to be given to the management of constraints and opportunities, provision of services and strategic land use outcomes.

Council's Implementation Guidelines are intended to apply a standard approach to the interpretation and implementation of the relevant aspects of the Planning Scheme. They offer a degree of certainty and formality to applicants, Council and the community. This guideline does not change the level of assessment outlined in the relevant zone provisions.

Where an applicant is proposing a variation to the guidelines the onus is on the applicant to demonstrate the facts and circumstances to support the variation.

Introduction to the Study Area

The South East Queensland Regional Plan recognises the New Chum Enterprise Area as an enterprise opportunity area owing to the economic and employment growth opportunities to support Ipswich's growing population. Furthermore, the Planning Scheme identifies the New Chum Enterprise Area as of regional business and industry significance.

The New Chum Enterprise Area is situated near the junction of the Cunningham Highway, Warrego Highway and Ipswich Motorway. The area offers extensive land which may be suitable for business and industry uses in proximity to services and a large employment catchment.

The study area is bounded by Old Ipswich Road and Pottery Road to the north, Six Mile Creek to the east, Redbank Plains Road to the south and Cunningham Highway to the west (see Figure 1: New Chum Study Area). The total area is approximately 8 km².

External to the study area boundary, the New Chum Enterprise Area is surrounded by the master planned Swanbank industrial estate to the south, a small enclave of Local Business and Industry zoned land, St Peter Claver College and a residential community to the north, land primarily committed to residential development east across Six Mile Creek in Collingwood Park and west across the Cunningham Highway in Bundamba.

Land within the boundaries of the New Chum Enterprise Area is significantly altered from its natural state. This land is highly constrained for traditional development forms predominately owing to its past coal and clay mining, and landfill operations.

1. Key Planning Issues (Constraints and Opportunities)

(1) Mining Influence

The New Chum Enterprise Area is extensively affected by mining as shown on Mining Influence Constraint Overlay Map OV3. The mapping identifies the known location of underground and open cut mining, and areas susceptible to influence from prior mine workings.

The mine workings have contributed to land instability in parts and created two significant open cut voids retaining water. The estimated depth of the water filled open cut void on land described as Lot 227 SP103913 is 100m and 175m on Lot 4 RP22539. The water quality of both artificial lakes is unknown. Further investigation is required to determine the artificial lakes' suitability for future development or recreation/conservation purposes.

Spontaneous combustion of coal and carbonaceous shale occurs within the study area originating from both human and natural influences. The control of the underground burnings can be problematic to manage.

Applicants lodging a development application over land affected by the mining influence overlay should include a comprehensive, site specific, geotechnical assessment (refer to Planning Scheme Policy No. 2 - Information Local Government May Request) demonstrating that the proposed development or lots are capable of accommodating, whichever is the greater, 30% or 1,000m² of land for built structures per site. Where the above land requirements cannot be readily ascertained, Council may consider an integrated building design solution to be approved as part of the development application.



Preliminary approval only may be issued in instances where insufficient supporting geotechnical information is provided for the assessment of the development application.

A file record will be kept for all lots where assessment of the mining influence overlay has been undertaken to advise intending purchasers of the existence of site specific constraint management requirements, if any.

It is likely to be a requirement of any development approval issued that the applicant/vendor must advise any intended purchaser of relevant geotechnical constraints.

(2) Key Resource Areas

The study area contains known resources, mining leases and haul routes as shown on the Key Resource Areas, Buffers and Haul Routes Overlay Map OV2.

Current mining leases cover the majority of land within the study area. The conditions and expiry dates of each lease vary. Depending on the particular mining lease clauses, conditions may apply which require site rehabilitation following cessation of the mining activity.

Two identified haul routes link Chum Street and a short section of Redbank Plains Road to the Cunningham Highway. These haul routes connect the study area to the regional transport corridor without traversing sensitive areas (ie school and residential communities).

(3) Environmental Management Register

Several lots in the study area are recorded on the Environmental Management Register maintained by the Department of Environment and Resource Management (DERM) for notifiable activities such as petroleum product or oil storage and landfill. Advice should be sought from DERM for lots recorded on the register.

(4) Topography

Extractive industry activities have significantly altered the natural topography, resulting in areas of unstable land, difficult topography in excess of 25%, deep voids and hillocks up to 125m high.

The location and design of development within the constrained areas should be responsive to the site's particular geotechnical, environmental and visual attributes.

(5) Six Mile Creek

The Six Mile Creek is a designated creek system. It commences at White Rock and flows north, along the eastern boundary of the study area. It is a tributary to the Brisbane River converging at Riverview/Redbank. Significant areas of riparian and adjacent vegetation exist and perform important environmental functions including creek bank stabilisation, water purification, fauna and flora habitat and local linkages for key species such as the Koala.

Furthermore, the creek's greenspace also functions as a buffer to residential development north and east, and provides opportunity for public recreation.

Land uses adjacent to the creek greenspace corridor should protect the corridor's environmental integrity, particularly from development edge effects and poor quality stormwater runoff.

(6) Flooding and Urban Catchment Overland Flow Paths

Flooding and overland flows paths generally affect the eastern portion of the study area along Six Mile Creek as shown on the Flooding and Urban Catchment Flow Paths Overlay Map OV5. Other stormwater overland flow paths may have formed elsewhere in the study area as a result of altered hydrology owing to significant land form modifications.

(7) Provision of Services

150mm sewer and water mains service existing industrial development at the northern end of Chum Street. Apart from this section of the study area there is no existing reticulated sewer or water provision.

(8) Major Water Pipelines

The Southern Regional Water Pipeline and Western Corridor Recycled Water Pipeline traverse the south western corner of the study area, supplying recycled water to the Swanbank Power Station (see Figure 6).

Development proposing connection to either pipeline should consult with Queensland Urban Utilities and the pipeline custodians, LinkWater and SEQWater respectively in the first instance.

(9) Road Network

Pottery Road accommodates northern access to the study area from Brisbane Road, Ipswich Motorway and Cunningham Highway, and Austin Street provides southern access from Redbank Plains Road and Cunningham Highway.

The internal road network consists of mostly unsealed roads, and unconstructed road reserves. Some of the internal road placements have diverted over time from the gazetted alignment to avoid areas of significant mining influence.

