--ooOOoo--

IPSWICH THOUGHT LEADERSHIP WORKSHOP 3 – BIODIVERSITY, SUSTAINABILITY AND ENVIRONMENT

Kim Markwell

E2DESIGNLAB

Todays workshop

Examining the future of Ipswich's planning scheme in relation to its:

Biodiversity and vegetation	Waterway health	Urban greening
		

E2DESIGNLAB

Topics for today

\ Ipswich natural environment values

\ Threats and current trends

\ Opportunities

Biodiversity and vegetation	Waterway health	Urban greening

E2DESIGNLAB

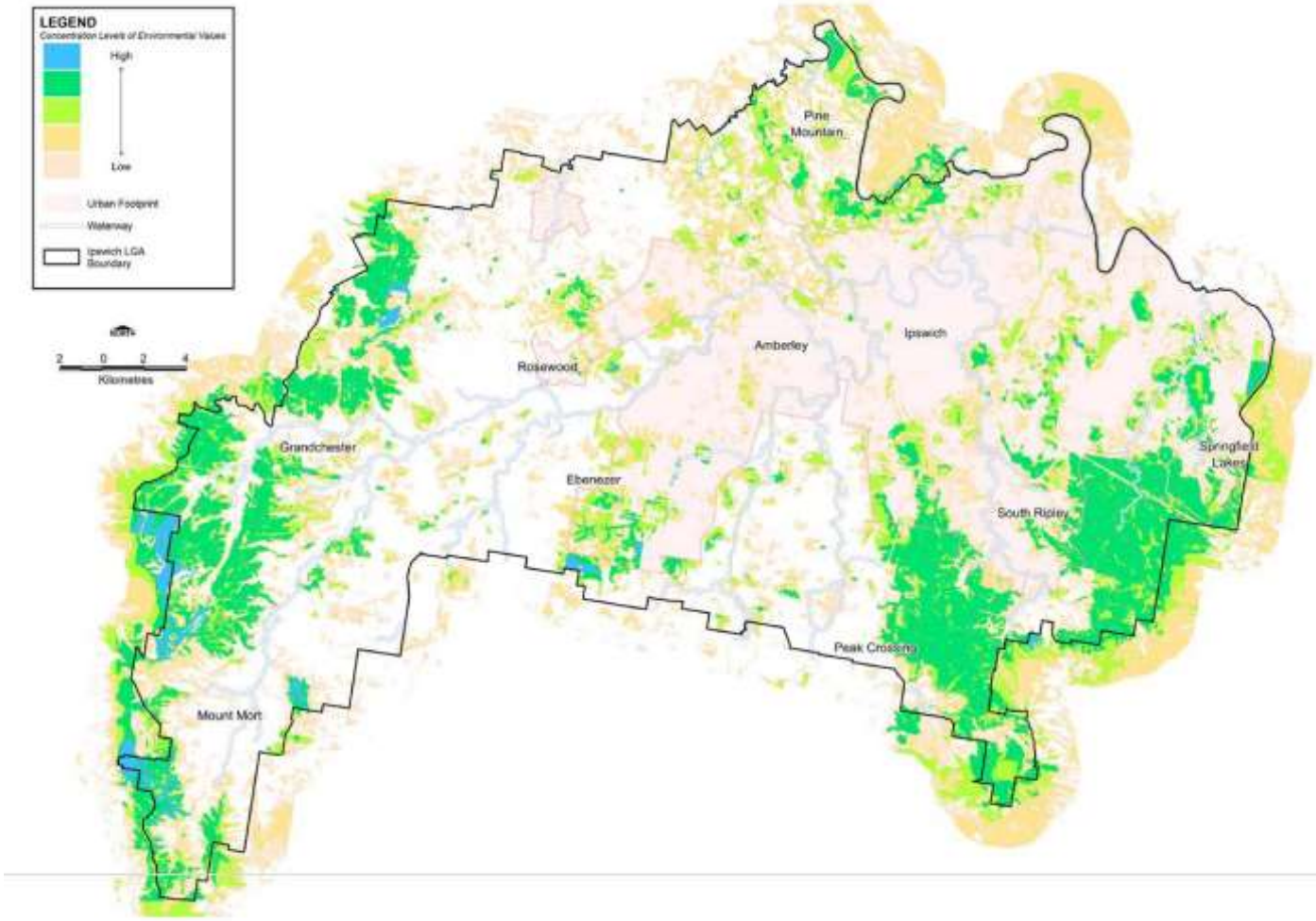
Ipswich's natural environment

A collective term used to describe the diverse terrestrial and aquatic ecosystems that make up the city's habitat network.

Ipswich Natural Environment Policy

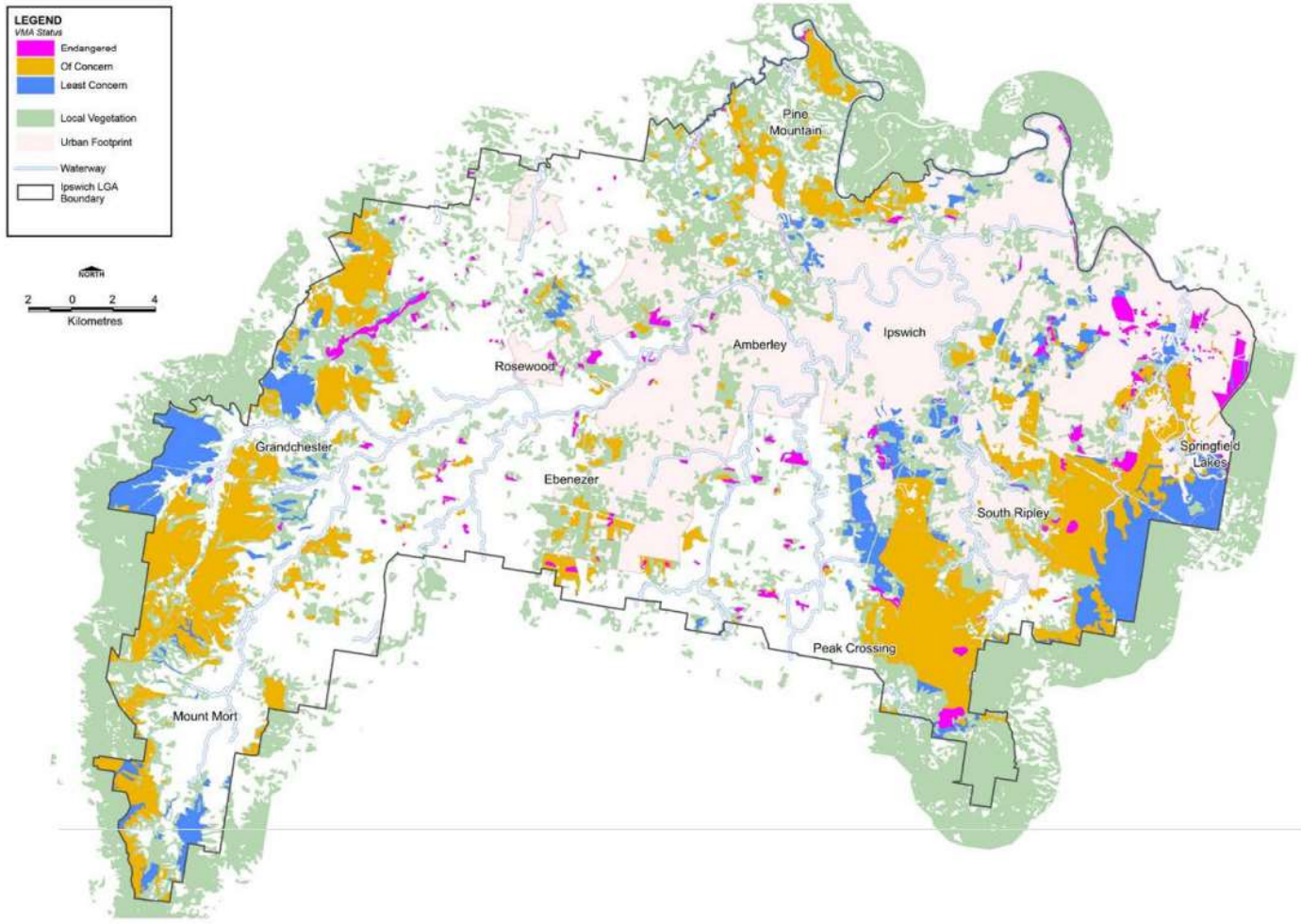
46 rare and threatened species of fauna and flora

