

From the low-hanging fruit to the pick of the bunch

Prioritising urban waterway improvement opportunities across the Parramatta River catchment

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Parramatta River
Catchment Group

The project - two main aims

A prioritisation framework

- A decision support tool useful for member councils

A set of short-listed sites

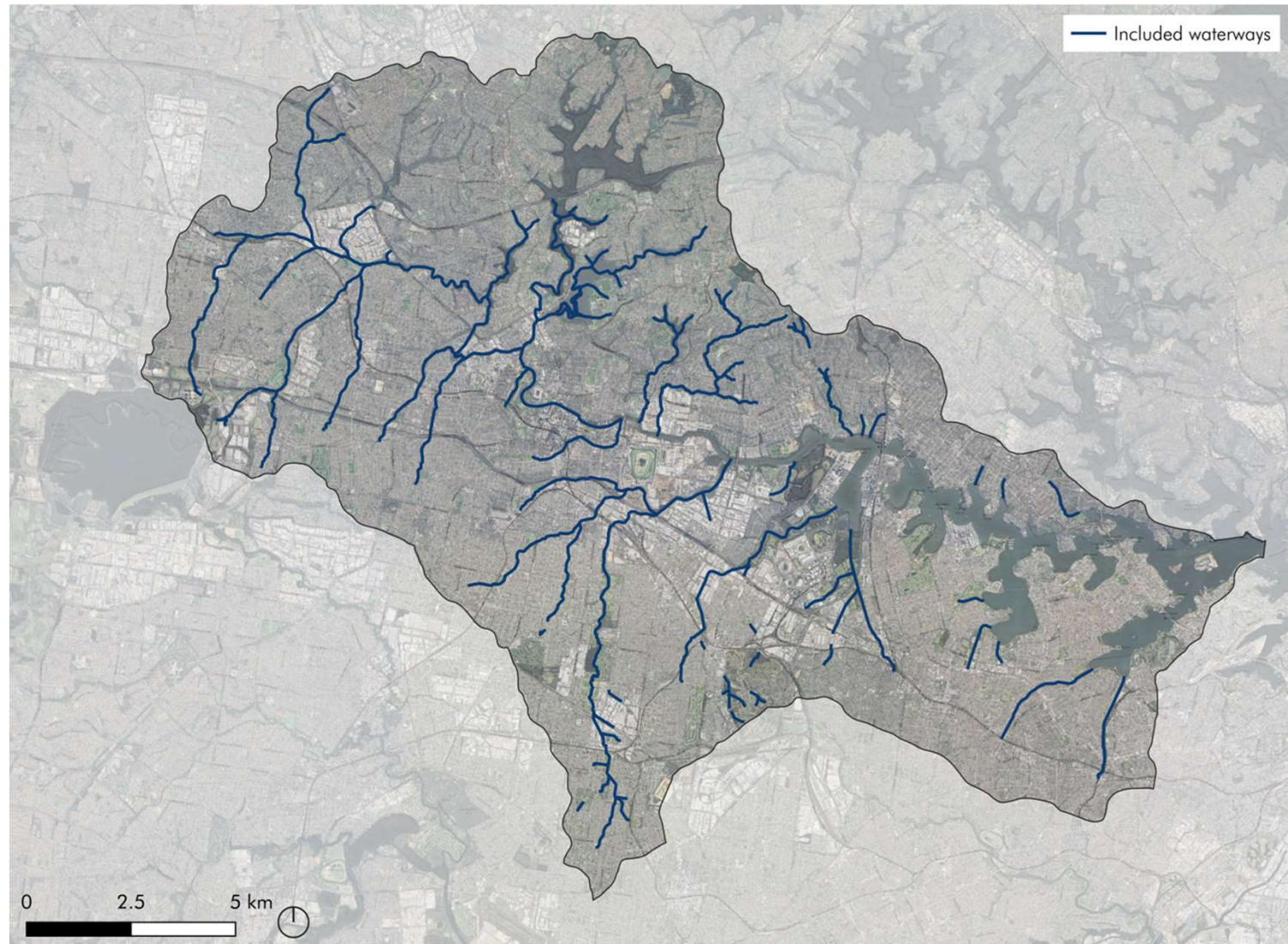
- Approx 20 sites across the Parramatta River catchment

