ACT Healthy Waterways (Basin Project)

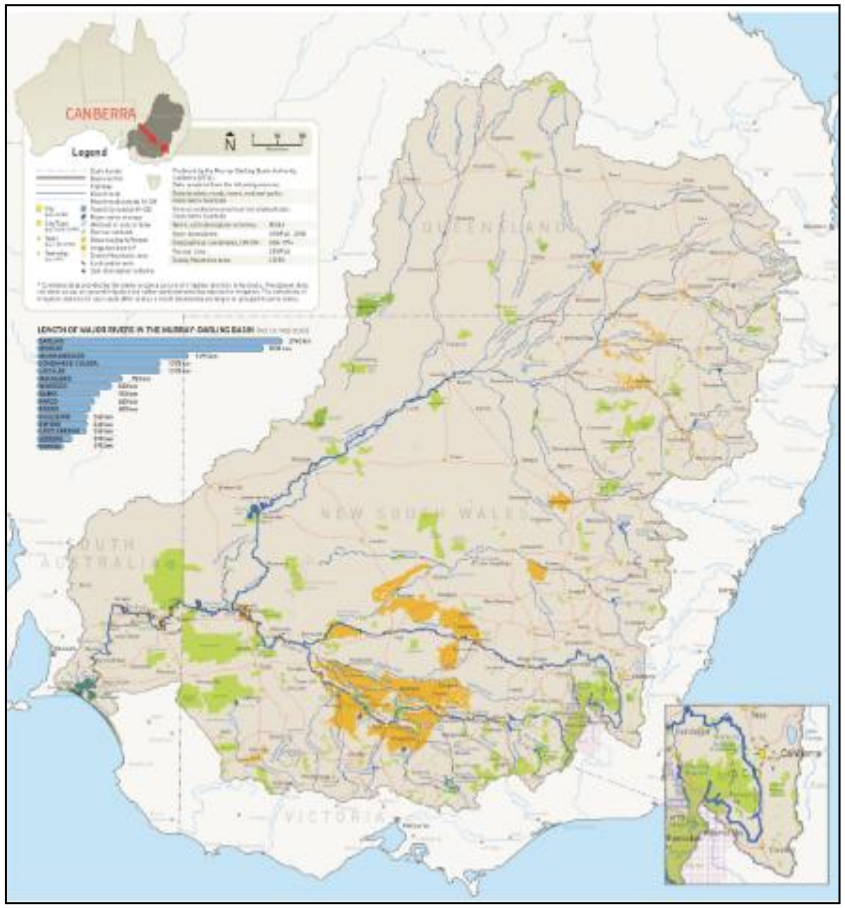
Improving long term water quality in the ACT and the Murrumbidgee River System

Western Greenway Community Panel

Justin Foley
Program Manager

31 August 2016

Basin Project - Project Background



- Up to $85M of Commonwealth funds
- + 10% contribution from ACT
- The Project will improve the long term water quality in the ACT and the Murrumbidgee River System
- Exemplar for the Basin and innovations sought