(10) Highway Buffer

Buffering to the Cunningham Highway is shown on Buffers to Highways and Regional Transport Corridors Overlay Map OV6. The buffer is to address the visual amenity of business and industry uses to the east through the provision of either a natural vegetated buffer, or an aesthetically pleasing built form as readily seen from the Cunningham Highway.

(11) Adjacent Sensitive Development

Land committed to current and future sensitive land uses (ie residential and educational areas) exist to the north, east and west of the study area.



These sensitive uses are susceptible to visual, environmental, acoustic, odour and dust amenity impacts.

(12) High Voltage Electricity Transmission Lines

High voltage transmission lines traverse the study area from east to west. The corridor is shown on the High Voltage Electricity Transmission Lines Overlay Map OV13.

2. Preferred Development Pattern Guidelines

(1) Land Use

The New Chum Enterprise Area offers land which may be suitable for industrial and land extensive enterprises supported by a substantial employment catchment.

The pattern of industrial land uses creates a transition of lower impact uses on the edge to higher impact activities towards the centre, with the incorporation of appropriate separation distances.

Recreational pursuits reliant on large expanses of land and relatively natural settings are supported.

Over time, new uses will reinvigorate the area, producing quality developments that demonstrate innovative constraint management solutions. New development can capitalise on the availability of land and good access to regional transport corridors in a location separated from other incompatible uses (eg. residential areas).

New uses shall rehabilitate land degraded from previous extractive and landfill operations to an improved condition. Opportunity also exists for rehabilitated land to accommodate recreation uses such as outdoor/adventure sports and off road vehicle pursuits.

The natural setting bordering the area shall retain and enhance remnant and regrowth vegetation, especially for fauna and flora habitat linkage, buffering and screening purposes. This buffering maximises the separation of high impact activities from other sensitive land uses.

New business and industry uses should demonstrate with a high degree of certainty that appropriate treatment of odour, acoustic, light or dust emissions are incorporated into the development, so not to adversely affect sensitive uses outside of the study area (particularly nearby residential areas). Business and industry uses that generate significant emissions external to the study area are to be avoided.

Proposals involving infrastructure, buildings or other structures over land identified on the Mining Influence Overlay OV5 must be supported by a detailed geotechnical study demonstrating that the design and construction is able to withstand possible subsidence events (refer to Planning Scheme Policy No. 2 - Information Local Government May Request).

Areas susceptible to combustion, or significant ground heating are to be avoided.

As the current predominant planning scheme zoning within the New Chum Enterprise Area is Regional Business and Industry Investigation, further investigation will be required in the assessment of development applications responding to the constraints and opportunities at a site specific level, and provision of infrastructure.

This guideline does not change the level of assessment outlined in the relevant zone provisions.

Guidance to the preferred pattern of development is spatially depicted on Figure 2: Land Use Concept Master Plan and Figure 3: Precinct Plan, and supported by the following:-

Regional Business and Industry

Precinct 1A

Precinct 1A has good access to the external regional transport and infrastructure network towards the north.

The precinct is suited to low and medium impact industry uses.

High impact uses may be considered where a suitable separation is achieved between the proposed use and any current or planned sensitive land uses.

Uses directly fronting the Cunningham Highway must either incorporate an adequate screening buffer or present quality building façades and associated landscape treatment where readily seen from the transport corridor.

Detailed investigations are required in relation to the location and management of threatened flora species as identified on Figure 4: New Chum Threatened Species Overlay.

Precinct 1B

Precinct 1B is supported by good access to the external regional transport network via Redbank Plains Road.

Development within Precinct 1B is subject to detailed investigation to determine vegetation management.

This precinct is suited to both low and medium impact industry uses. The low impact industry should provide a separation between committed residential land to the west and more intense industry uses to the east.

Higher impact uses may be considered where a suitable separation is achieved between the proposed use and any current or planned sensitive land uses.

Where presenting to Redbank Plains Road and the Cunningham Highway uses must either incorporate adequate screening or quality building facades and associated landscape treatment.



Development within Precinct 1B is to ensure there is no significant adverse amenity impact on the Schedule 2 listed homestead known as 'Cooneana' (in Precinct 1B) for tourism and community uses.

Regional Business and Industry Investigation

Precinct 2A

Development for business and industry uses within Precinct 2A is subject to detailed investigation to determine site stability, vegetation management, infrastructure service provision and industrial road access. In particular, detailed investigations are required in relation to the location and management of threatened flora species as identified on Figure 4: New Chum Threatened Species Overlay.

Uses directly fronting both sides of Barclay Street must either incorporate an adequate screening buffer or present a quality building façade and associated landscaped treatment where readily seen from the public right of way.

Traffic using Barclay Street for access through the residential community on the eastern side of the Cunningham Highway should be restricted to passenger vehicle movements only.

Precinct 2B

The two areas within Precinct 2B currently have limited access to infrastructure. The future use of these areas requires further investigation to demonstrate suitable uses in light of the significant development constraints.

Development of Precinct 2B for low to medium impact industry uses is envisaged long term, subject to the resolution of constraints, vegetation management and infrastructure provision.

Land Extensive Business Enterprise

Precinct 3

Precinct 3 offers opportunities to locate business and industry uses that require large expanses of land, require minimal or temporary structures or are difficult to locate.

Detailed investigations are required in relation to the location and management of threatened flora species and remnant vegetation as identified on Figure 4: New Chum Threatened Species Overlay.

Overall, development should maintain the broad acre and greenspace setting unless acceptable alternate solutions are demonstrated. Areas used for outdoor activities or storage are screened from view from the Cunningham Highway.

Appropriate environmental controls and measures are to be incorporated into developments to address any noise, odour and dust emissions so not to affect nearby current and future residential development, particularly on the western and eastern periphery of the study area.

Local Business and Industry

Precinct 4

Land within this precinct has existing development permits for business and industry activities. Development outside the scope of the development permits may trigger further applications.

Special Opportunity

Precinct 5A

The precinct supports current and future local government operations. This precinct may provide opportunities for a broad range of business and industry uses, depot, an animal management centre and plant nursery. Primary access to the premises should be obtained via a new road connecting to the Redbank Plains Road roundabout.