Ipswich biodiversity values



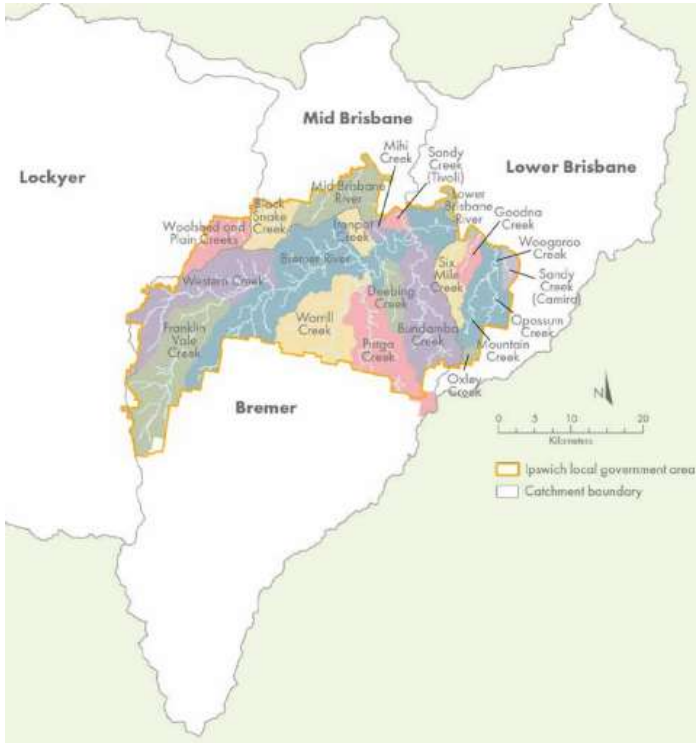
E2DESIGNLAB

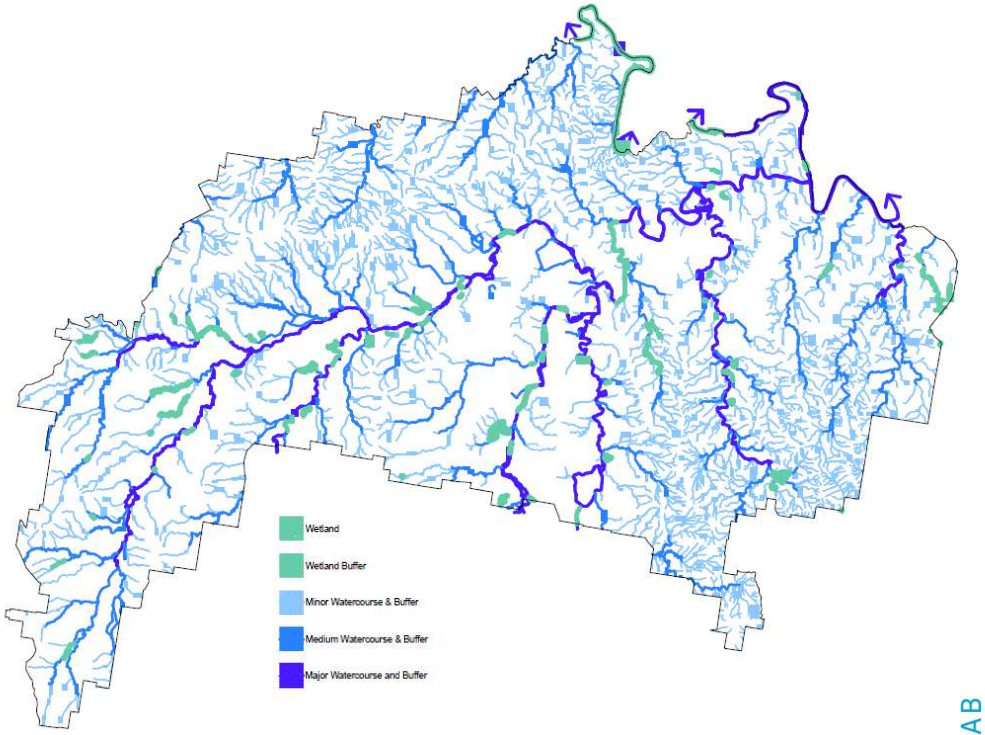
Ipswich vegetation

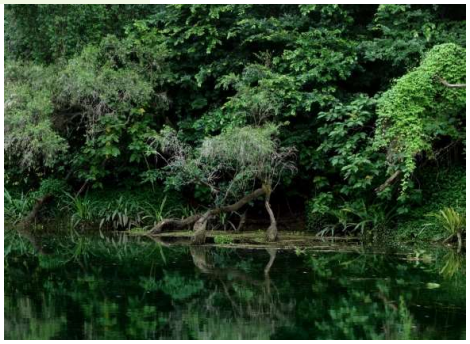


E2DESIGNLAB

Ipswich waterways and wetlands

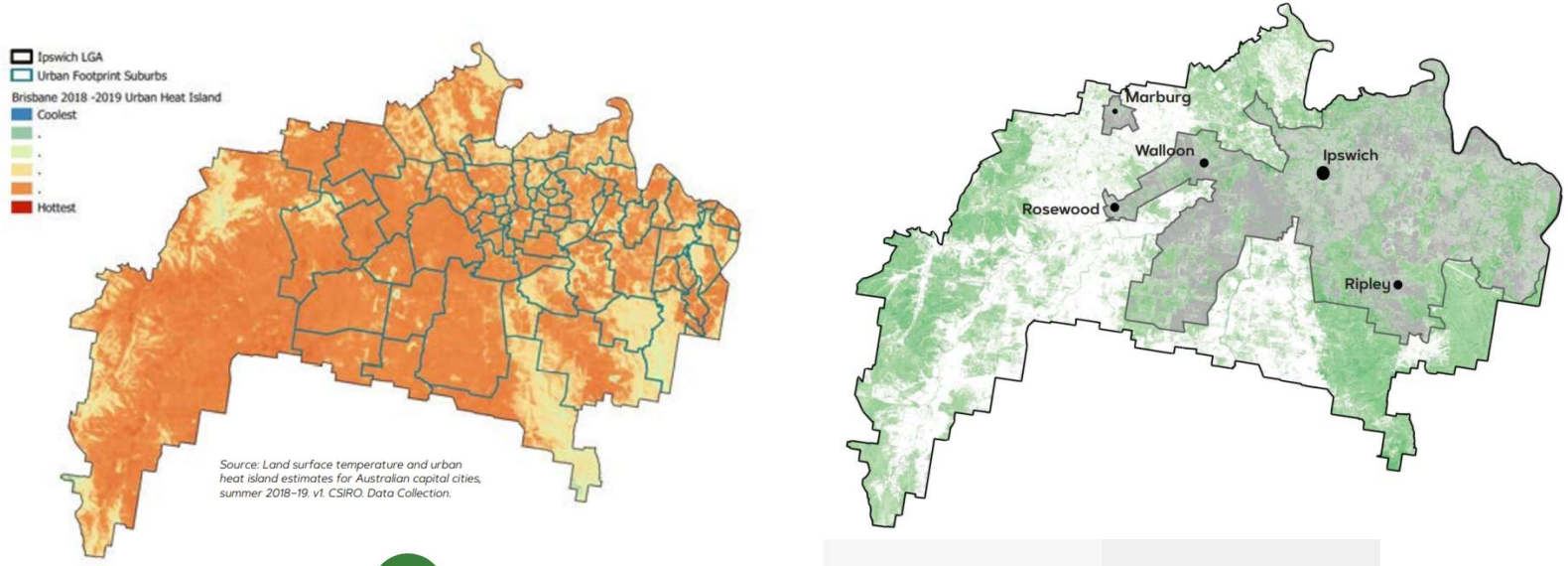






E2DESIGNLAB

Ipswich green cover



41.4%
canopy
(typically over 3m)
UP 5.9% since 2016

3.2%
shrub
(typically below 3m)
DOWN -7.1% since 2016

47.8%
grass
and bare ground
UP 0.9% since 2016

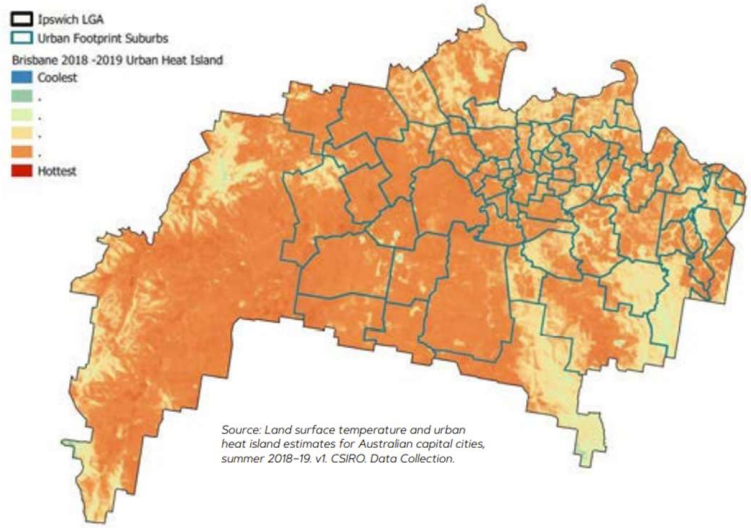
7.6%
grey
(hard surface, e.g. pavement, roads and roofs)
UP 0.3% since 2016