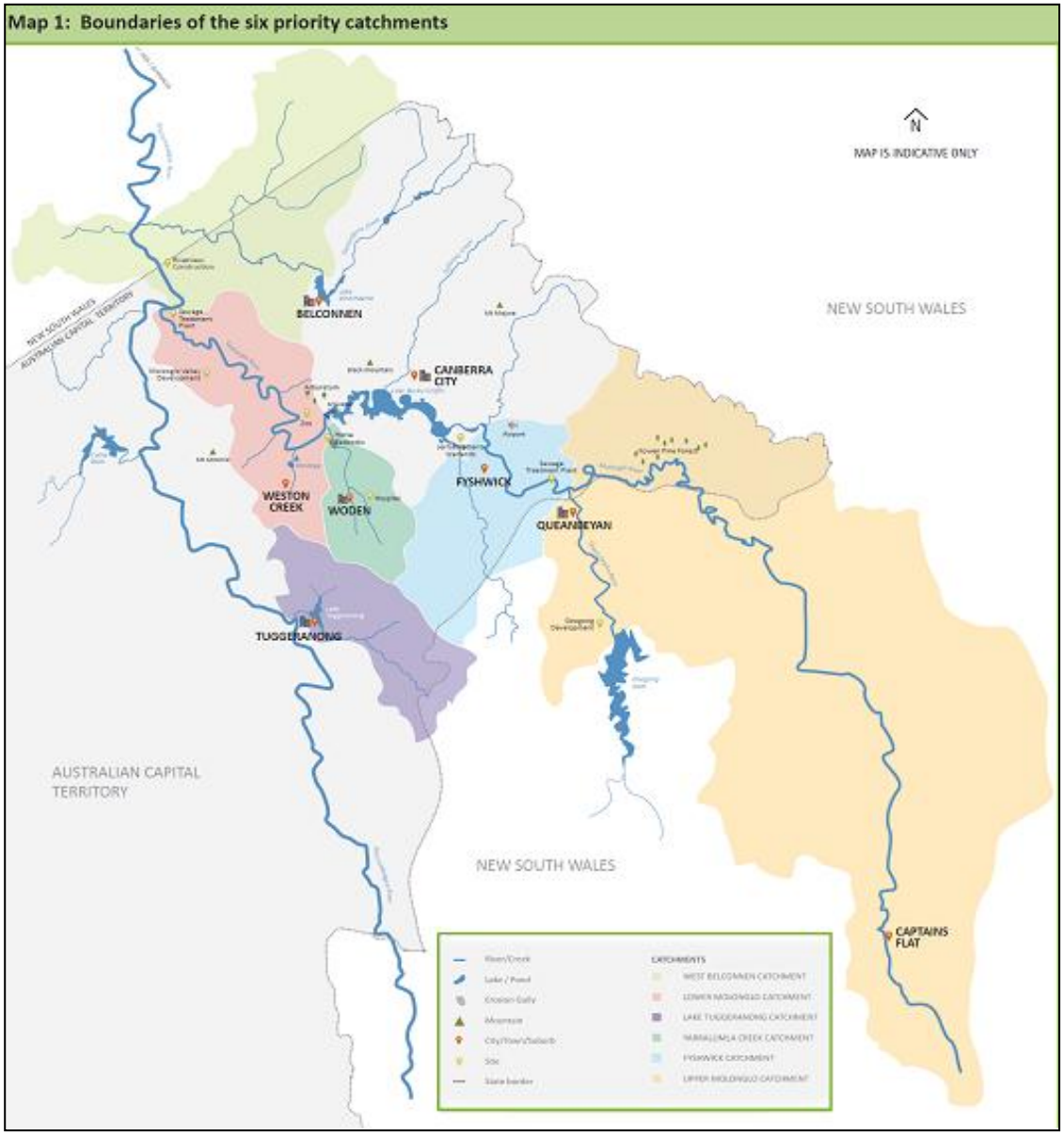
Basin Project – Scope

- Delivered in **two phases** with a focus on six priority catchments

- Catchments selected to achieve representation of the broad variety of catchment types and land development across the Territory

- Focus on retrofitting established urban catchments

Map 1: Boundaries of the six priority catchments



Phase 1 – to May 2016

Investigations

- Audited performance of existing WSUD infrastructure
- Water quality monitored and modelled
  - development of an integrated water quality monitoring framework
- Surveyed community water quality attitudes, values and practices

Phase 1 – to May 2016 (cont)

Option Identification

- 500 options across six priority catchments considered by expert panel

- Concepts developed for 188 catchment and in lake options - tested with the community in July 2015

- Options prioritised according to water quality performance, cost, amenity value, environmental and heritage values and feasibility

Phase 2: 2016 - 2019

- Over $83 million in Commonwealth and ACT government funding for implementation
- Water :
  - Rain gardens (bio-retention),
  - ponds and wetlands,
  - Creek restoration/reconnection/swales,
  - stormwater for irrigation
- Community education program – informed by survey outcomes
- Catchment management coordination across ACT & Region
- Integrated water quality monitoring (incl. Waterwatch)

Community Survey – Outcomes

- Region-wide survey into people's views on our waterways - over 4500 people participated
- Strong support for a range of water quality infrastructure
- Only 38% of residents considered leaf litter and grass clippings entering the stormwater system to be a water quality issue – however water scientists consider this to be a key cause of problems
- Survey outcomes are informing the development of a community education program