Note - next steps:

- Developing concept designs for selected sites (underway now)
- Capital works (future)

The Parramatta River catchment

Project area:
11 LGAs
41 creeks
(143 km)



Challenge 1: Diverse waterways in the catchment

(a)



Girraween Creek

(b)



Powells Creek

(c)



Darling Mills Creek

Challenge 2: Diverse options for waterway improvement

Naturalisation



Powells Creek
Image: Andrew McMillan

Stabilisation



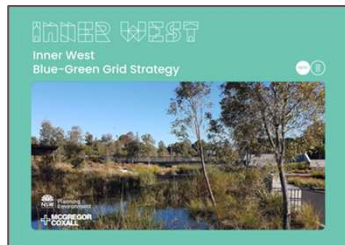
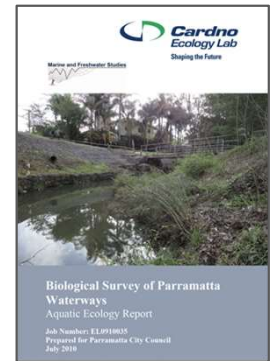
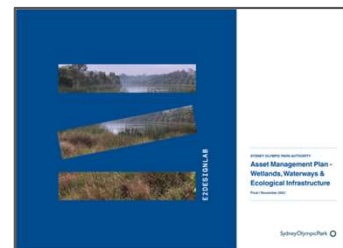
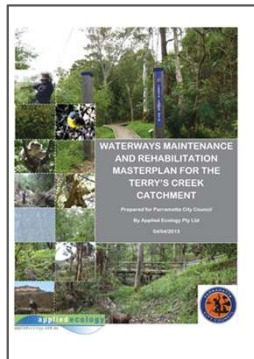
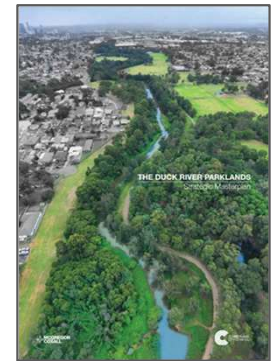
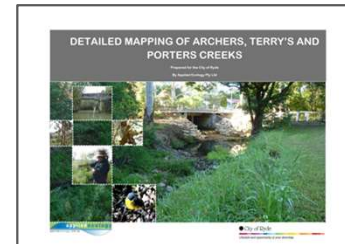
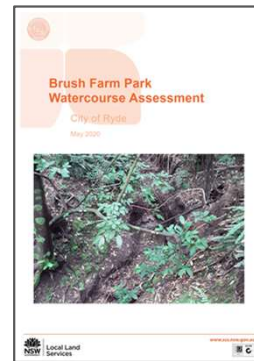
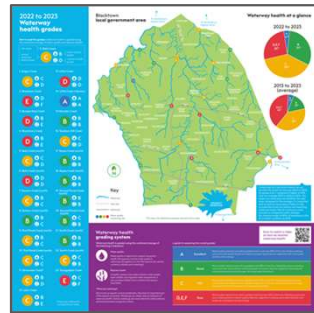
Subiaco Creek
Image: Andrew McMillan

Revegetation



Parramatta River at Wentworth Point
Image: Dragonfly Environmental

Challenge 3: Diverse information available



Prioritisation methods we reviewed

**A rehabilitation
manual for
Australian streams**

(Rutherford, Jerie, &
Marsh 2000)

Logan City Council

**Waterway
Knowledge &
Prioritisation Tool**
(2013?)

**Framework for
prioritising
waterways for
management in
Western Australia**

(Macgregor, Cook,
Farrell, & Mazzella,
2011)

Healthy Land and
Water Qld

**Strategic Waterways
Tool**

(Water by Design
2019)

Focused on
maximising
**ecological
benefits**



Optimising
**multiple
types of
benefits**

Prioritisation methods we reviewed

Aspirational: outcome focused

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2019)