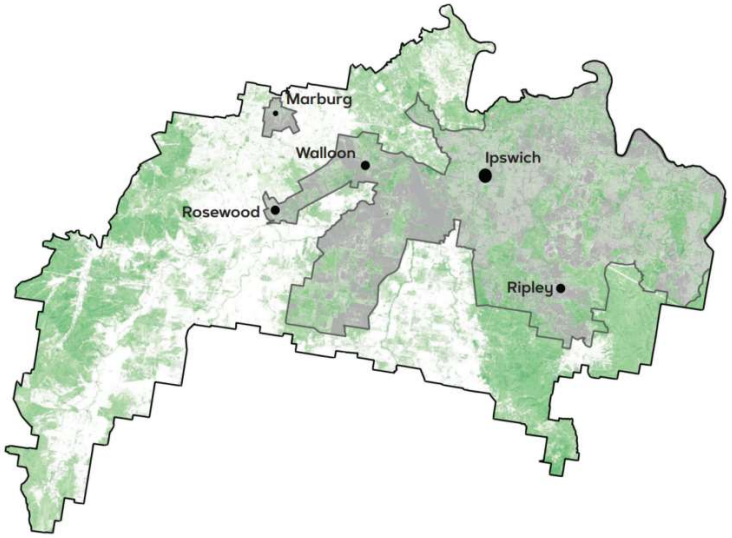
Your green cover

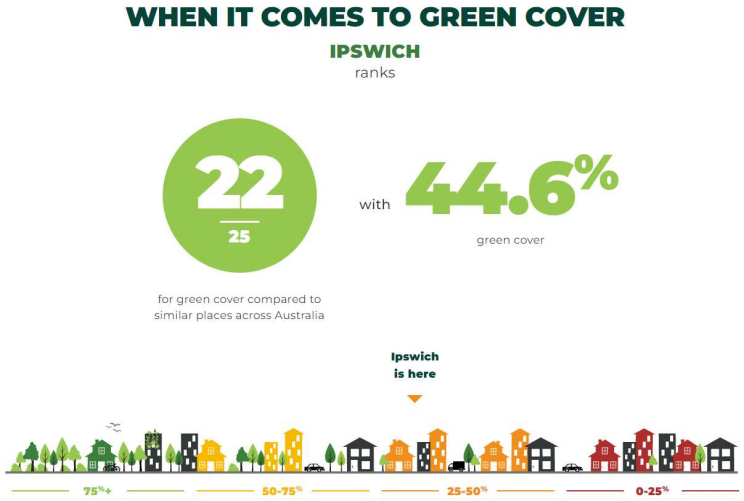
Your green space

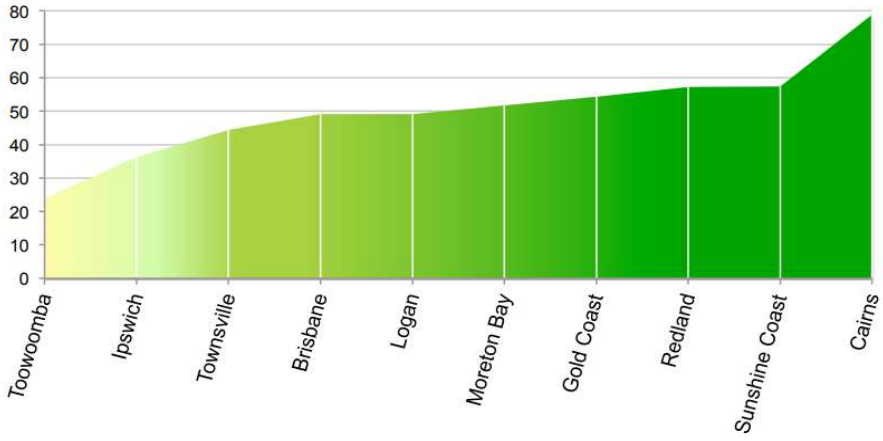
E2DESIGNLAB

Ipswich green cover







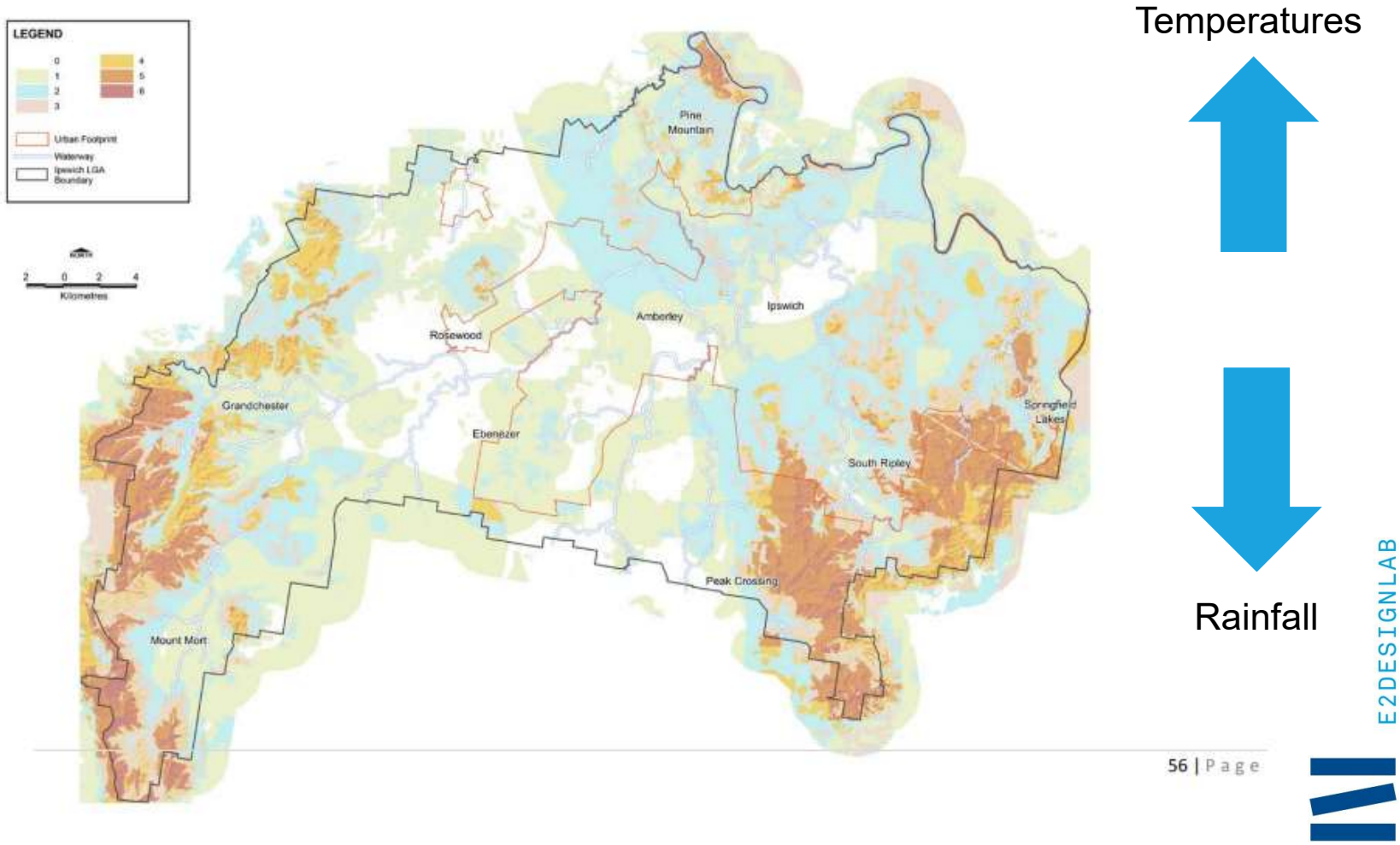


Key threats

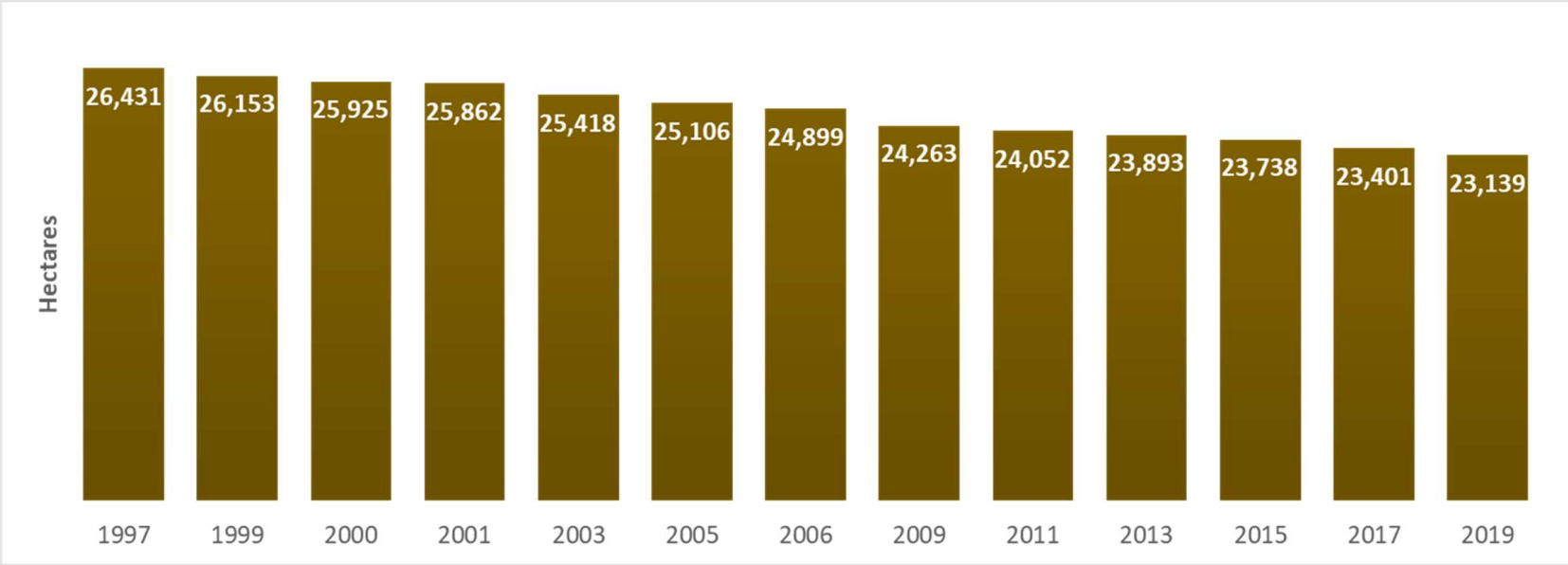
- Climate change
- Loss of native vegetation (including riparian zones)
- Changed water quality and flows
- Channel instability and sediment transport