Uses fronting Redbank Plains Road are to incorporate adequate screening or quality building facades and associated landscape treatments.

Precinct 5B

The precinct is intended for ongoing local government activities. The site is currently home to the Ipswich Historical Society and contains the Schedule 2 listed homestead known as 'Cooneana'. Future uses are respectful and sympathetic of the historically significant buildings existing on the site.

Buffer/Greenspace

Precinct 6A

This precinct is intended to provide an attractive natural/landscaped buffer to the Cunningham Highway. Buildings which are able to be readily seen from the highway are to present quality facades and associated landscaped treatment.

Consideration may be given to stormwater treatment within this area or a lesser buffer width where the applicant demonstrates that potential visual and amenity impacts to the Cunningham Highway and nearby residential development have been sufficiently addressed.

Precinct 6B

Precinct 6B contains significant remnant native vegetation along the eastern and northern boundaries of the study area, connecting the greenspace corridor between Swanbank and Riverview along Six Mile Creek. The corridor also provides a valuable linear fauna and flora habitat linkage, and separates residential and industrial development.

Sections of this corridor are intended to be used as future city wide linear parkland and a local sports ground. The sports ground is intended to be located adjoining the local business and industry precinct and Six Mile Creek in the south-east corner of the study area. Refer to Council's Part 13—Local Government Infrastructure Plan for further information.



This greenspace corridor is to be protected and enhanced, where possible, particularly from potential edge effects. Development leading to deterioration or fragmentation of this corridor is to be avoided. The area mapped as bushland rehabilitation overlay is intended for replanting and restoration following the cessation of mining activities.

A major portion of stormwater runoff in the study area drains towards this precinct. New development is to address both stormwater quality and quantity to protect the terrestrial and aquatic habitat. Developments may utilise existing stormwater management areas within this precinct where such proposal is demonstrated to meet the intent of this precinct (eg Transpacific Waste Management currently use the large waterbodies on their land for surface and stormwater management).

The water filled open cut mining void within this precinct captures local runoff and is known to discharge into the Six Mile Creek. Safety and water quality concerns limit public usage of the artificial lake.

Further supporting information may be required in conjunction with development applications regarding water quality investigations and public safety improvements. Poor water quality results may require the disconnection of the artificial lake from the Six Mile Creek system.

Special Uses

Precinct 7

Land within this precinct accommodates the ongoing operations of the water reservoir.

3. Biodiversity Guidelines

(1) Significant Native Fauna and Flora

Several fauna and flora species of national and state significance protected under the *Nature Conservation Act 1992* (NCA) and *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC) are recorded within the New Chum study area. These species are vulnerable to damage or loss from direct harm and edge effects.

The known threatened flora species are the Cooneana Olive (*Notelaea Ipswiciensis*), Lloyd's Native Olive (*Notelaea Lloydii*), Slender Milkvine (*Marsdenia Coronata*), Bailey's Indigo (*Indigofera Baileyi*), Austral Toadflax (*Thesium Australe*) and Plunkett Mallee (*Eucalyptus Curtisii*).

This vegetation is sporadically distributed in the study area as individual specimens and disconnected communities. The Cooneana Olive and Lloyd's Native Olive are known to grow in highly disturbed locations such as mining spoil heaps, steep slopes and road corridors.

The Powerful Owl (*Ninox Strenua*) is listed in the NCA as a threatened fauna species. Records indicate that powerful owls inhabit an area in the greenspace corridor of Precinct 6B.

Figure 4: Threatened Species Overlay indicatively identifies the recorded known locations of threatened species. Disconnected groupings of vegetation identified as requiring further investigation are dispersed throughout the study area. These communities provide essential habitat that is known to support individual protected threatened species.

Advice regarding biodiversity values as shown on Figure 4 should be obtained from the Department of Environment and Resource Management (DERM). Advice provided from DERM responding to threatened species should be lodged as development application supporting information along with all necessary specialist reports (refer to Planning Scheme Policy No. 2 - Information Local Government May Request). Ground truthing may be necessary to accurately identify the existence of threatened species on land subject to a development application.

Areas discovered as containing registered threatened species must investigate opportunities to protect and enhance the species and its longevity. Works resulting in disturbance (ie land clearing, earthworks, building and landfilling) of protected fauna and flora may be referred to DERM.

Addressing the Implementation Guideline does not remove any requirements under the *Vegetation Management Act 1999*, *Nature Conservation Act 1992* and *Environmental Protection and Biodiversity Conservation Act 1999*. The mapping shown in Figure 4 is current to the date of the guideline. As biodiversity data is regularly updated, further advice should be sought from DERM.

4. Infrastructure Guidelines

The provision of infrastructure within the New Chum Enterprise Area requires greater consideration than traditional brown field areas in light of the significant development constraints that exist. Land generally suited to land extensive business enterprises such as within Precinct 3 may prove difficult to service and necessitate using alternative, innovative design solutions.

(1) Strategic Road Network

Upgrade of the internal road networks to an appropriate industrial standard is essential to support growth of the area. At present most internal roads are of poor quality and comprise unsealed or unconstructed road reserves.

The overall strategic road network will form gradually over time as development occurs. The road design ultimately producing a north – south link is to be of an industrial collector standard.



Chum Street is to continue as the primary northern access to the area. To the south, an all movements access arrangement is envisaged to connect to the Redbank Plains Road roundabout. Vehicular movements to and from Austin Street may be rationalised in future to left in/left out.

The industrial traffic generated within the study area should be directed along the designated traffic routes to the regional transport network and avoid residential streets. In particular, vehicle movements over the Barclay Street bridge through the residential area to the west should be limited to passenger vehicles only and in particular exclude heavy and articulated vehicles.

Development applications triggering the requirement for roadworks shall provide safe and equitable access. The strategic road network is shown on Figure 5: New Chum Indicative Strategic Transport Network. The determination of precise road alignments will be based on resolving constraints, particularly in respect to mining influence, topography, ground heatings and land stability. Innovative solutions for road pavement design and ongoing maintenance may need to be considered for management of the constraints.

(2) Pedestrian and Cycle Network

The inclusion of a pedestrian and cycle network promotes healthy and alternative commuting options. The New Chum Enterprise Area offers important linkages to external transport modes such as the Redbank Plains cycle loop and Dinmore Railway Station.