Priority and Reserve Projects

- Assets have been sorted into ‘priority’ projects (25) and ‘reserve’ projects (24)
- Aim is to deliver priority assets within our fixed budget and timeframe
- Reserve projects will go ahead if:
  - priority projects become unviable
  - savings are made
  - additional funding sourced
- ACT Government to maintain assets

Next Steps - May 2016 to June 2019

- Community engagement
  - Site level consultation/drop in sessions – September 2016
  - Statutory consultation for development approval:

    October 2016 – February 2017
  - Procurement completed March 2017
- Construction – from mid 2017 to mid 2019

Priority Projects

- **Tuggeranong catchment - nine projects ($27 million)**
- Fyshwick catchment – six projects ($15.9 million)
- Yarralumla Creek catchment - five projects ($16.3 m)
- West Belconnen catchment - two projects ($6.5 million)
- Upper Molonglo catchment - two projects ($3.4 million)
- Lower Molonglo catchment - one project ($9.6 million)
- Public education, catchment works and water quality monitoring and evaluation ($6 million)

Lake Tuggeranong Catchment

- Will remove up to 689,100 kg/year of suspended solids, 954 kg/year of phosphorus and 4533 kg/year of nitrogen from stormwater inflows to the lake

- Eight priority projects along with an in-lake research project proposed

- Four reserve projects identified

Rain garden and potential stormwater use – Chirnside Circuit, Kambah (Landscape -TG003)



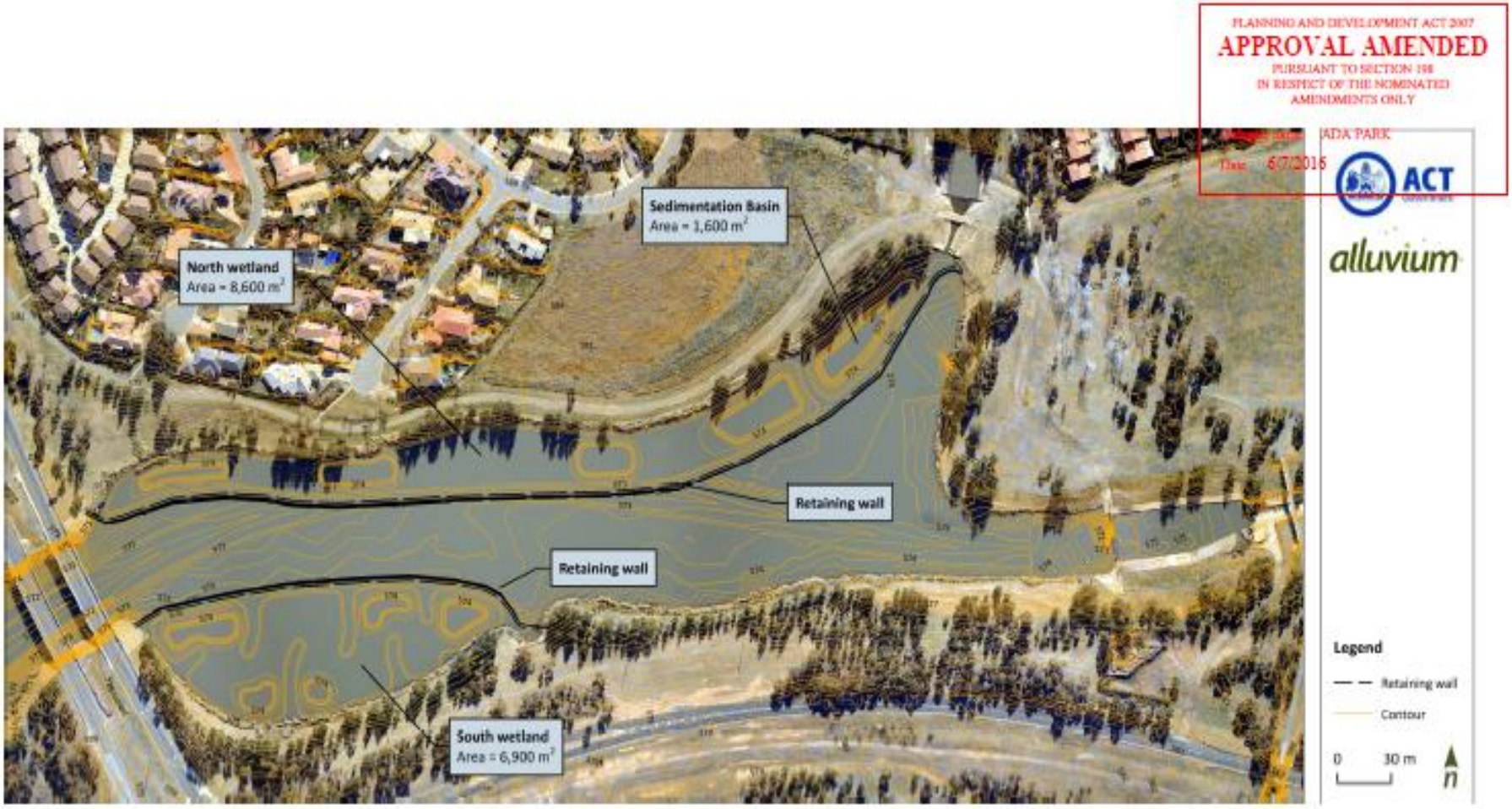
Rain gardens and potential stormwater use – Athllon Drive between Langdon Avenue and Fincham Crescent, Wanniassa (Landscape - TG008)