- Disconnection and loss of floodplains
- Introduced pest plants and animals
- Inappropriate fire regimes

E2DESIGNLAB

Climate change



Vegetation loss

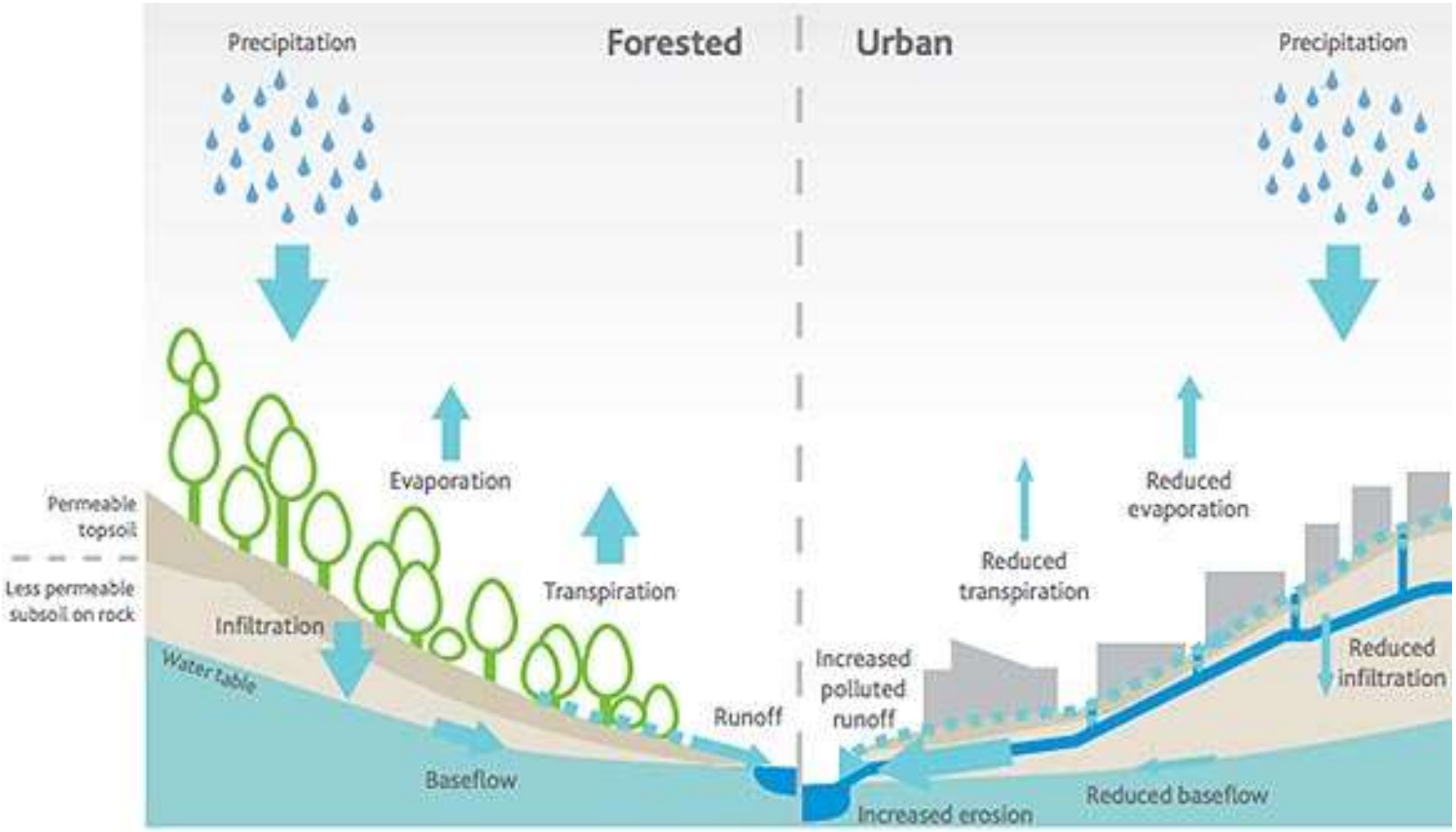


Over the 22-year period from 1997 to 2019 the extent of remnant vegetation in the city decreased by 12%

(Source: Queensland Government – Bioregion and Subregion Analysis of Remnant Regional Ecosystem Vegetation 1997-2019).