New developments shall take advantage of this proximity by contributing to the expansion of the pedestrian and cycle path network, particularly with consideration to linking the Dinmore Railway Station, linear recreation corridor, industrial development to the south, and existing pedestrian and cycle trails.

A north-south pedestrian and cycle path is desired along Six Mile Creek to connect New Chum, Swanbank, Collingwood Park and Riverview. The actual location of this network will be dependant on the outcomes of detailed investigations and may be finally located along one or both sides of the creek.

(3) Water Supply

The ultimate water supply scheme for the New Chum Enterprise area, together with existing infrastructure is shown in Figure 6: Strategic Water Supply Network. Due to the expanse of the New Chum Enterprise area and the range of elevations, parts of the area will be serviced from four separate water supply zones. Higher elevation areas in the south-west and central portions of the New Chum Enterprise area (notionally everything above 55 m AHD) will be serviced from the Redbank Plains high level zone (HLZ). Lower elevation areas in the south-east of the New Chum Enterprise area will be serviced by extending the Redbank Plains low level zone (LLZ). The majority of the northern and central portion under the elevation of 55 m AHD will be serviced from the Riverview zone.

A small area of existing development in the north-west of the New Chum Enterprise area is currently serviced from the Bundamba zone, which will continue to be the case. These are the only lots within the New Chum Enterprise area which are currently serviced.

Water supply infrastructure planning to service the New Chum Enterprise area has been undertaken at a high level and the servicing strategy and network layout is indicative only. Due to the number of uncertainties and complexities in the New Chum Enterprise area; such as mining constraints, underground heatings, variable topography, landfill sites and potential land uses, further detailed investigation will be required to confirm the servicing strategy and sequencing of infrastructure to provide for development.

A significant amount of new infrastructure is required to connect New Chum to the Redbank Plains HLZ, including a new pumping station, reservoir and trunk mains. This pumping station and reservoir are tentatively planned and scheduled for delivery in 2017 and 2020 respectively. The location intended for the pumping station is nearby the bend of School Road, Redbank Plains and the reservoir near the Cunningham Highway roundabout at White Rock.

An interim supply arrangement involving connection of the south-western portion of the New Chum Enterprise area to the nearby Ripley supply zone may be considered. Such an arrangement would only be capable of supplying adequate pressure to areas under the elevation of 65 m AHD and is only viable for several years until the level of development in the Ripley zone intensifies. It is expected that connection to the Redbank Plains HLZ will be required to coincide with the delivery of the School Road pumping station in 2017, which will provide the major supply to the Redbank Plains HLZ.

New uses are to connect to the reticulated water network. Developments bringing forward the construction of water supply infrastructure or employing interim arrangements must demonstrate sufficient capacity and pressure will be provided to service proposed land uses and meet fire fighting requirements.

Alternative solutions including interim arrangements will only be considered where it is demonstrated to the satisfaction of Council and Queensland Urban Utilities that a connection to the reticulated water supply system in accordance with the ultimate supply strategy is not feasible. It may be expected that the cost of interim works or infrastructure brought forward will be borne by the applicant.

Two potential water supplies in the study area may provide opportunity to supplement industrial water consumption. The first option is the Western Corridor Recycled Water Pipeline. Connection to these water pipelines is dependent on negotiation with both Queensland Urban Utilities and the pipeline's custodian, SEQWater.



The second option is to utilise the large water filled open cut mining void on Lot 4 RP22539 subject to supporting evidence demonstrating safe water quality for the nature of the use and no impact on aquifers in both water quality and level.

(4) Sewerage Treatment

There are currently only several lots in the north of the New Chum Enterprise area connected to sewerage. The closest existing trunk sewerage drains areas to the east of the study area to the Goodna waste water treatment plant (WWTP) and areas to the west of the study area to the Bundamba WWTP. Limited planning has been undertaken to determine the infrastructure required to connect development within the New Chum Enterprise area to these existing trunk sewerage networks.

Local topography dictates that sewerage within the study area will be split between the Bundamba WWTP and Goodna WWTP catchments. Indicative catchment boundaries showing direction of flow based on existing topography are shown in Figure 7: Strategic Sewer Network. Further investigation will be required to determine the most efficient infrastructure to service these catchments including identification of the need to upgrade downstream sections of the existing trunk network due to the additional load caused by development within the area. This planning should maximise the use of gravity sewerage but may consider the use of pressure sewerage systems where topography would otherwise require excessive use of pumping stations.

New uses are to connect to the reticulated sewer network where possible. Where it is demonstrated to the satisfaction of Council and Queensland Urban Utilities that land cannot be feasibly serviced by reticulated sewer, consideration may be given to on-site private waste water treatment solutions.

(5) Stormwater Management

The land hydrology has varied over time owing to significant modification to the land form. Overall, the major portion of the stormwater catchment drains to the large water filled open cut mining voids and Six Mile Creek. The balance flows towards the Cunningham Highway.




New uses shall demonstrate that predevelopment flows, water quality objectives and preservation of drainage corridors are achieved in accordance with Implementation Guideline No. 24 - Stormwater Management.

All stormwater treatments associated with development are maintained on private property. Consideration may be given to the construction of regional stormwater detention and treatment basins servicing multiple developments.

(6) National Broadband Network

In preparation for the national broadband network it is recommended that the provision of communication technology to a fibre ready standard (ie telecommunications conduits and pits) be incorporated in new developments.