Pragmatic: constraints are considered first

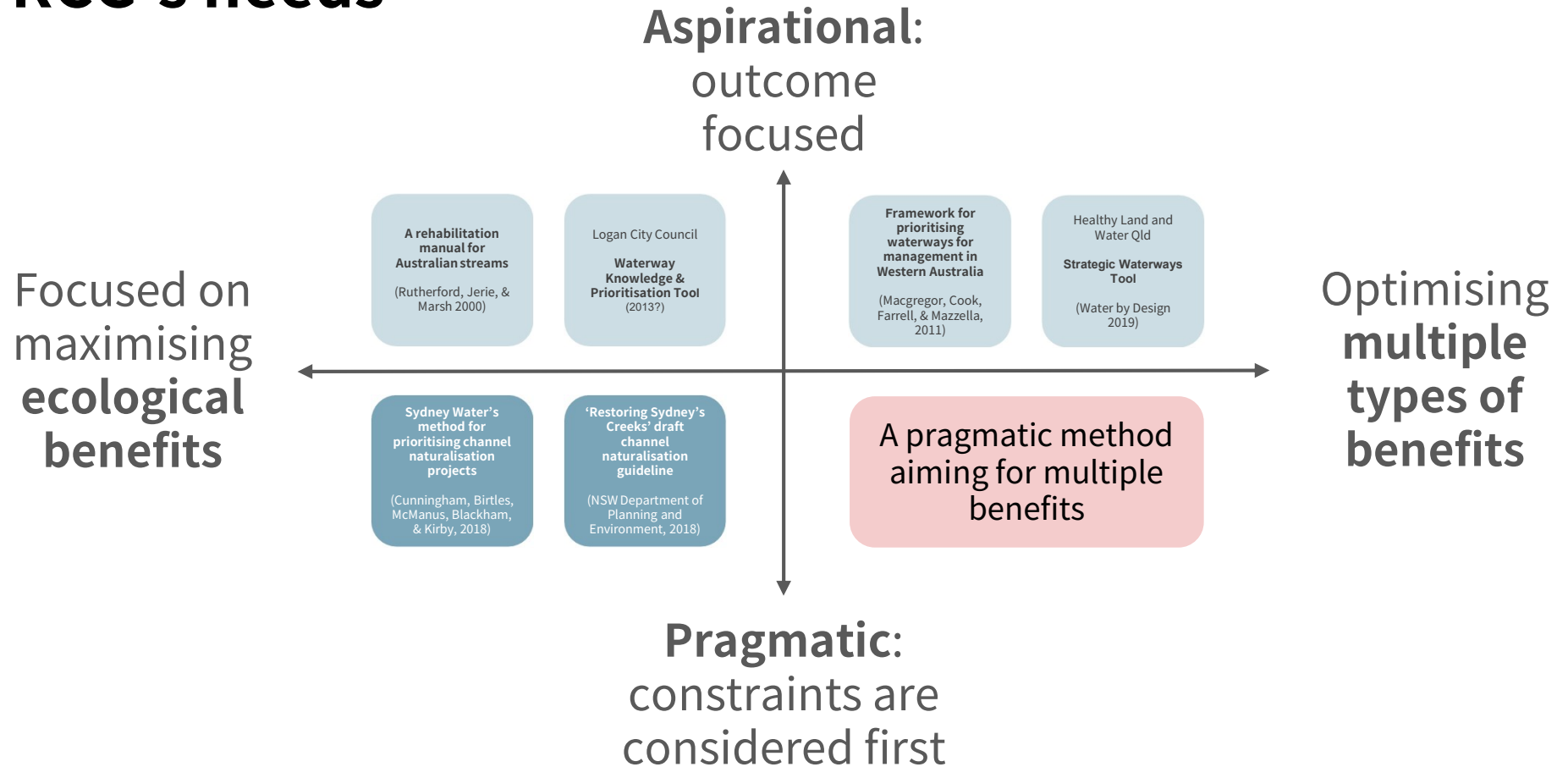
**Sydney Water's
method for
prioritising channel
naturalisation
projects**