E2DESIGNLAB

Water quality and flow changes



E2DESIGNLAB

Waterway condition

Environmental rating for Bremer River (HLW Report Card)

E2DESIGNLAB

What is required?

\ Balancing a growing population and protection and enhancement of environmental values

E2DESIGNLAB

- ✓ Biodiversity and habitat
- ✓ Water and air quality improvement
- ✓ Slowing water flows
- ✓ Cooler temperatures
- ✓ Amenity

- ✗ Limited biodiversity and habitat
- ✗ Poor water quality in large volumes
- ✗ Hotter temperatures and reduced amenity

E2DESIGNLAB

Any questions or thoughts?

Todays workshop

Examining the future of Ipswich's planning scheme in relation to its:

Biodiversity and vegetation	Waterway health	Urban greening
		

E2DESIGNLAB

BIODIVERSITY AND VEGETATION

E2DESIGNLAB

What should be achieved?

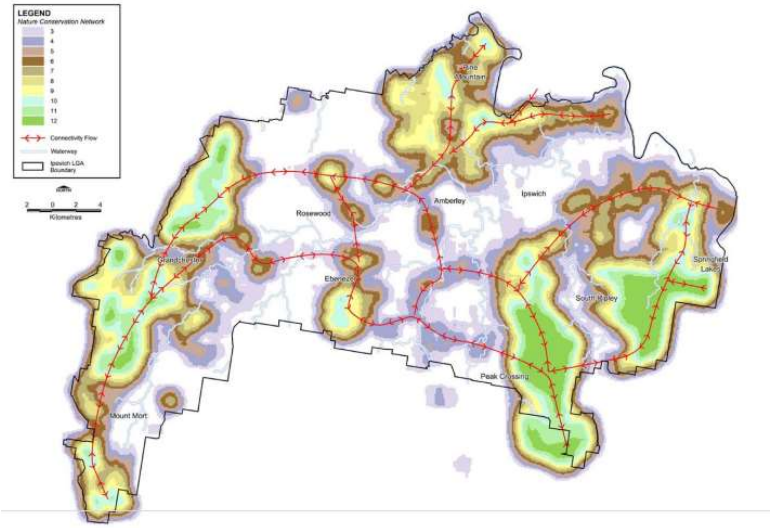
Natural habitat areas should:

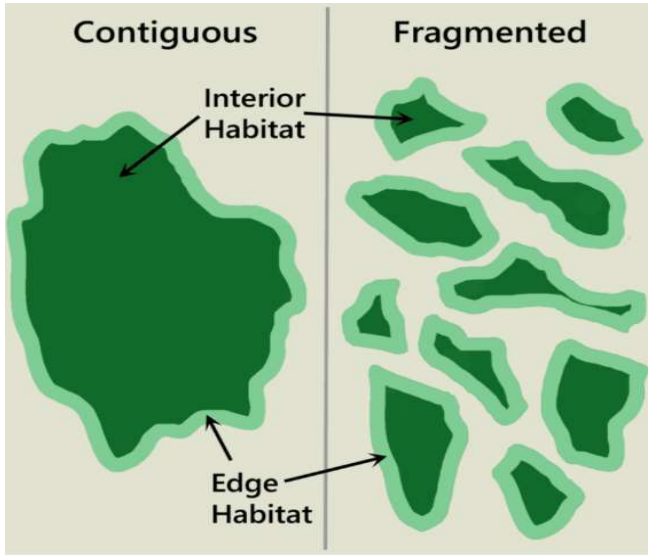
\ Be large, contiguous areas of native vegetation

\ Reduced proportion of edges in relation its total area

\ Be connected across the landscape with corridors of sufficient width

\ Be representative of the range of natural ecosystems across Ipswich

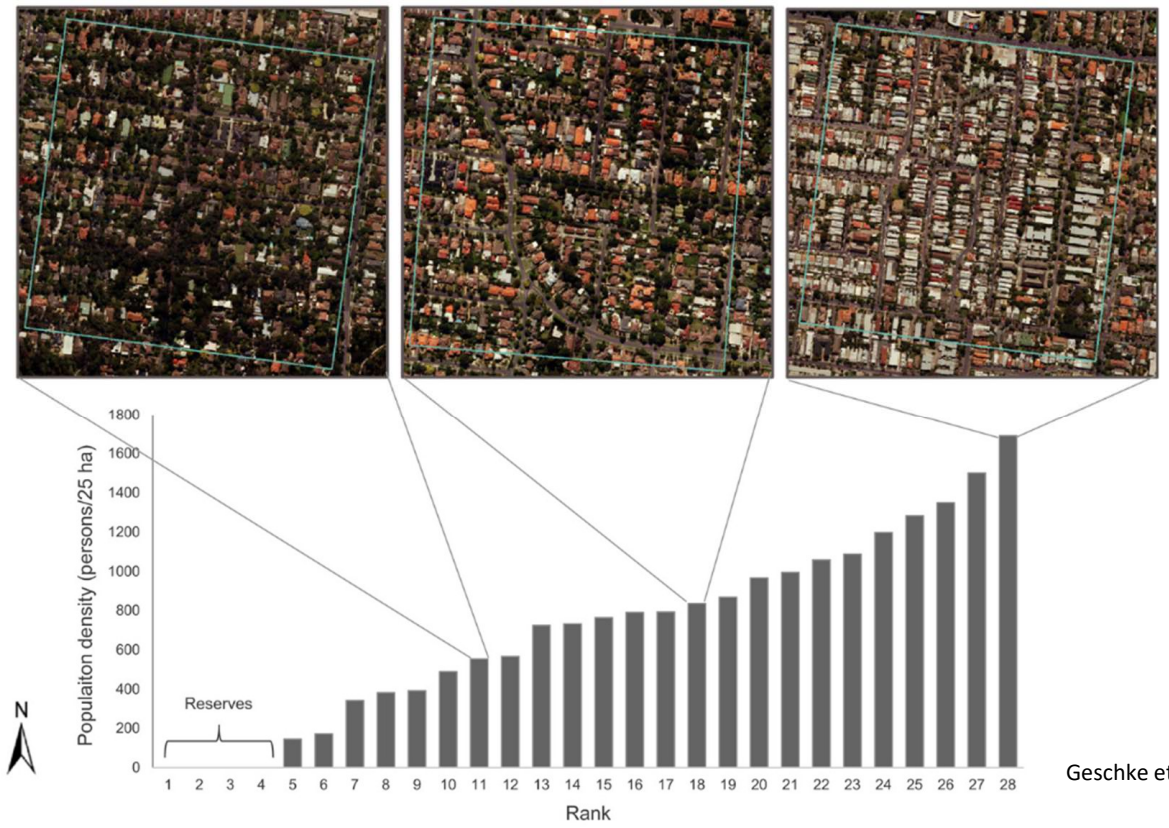




E2DESIGNLAB

What should be achieved?

Urban areas can also support biodiversity if designed well.
Ideally consolidated into larger areas and greater canopy cover.



Geschke et al, 2018

E2DESIGNLAB

How can this be achieved?