Rain garden – Upper Stranger Pond, Isabella Plains (Landscape - TG010)



Wetland – Isabella Pond, Drakeford Drive, Monash (TG011C)



Swale – Corlette Crescent (Monash) to Isabella Pond (Landscape – TG012)





Rain garden and potential stormwater use – open space north of Isabella Drive near Kirkcaldie Circuit, Chishlom (Landscape - TG023)



Rain gardens - Fadden Pines Reserve, Fadden (Landscape - TG029)



Pond and potential stormwater use – between Kett Street and Drakeford Drive, Kambah (Landscape - TG030)

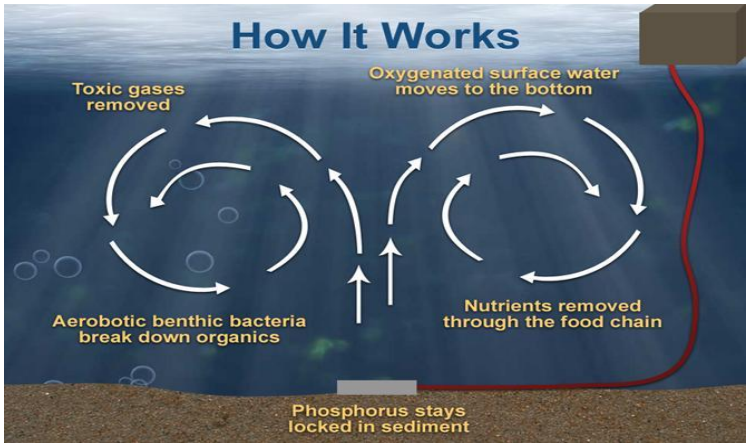


In-lake Research Project (Priority Project)

- To identify the effect of changing sediment movement and oxygen profile on algal dynamics, for example:
  - managing change in the movement of sediment potentially using sediment curtains
  - managing dissolved oxygen profiles potentially using a bubblers
- Currently being scoped – 2017 implementation.







Community Consultation

- Six weeks process - closing on 30 September 2016

- Comment on designs at: https://www.yoursay.act.gov.au/

- Six drop-in session: one in each of the priority catchments:
  - 15 September, Tuggeranong Library, Cowlishaw Street, 3.00 – 7.00pm