-  Study Area
-  Property Boundaries
-  2009 Aerial Photograph

April 2018

Legend



Figure 1
New Chum
Study Area

-  Regional Business and Industry (Medium Impact)
-  Regional Business and Industry (Low Impact)
-  Local Business and Industry
-  Regional Business and Industry Investigation
-  Regional Business and Industry Buffer
-  Greenspace
-  Bushland Rehabilitation Overlay
-  Land-Extensive Business Enterprises
-  Special Uses
-  Special Opportunity
-  Indicative Boundary (subject to further detailed investigation)

April 2018

Legend

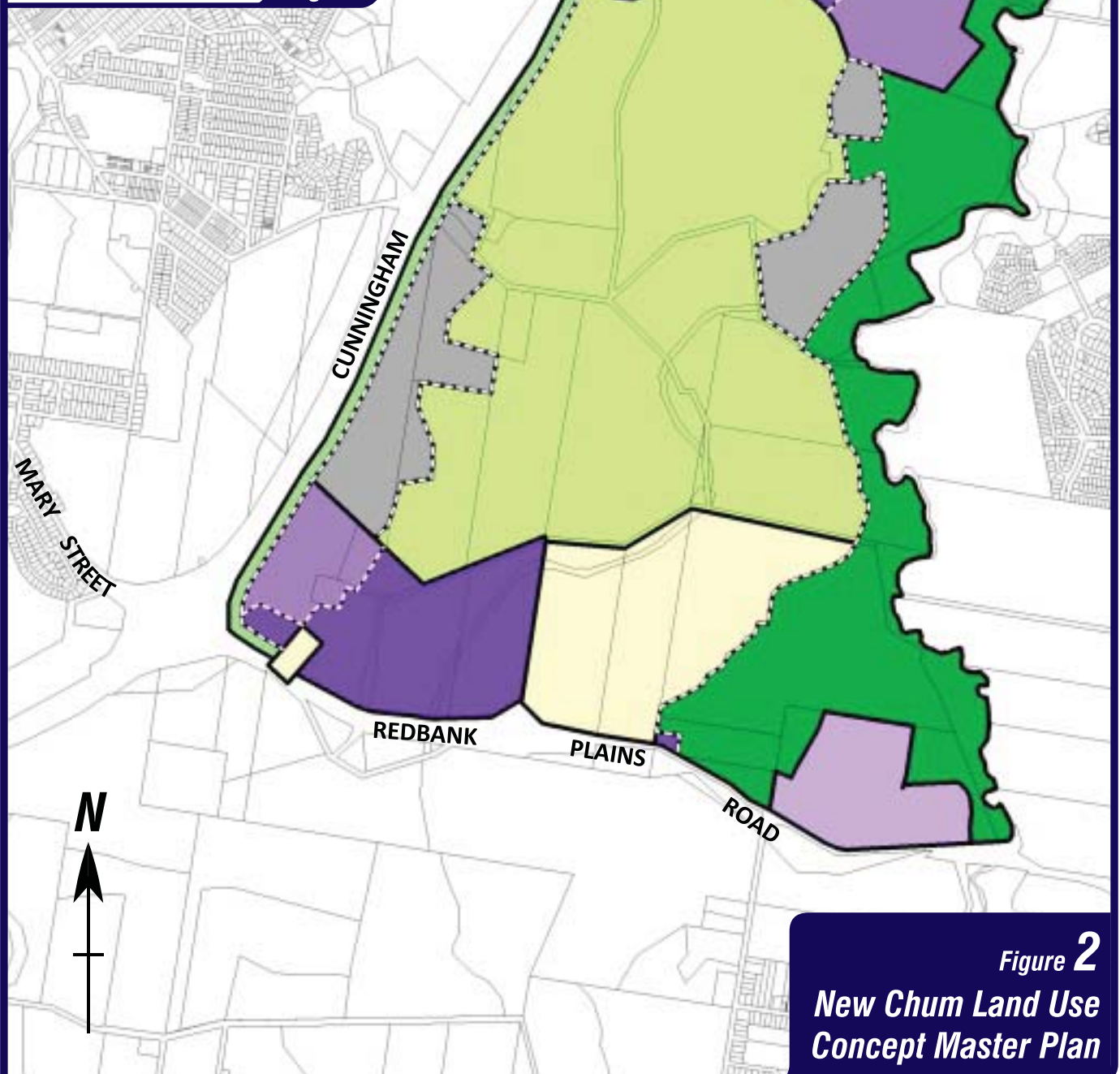


Figure 2
New Chum Land Use
Concept Master Plan

- 1** Regional Business and Industry
- 2** Regional Business and Industry Investigation
- 3** Land-Extensive Business Enterprise
- 4** Local Business and Industry
- 5** Special Opportunities
- 6** Buffer/Greenspace
- 7** Special Uses