Protect high value natural environment areas:

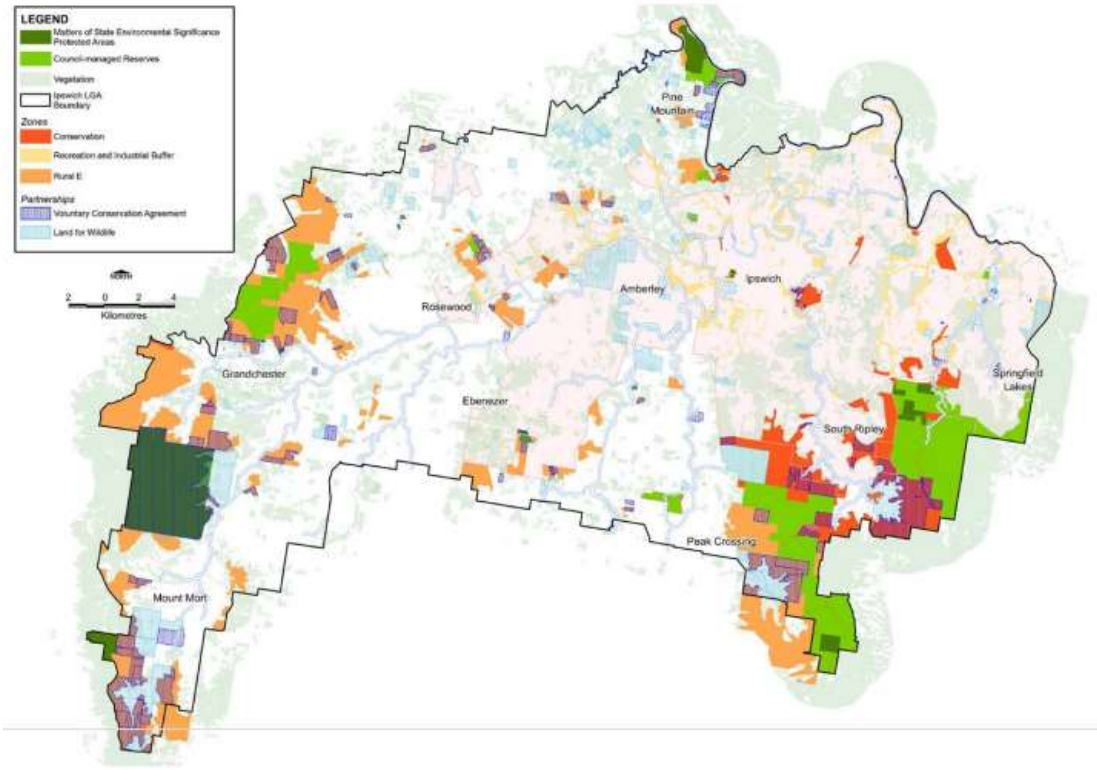
\ Acquisitions

\ Zoning

\ Covenants

\ Vegetation protection orders

\ Legislation



Require biodiversity outcomes in developments:

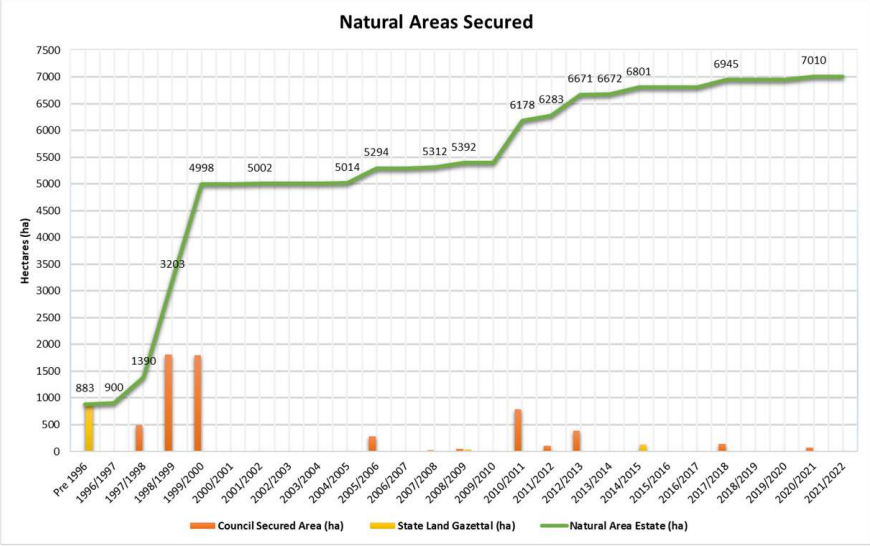
\ Overlays, codes, planning scheme policies

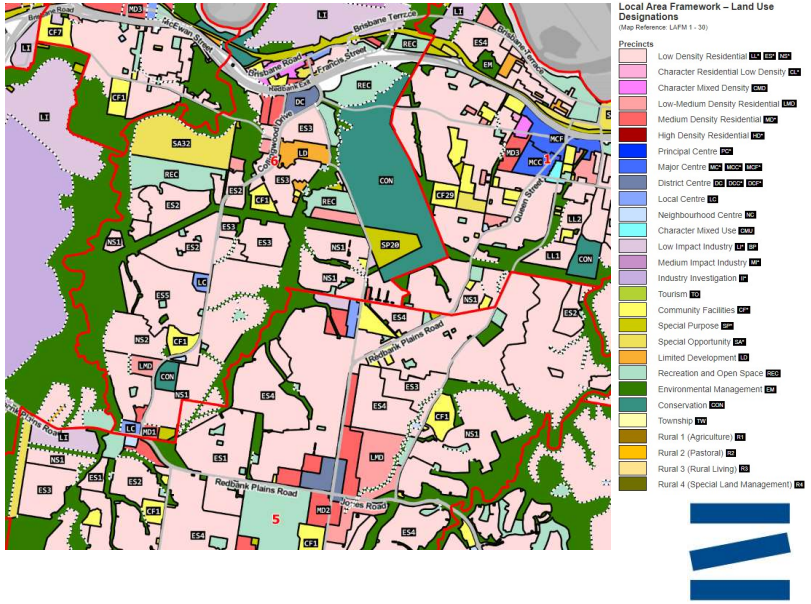
Biodiversity protection

Legislative protection:
- Federal
- State
- Local

Council ownership / management :
- Acquisitions
- Natural area estate

Land use zoning:
- Conservation
- Environmental Management
- Rural 4 – Special land management





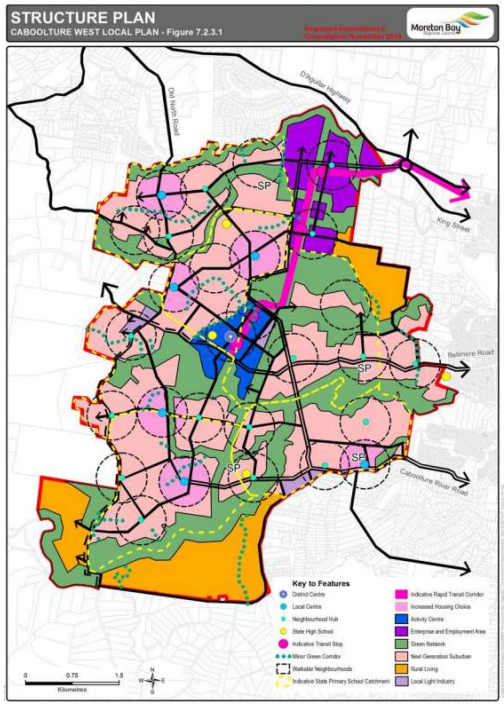
Biodiversity requirements

Overlay codes:
- Biodiversity outcomes

Structure plans:
- Locally focused planning outcomes

Planning scheme policies:
- Ecological assessments
- Management plans
- Guidelines

Figure 7.2.3.1 - Caboolture West structure plan



SCENIC RIM

Sch 6.2.5 Planning Scheme Policy 5 – Ecological Assessments

E2DESIGNLAB

Any questions or thoughts?