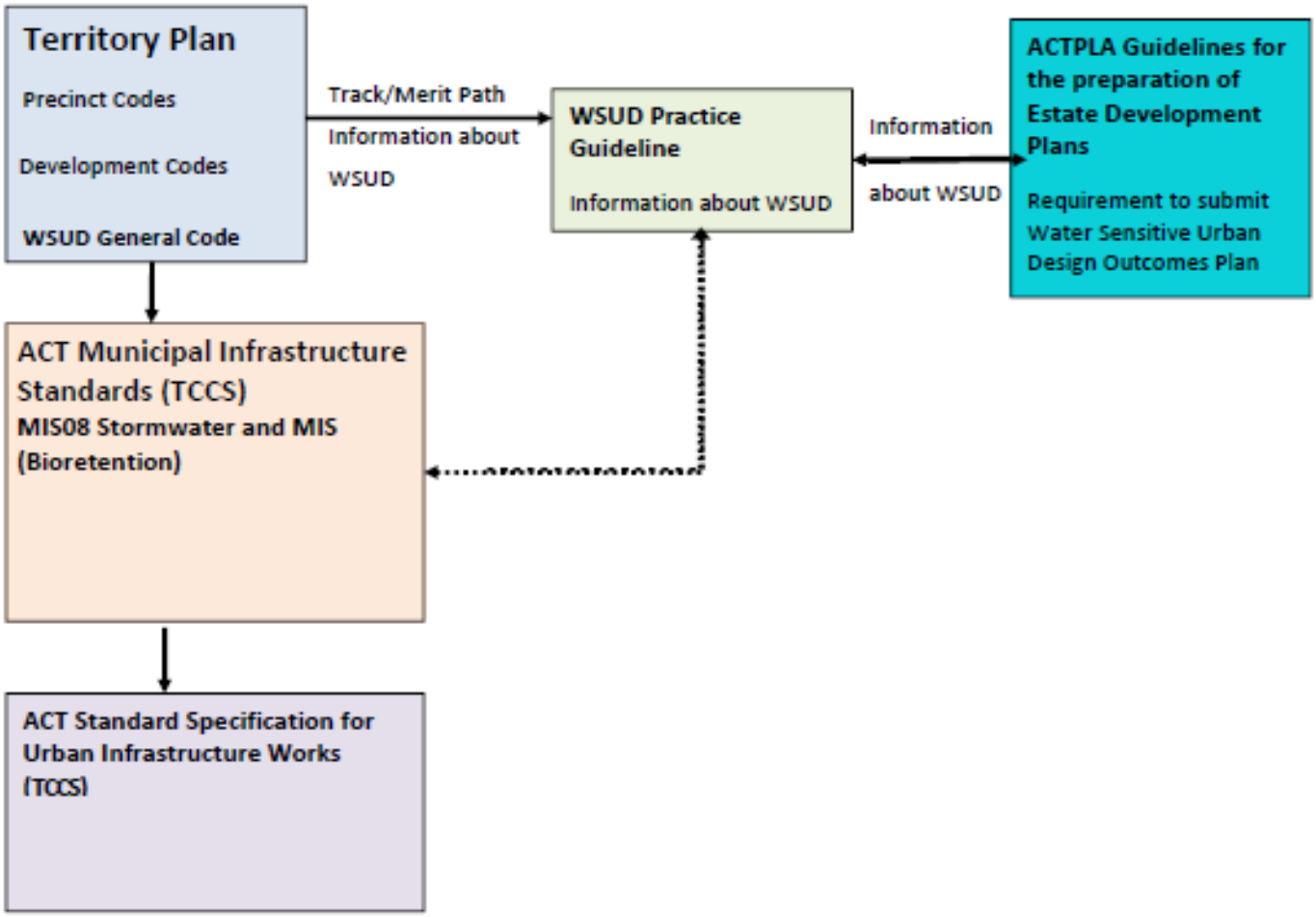
Legacy – beyond the infrastructure

- Community ownership (catchment and neighbourhood scale) and partnerships
- Urban amenity benefit – open space, landscape value, recreational facilities
- Process for catchment scale evaluation of water quality treatment trains (MCA)
- Better understanding of lifecycle costs including operation and maintenance of assets
- Integrated monitoring and reporting framework for ACT
- Baseline of community values to support ongoing practice change – behavioural change program to be implemented

Water Sensitive Urban Design (WSUD)

- Catchment Management and Water Policy – responsible for WSUD
  - Policy and technical advice on WSUD at strategic, precinct and block scale
  - Revision of the WSUD provisions in the Territory Plan
    - Codes eg WSUD General Code
    - ACT WSUD practice guideline