(Cunningham, Birtles,
McManus, Blackham,
& Kirby, 2018)

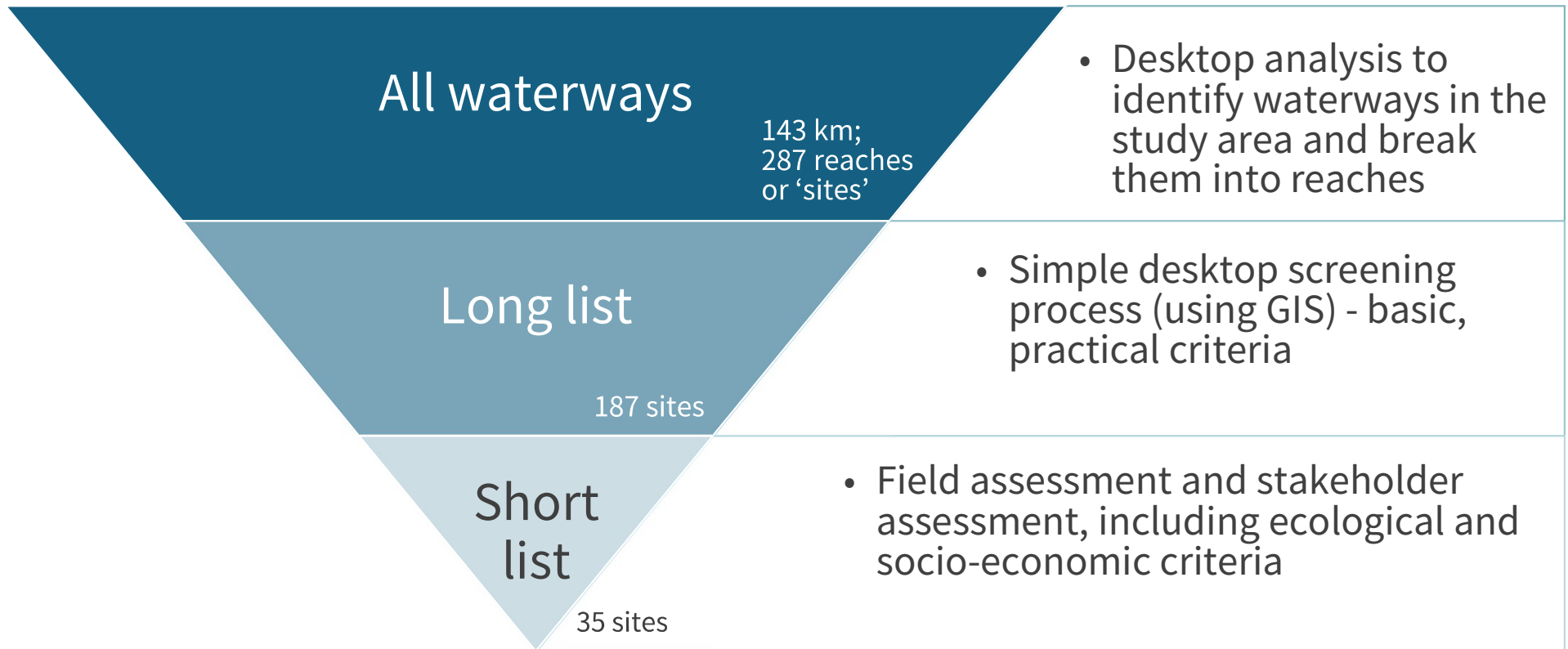
**'Restoring Sydney's
Creeks' draft
channel
naturalisation
guideline**

(NSW Department of
Planning and
Environment, 2018)

PRCG's needs



The method developed for PRCG



Long listing

Negative screen

Land ownership/ management

- Exclude sites with no public land

Available space

- Exclude sites where there is no space available for waterway restoration

Significant known constraints

- Exclude sites where there are clearly other major constraints (e.g. lack of access)

Positive screen

Existing priorities

- Any waterways already identified as a priority by councils (e.g. where naturalisation has been proposed in an existing plan)

Short listing

Field assessment of >20 waterways (approx. 80 km)

Scoring system

	Waterway health indicators			Public access	Recovery potential	
	Waterway stability	Geomorphology	Vegetation		Waterway health	Community/cultural
1						
2						
3						
4						
5						

Four types of short-listed sites



High value
waterways



Stream
stability
priorities



Potential
for
waterway
health
recovery



Potential
for greater
cultural
value

Applying the Prioritisation Framework



Ecological recovery
potential

5

relatively good condition, connected section to both rifle range creek with similarly good value waterway. Good overall quality waterway that could be a strong candidate for protection.