Desired outcomes:
- Larger, intact areas of vegetation
- Connection between vegetation remnants

Protection:
- Acquisitions
- Zoning
- Covenants
- Legislation

Biodiversity requirements:
- Overlays, codes, planning scheme policies

E2DESIGNLAB

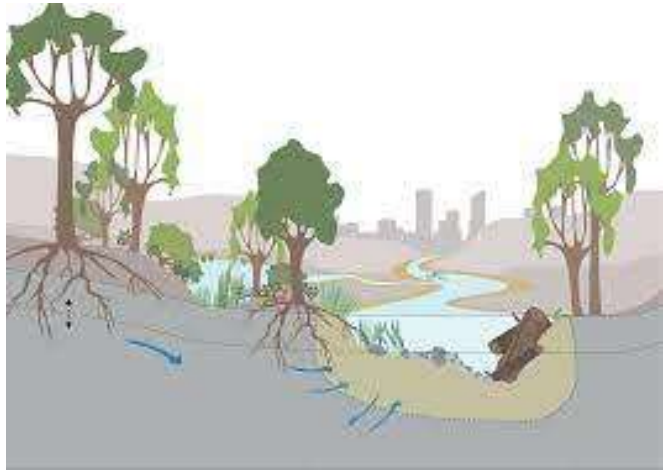
WATERWAY HEALTH

E2DESIGNLAB

What should be achieved?

Protect natural catchment and waterway conditions in terms of:

- Riparian zone vegetation
- Flow volumes, frequency and velocities
- Water quality
- Floodplain engagement and function
- Natural geomorphology, in-stream habitat and connectivity



From: https://watersensitivecities.org.au/wp-content/uploads/2018/11/Improving-ecological-function-of-urban-waterways_compressed.pdf

E2DESIGNLAB

How can this be achieved?

Protect riparian zones and high value waterways:

\ Zoning, overlay codes

Require waterway and wetland health outcomes in developments:

\ Riparian restoration and channel stabilization

\ Stormwater management

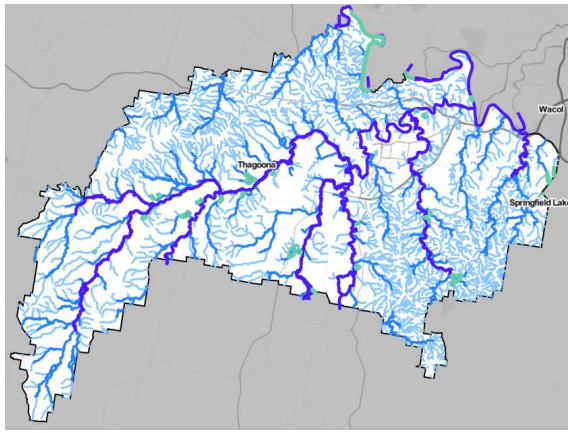
Waterway protection

HEV waterway protection:

- Identification and requirements for HEV waterways (e.g. no development, LID or no offsetting)

Riparian buffers:

- Planning scheme overlays / zoning



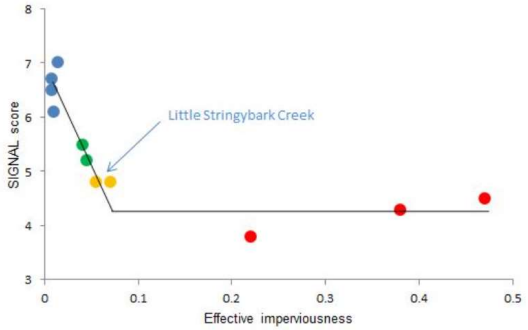
E2DESIGNLAB

Stormwater management

Water quantity:
- Natural hydrology protection

Water quality:
- Construction and operational phases

Overlays, codes, planning scheme polices, drainage schemes and guidelines



Little Stringybark Creek

Environmental Significance Overlay

Appendix 2 – Stormwater management design objectives

Table A: Construction phase – stormwater management design objectives

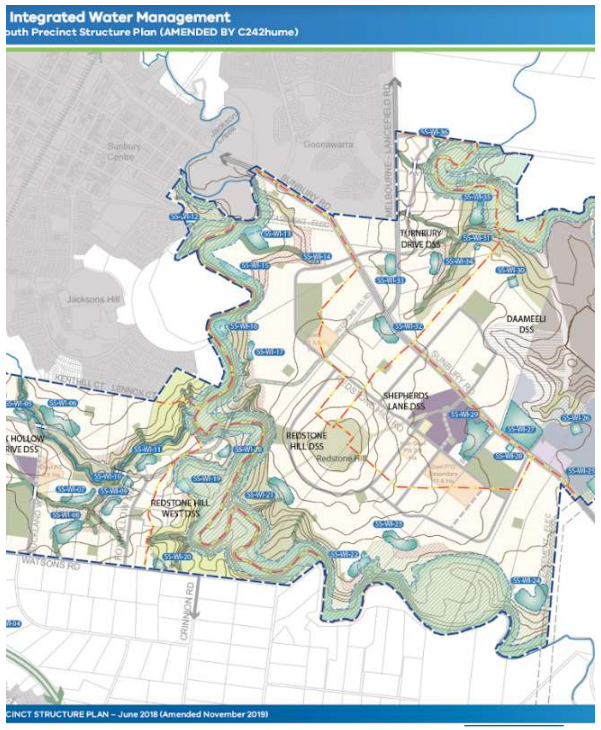
Application:

- Applies to all climatic regions.

Part 1 Construction phase – stormwater management design objectives[12]

Issue	Desired outcomes
Drainage control	1. Manage stormwater flows around or through areas of exposed soil to avoid contamination. 2. Manage sheet flows in order to avoid or minimise the generation of rill or gully erosion. 3. Provide stable concentrated flow paths to achieve the construction phase stormwater management design objectives for temporary drainage works (part 2). 4. Provide emergency spillways for sediment basins to achieve the construction phase stormwater management design objectives for emergency spillways on temporary sediment basins (part 3).
Erosion control	1. Stage clearing and construction works to minimise the area of exposed soil at any one time. 2. Effectively cover or stabilise exposed soils prior to predicted rainfall. 3. Prior to completion of works for the development, and prior to removal of sediment controls, all site surfaces must be effectively stabilised[13] using methods which will achieve effective short-term stabilisation.
Sediment control	1. Direct runoff from exposed site soils to sediment controls that are appropriate to the extent of disturbance and level of erosion risk. 2. All exposed areas greater than 2500 metres[2] must be provided with sediment controls which are designed, implemented and maintained to a standard which would achieve at least 80% of the average annual runoff volume of the contributing catchment treated (i.e. 80% hydrological effectiveness) to 50mg/L Total Suspended Solids (TSS) or less, and pH in the range (6.5–8.5).
Litter, hydrocarbons and other contaminants	1. Remove gross pollutants and litter. 2. Avoid the release of oil or visible sheen to released waters. 3. Dispose of waste containing contaminants at authorised facilities.

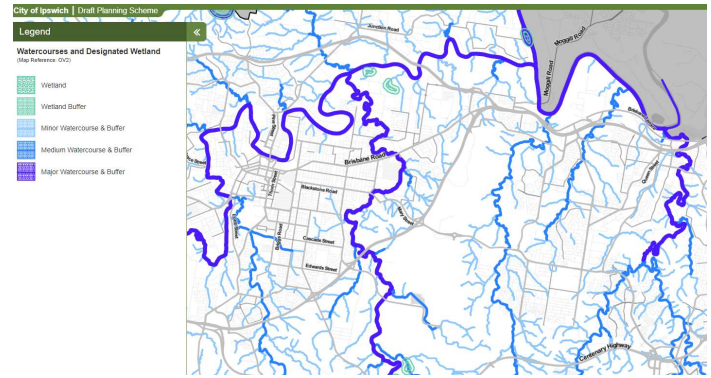
Climatic region	Design objectives Reductions in mean annual load from unmitigated development (%)				
	Total suspended solids (TSS)	Total phosphorus (TP)	Total nitrogen (TN)	Gross pollutants >5mm	Waterway stability management
South East Queensland	80	60	45	90	Limit the peak 1-year ARI event discharge within the receiving waterway to the pre-development peak 1-year ARI discharge
Central Queensland (south)	85	60	45	90	
Central Queensland (north)	75	60	40[15]	90	
Cape York[14], wet tropics and dry tropics	80	60[16]	40	90	
Western Queensland[14]	85	60	45	90	