April 2018

Legend

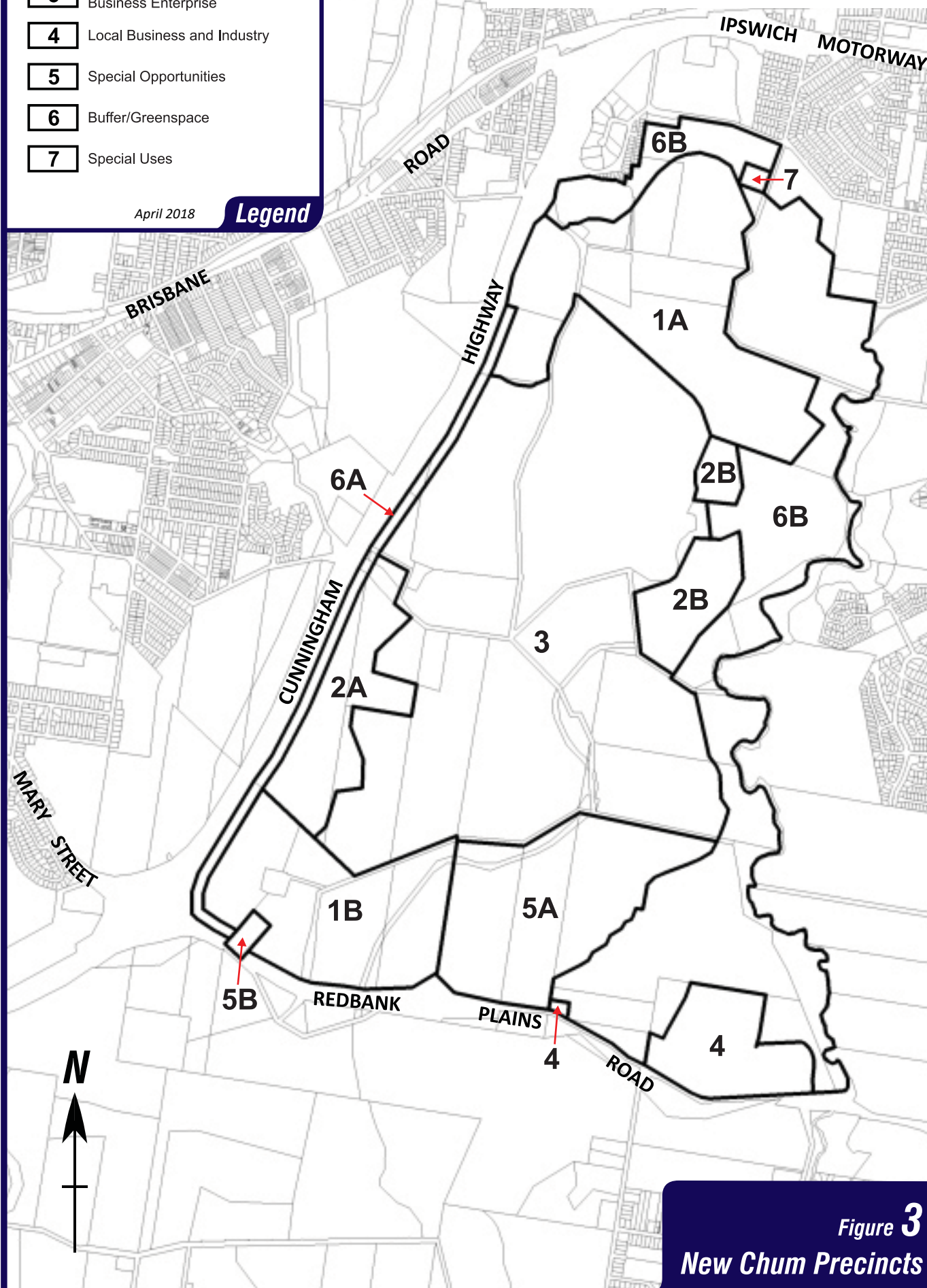







Figure 3
New Chum Precincts

-  Study Area
-  Conservation
-  Threatened Flora
-  Threatened Fauna
-  Indicative (subject to further detailed investigation)

April 2018

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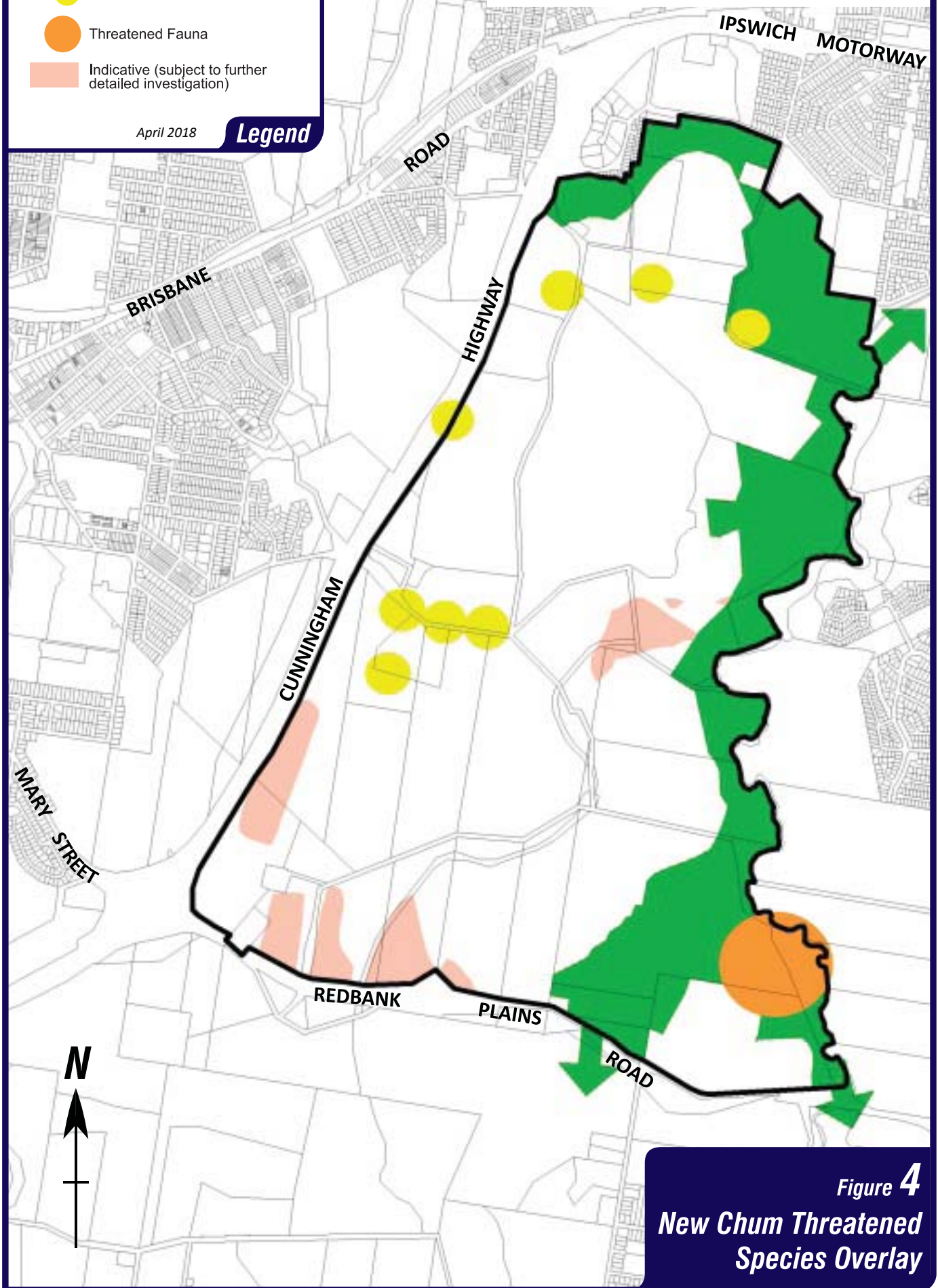









Figure 4
New Chum Threatened Species Overlay

-  Study Area
-  Existing Regional Transport Corridor
-  Major Intersuburban Link
-  Indicative Major Intersuburban Link
-  Existing Industrial Collector
-  Indicative Industrial Collector
-  Pedestrian/Cycle Connection (Off Road)