ACT Government – Key WSUD Documents



Phase 2 - Indicative Timeline

- **Community consultation: Sept 2016**
- **Development Application: October 2016 – February 2017**
- **Procurement of Contractors: Oct 2016 – March 2017**
- **Work commences: from April 2017**
- **Projects complete: June 2019**

Reserve Projects

- Rain garden and potential stormwater use - Bugden Avenue, opposite Kellett Street, Gowrie (TGO17)
- Rain garden and potential stormwater use – opposite Viking Park, McBryde Street, Erindale (TG014)
- Rain garden – North of De Little Circuit Greenway (TG007B)
- Rain garden – North of Holy Family Primary School, Weathers Street, Gowrie (TG018)

Rain garden and potential stormwater use - Bugden Ave, opposite Kellett Street, Gowrie (Landscape - TGO17)



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Priority Projects

- Civil Drawings

Rain garden and potential stormwater use – Chirnside Circuit, Kambah (Civil -TG003)



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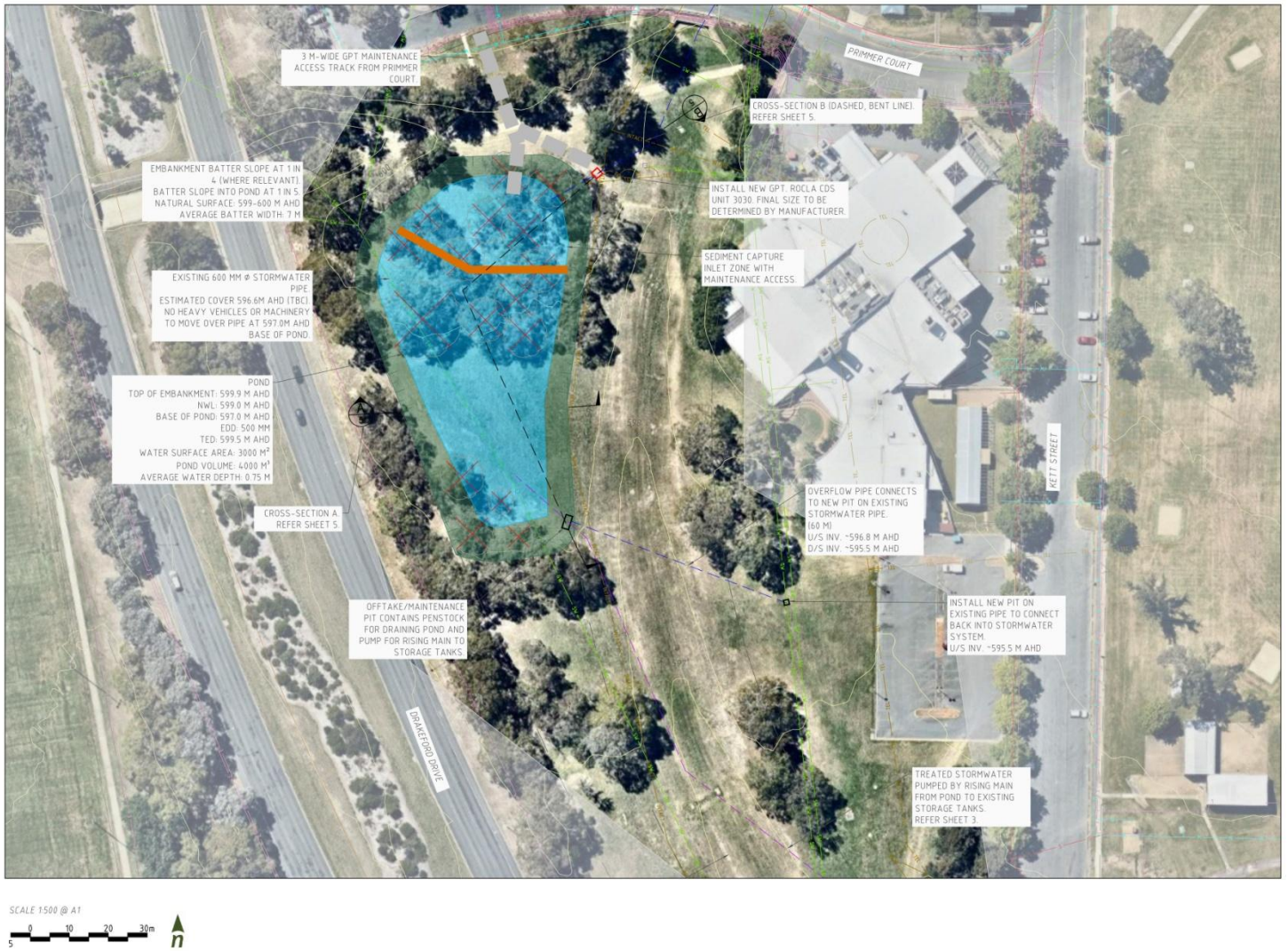
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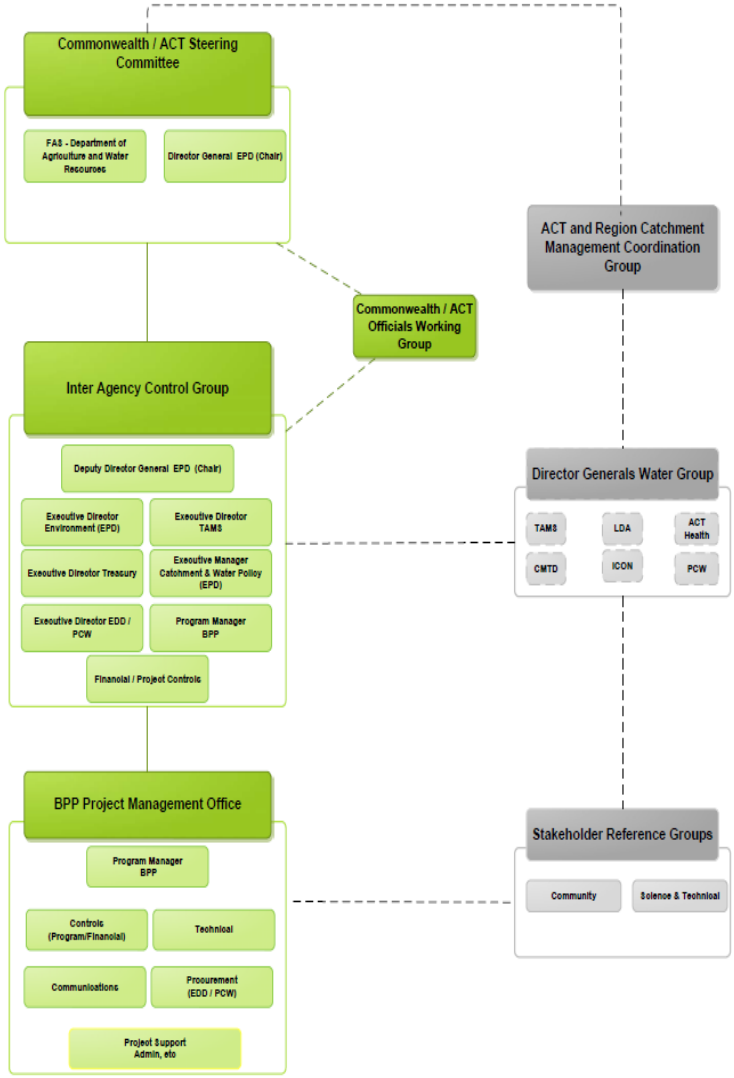
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Basin Priority Project Governance Structure