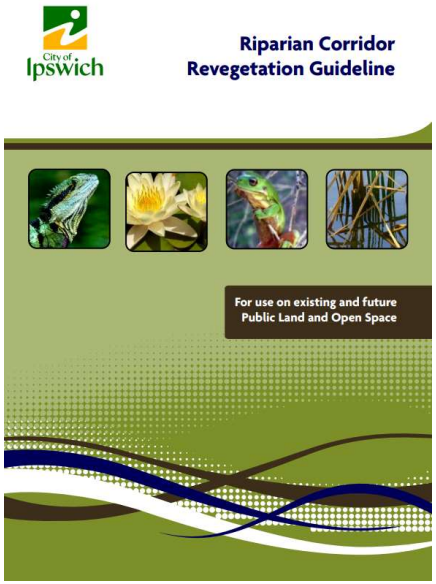


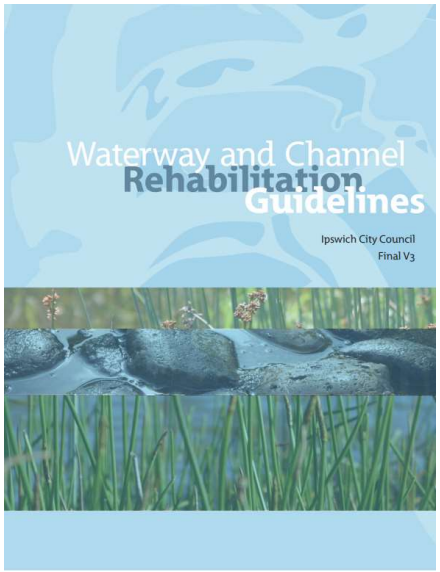
Waterway improvement

Waterway improvement requirements

- Riparian restoration and channel stabilisation works







E2DESIGNLAB

Any questions or thoughts?

<u>Desired outcomes:</u>
- Protect high value waterways
- Manage stormwater
- Improve waterways

<u>Protection:</u>
- HEV waterway protection
- Riparian buffer protection

<u>Waterway requirements:</u>
- Stormwater quantity
- Stormwater quality
- Waterway improvements

E2DESIGNLAB

URBAN GREENING

E2DESIGNLAB

What should be achieved?

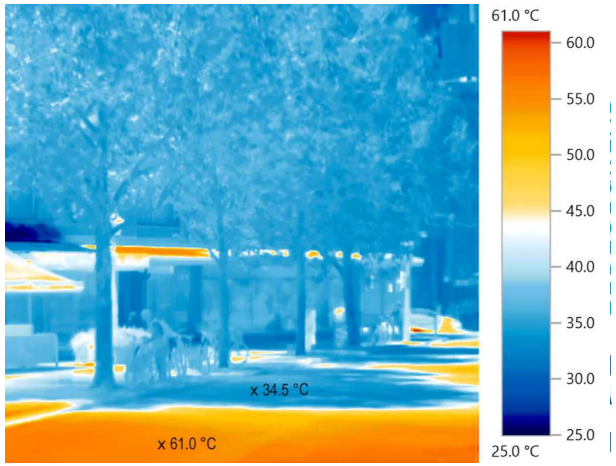
Provision of more resilient urban green infrastructure including:

- Trees – on private land, public parks and streets
- Urban forests
- Parklands
- Urban gardens

From: https://watersensitivecities.org.au/wp-content/uploads/2018/11/Improving-ecological-function-of-urban-waterways_compressed.pdf

East Street

Brisbane Street



How can this be achieved?

Protect existing vegetation:

\ Zoning, overlay codes

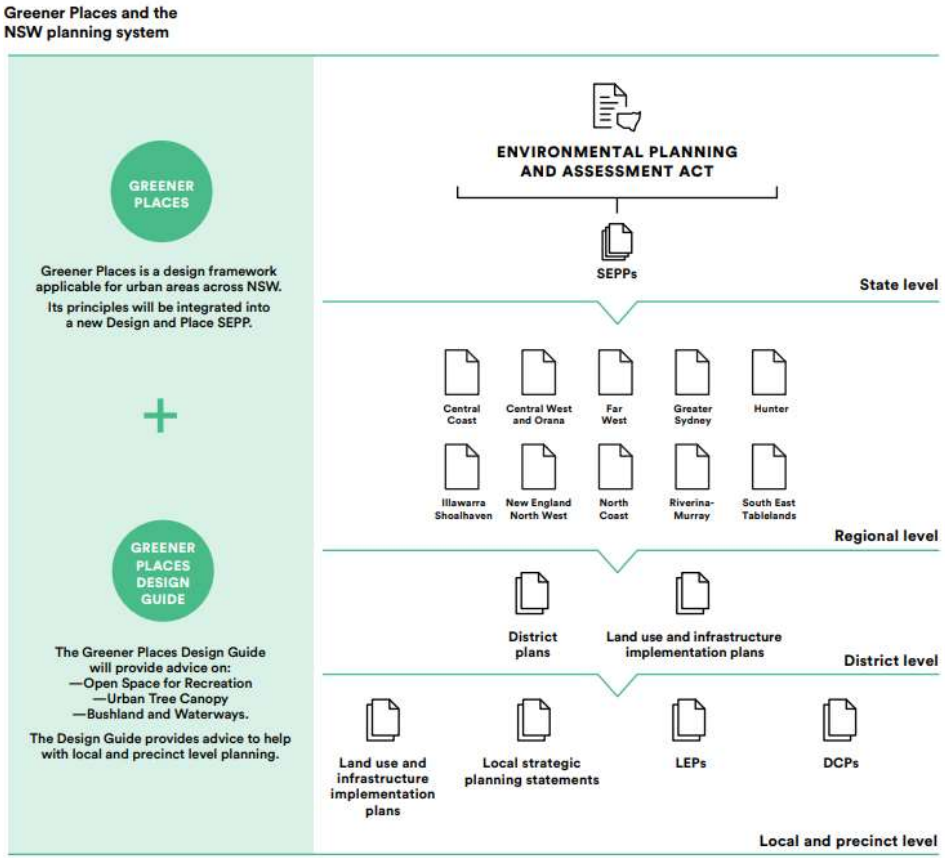
\ Vegetation Protection Orders

Require urban greening outcomes in development:

\ Private allotment vegetation

\ Public open space

\ Street trees



Urban vegetation protection

Legislative protection:
- State
- Local

Planning scheme:
- Zoning
- Overlays

E2DESIGNLAB

Canopy cover requirements

Canopy cover targets

Urban Forest Strategy, City of Melbourne

Increasing canopy cover from 22 per cent to 40 per cent by 2040. Increasing forest diversity with no more than five per cent of one tree species, no more than ten per cent of one genus and no more than 20 per cent of any one family, improving vegetation health.

Greening Sydney Strategy, City of Sydney

Our target is to increase overall green cover to 40% across our area, including a minimum of 27% tree canopy by 2050.

Brisbane's Urban Forest - Brisbane City Council

Increase tree shade cover to 50% for footpaths and bikeways in residential areas by 2031

Greening Our City - City of Gold Coast

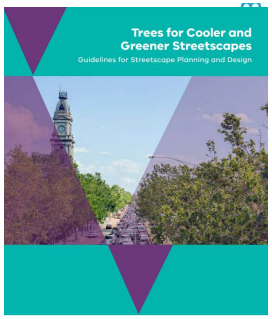
We have an urban tree canopy cover target of 50% by 2031.

Greener building / development requirements:

Street, allotment and building greening requirements – codes, local plans, master plans, standards and guidelines

Green factor score: 0.55 - Moderate greening

Green factor score: 0.84 - Greening optimised



Any questions or thoughts?

<u>Desired outcomes:</u>
- Green canopy cover in urban areas

<u>Protection:</u>
- Legislation
- Overlays

<u>Urban greening requirements:</u>
- Canopy target
- Greener building and developments

E2DESIGNLAB

THANK-YOU

Presenter
E2Designlab

Email@e2designlab.com.au

E2DESIGNLAB