Major Intersection Treatments

-  Traffic Signals
-  Roundabout
-  Left In/Left Out

April 2018

Legend

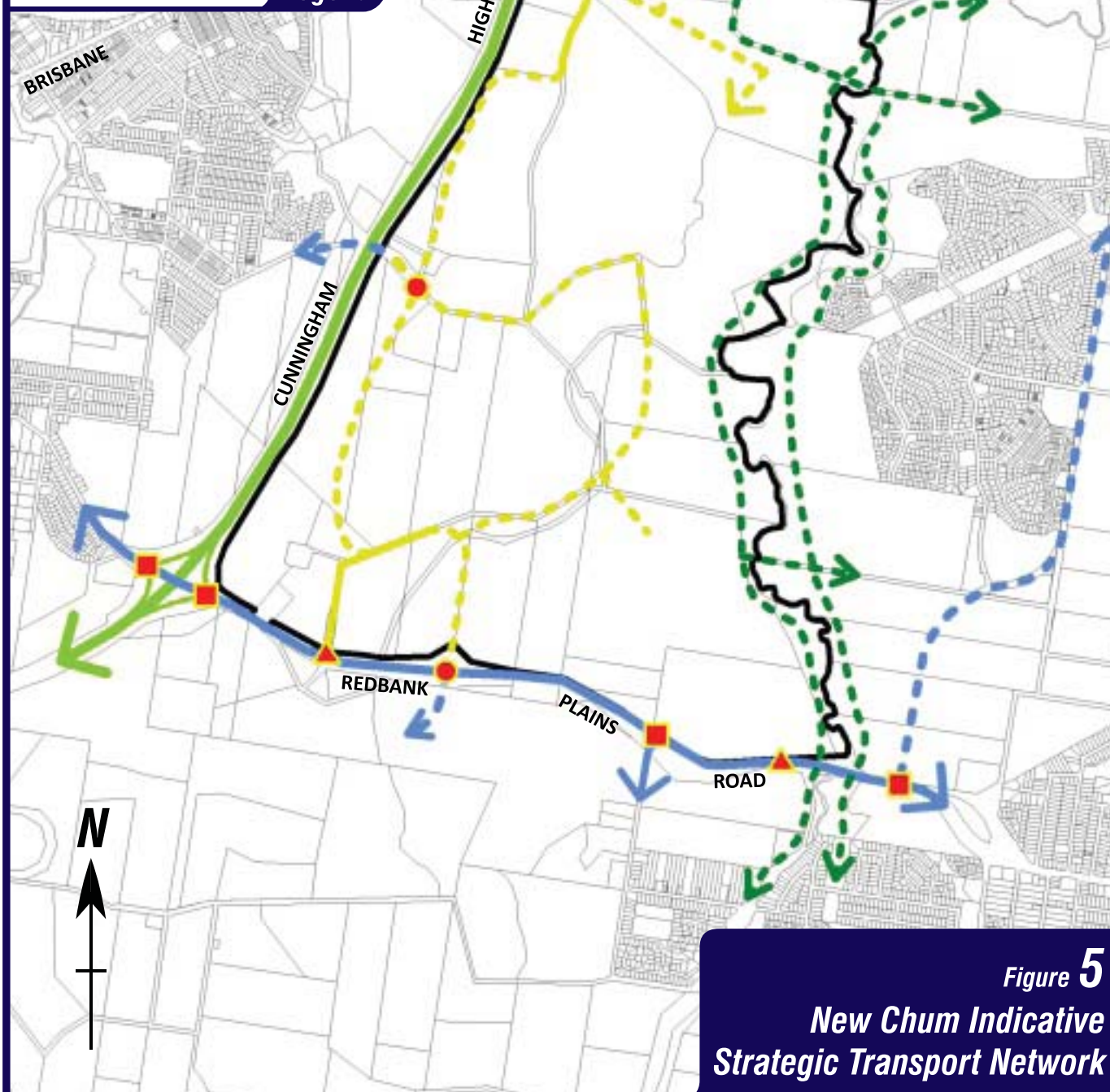











Figure 5
New Chum Indicative
Strategic Transport Network

-  Study Area
-  Existing Water Mains
-  Existing Trunk Water Main
-  Existing Water Reservoir
-  Southern Regional Water Pipeline
-  Western Corridor Recycled Water Pipeline
-  Proposed Water Mains (Riverview)
-  Proposed High Level Water Mains (Redbank Plains)
-  Proposed Low Level Water Mains (Redbank Plains)