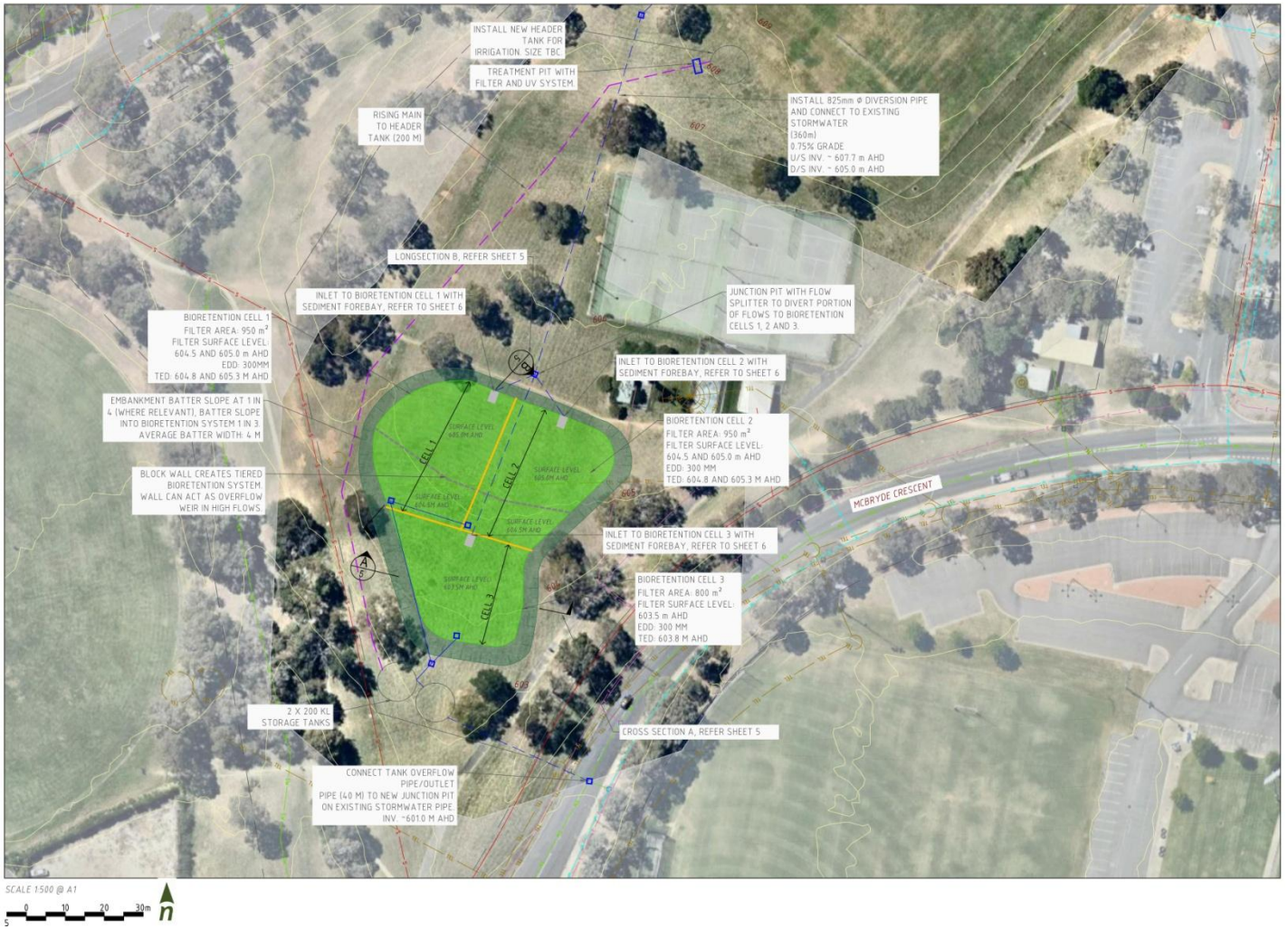
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Rain garden (Bioretention) & Wetland & Pond

Raingarden (Bioretention)

- Biological uptake of nutrients
- Filtration
- 0.5% catchment area
- Does not retain water
- Small to medium scale

Wetland

- Biological uptake of nutrients
- Sedimentation
- 2.5% catchment area
- Retain permanent water
- Medium to large scale

Pond

- Sedimentation
- 5% catchment area
- Retain permanent water
- Medium to large scale

Catchment Summary - Environmental Benefits

					Nutrient Reduction		
	Catchment	CAPEX	Renewal	OPEX	TP	TSS	TN
		$	$	$/Yr	Kg/Yr	Kg/Yr	Kg/Yr
Priority List	Fyshwick	15,883,960	3,646,000	74,000	2630	1755100	9797
	Lower Molonglo	9,649,000	702,636	78,783	182	113,000	610
	Tuggeranong	26,161,000	3,400,764	518,191	954	689100	4533
	Upper Molonglo	3,377,000	428,336	49,929	105	73600	660
	West Belconnen	6,530,000	490,000	28,500	158	112300	804
	Yarralumla	16,335,000	1,302,220	253,775	333	2388980	2018