Darling Mills Creek - Section 1

- High Conservation Value
- Site already actively protected and managed by Council

Validates Council decision to manage this site



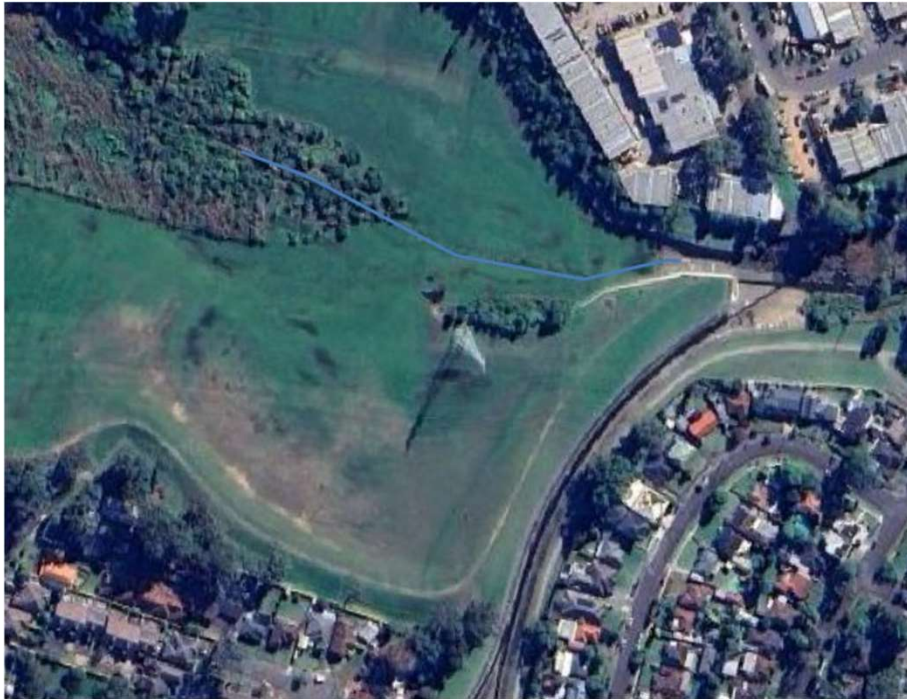
Waterway stability

2

steep banks in parts, signs of significant erosion. Ponds Walk is undermined by erosion. Possible evidence of previous rock armouring work failed



Subiaco Creek - Section 4



Ecological recovery potential	4	creek has significant potential to improve with planting of further native trees and shrubs, large area reducing risk of weed incursion. Potential to daylight pipe section and create a complete natural section of creek from concrete basin
Cultural recovery potential	4	could potentially improve access with boardwalks/paths – significant potential to improve community use and access (e.g. wetland walk) Some indication that parts of this area is used for sports, but still large space to work with.

Toongabbie Creek Section 2



Waterway stability

5

turfed trapezoidal channel

Cultural recovery
potential

4

the site has an existing well-lit cycleway / shared path that connects to the M7 cycleway / shared path. Opportunity for reinstating channel with benches at differing levels, channel complexity, opportunities for engagement with water. Opportunities for creek crossing from Molyneaux Ave to Lalor Creek Shared Path which connects to M7 cycleway

Lalor Creek Section 5



Ecological
recovery potential

- | | |
|---|---|
| 4 | Creek is nested between residential and sports fields with high chances of weed incursion, signage stating presence of buried high pressure oil pipeline, may limit naturalization feasibility, but if naturalization is possible (even in part) will provide large improvement to creek. |
|---|---|

Archer Creek - Section 4