April 2018

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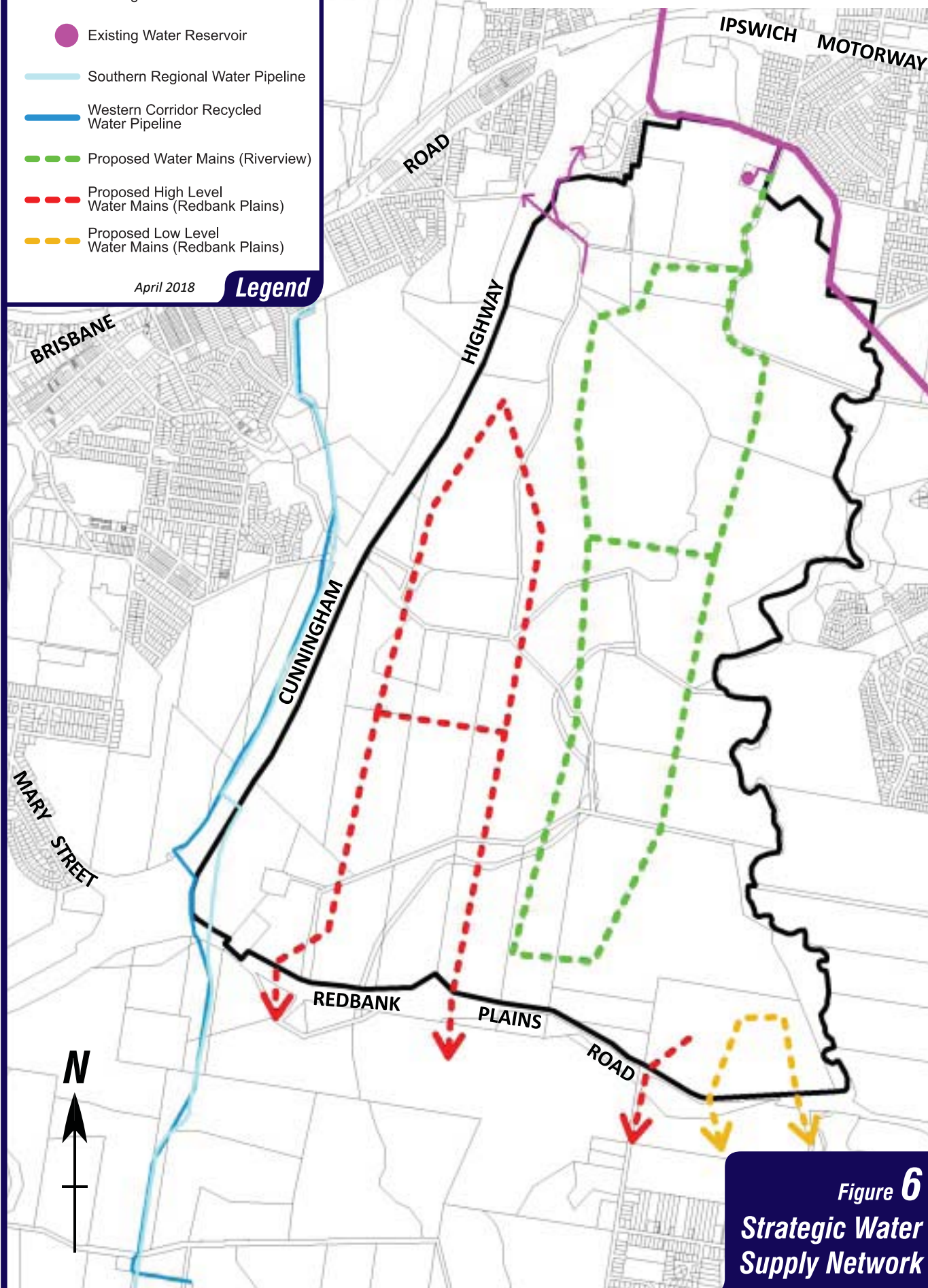







Figure 6
Strategic Water
Supply Network

-  Study Area
-  Sewer Catchment Bundamba
-  Sewer Catchment Goodna
-  Catchment Drainage Direction
-  Existing Sewer Mains

April 2018

Legend

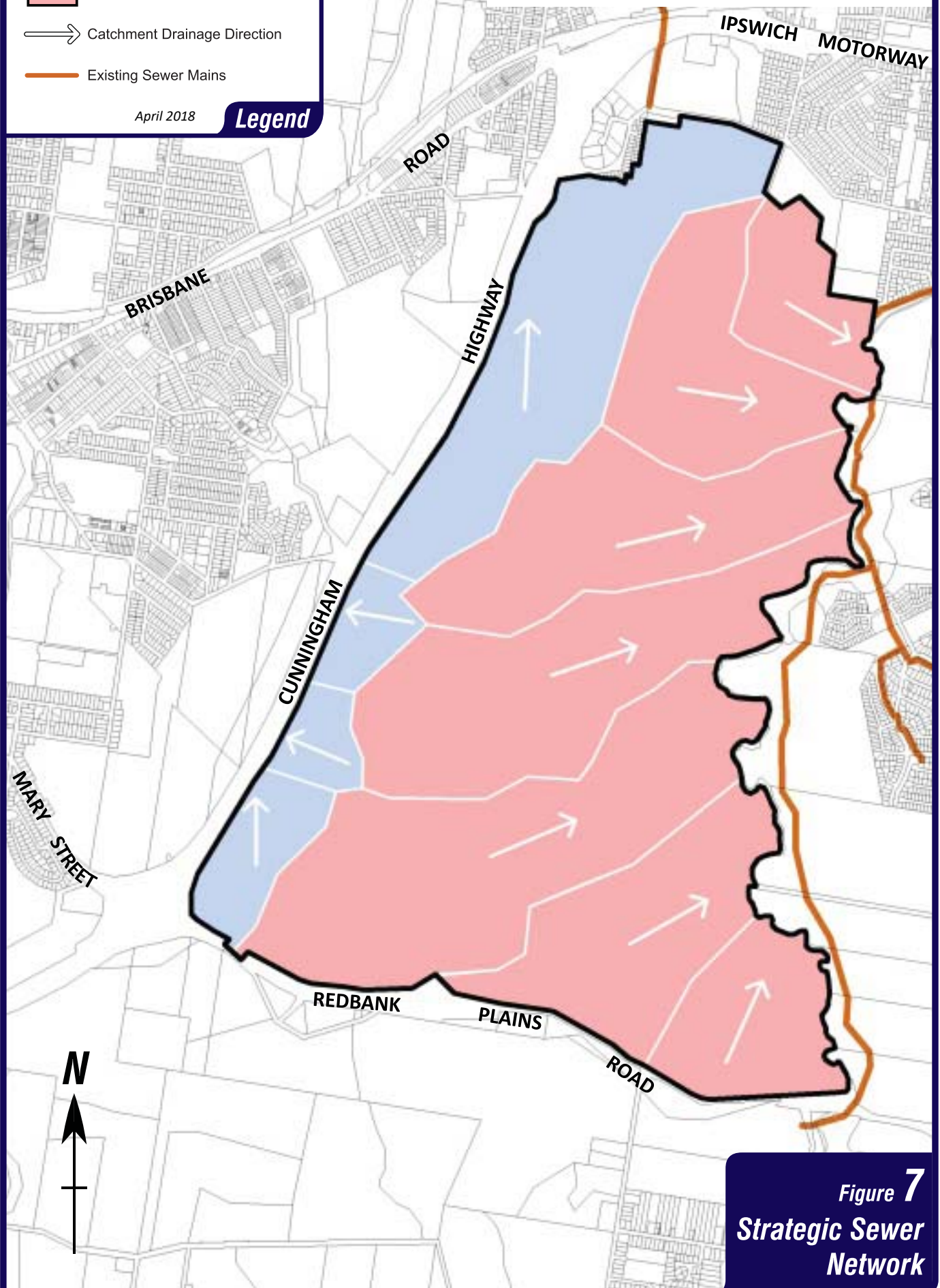


Figure 7
Strategic Sewer Network