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
Phase 1 – to May 2016

Investigations

• Audited performance of existing WSUD infrastructure

• Water quality monitored and modelled
  o 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:
  o priority projects become unviable
  o savings are made
  o additional funding sourced

• ACT Government to maintain assets
Next Steps - May 2016 to June 2019

• Community engagement
  o Site level consultation/drop in sessions – September 2016
  o Statutory consultation for development approval: October 2016 – February 2017
  o 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:
  o 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

- Territory Plan
  - Precinct Codes
  - Development Codes
  - WSUD General Code

- ACT Municipal Infrastructure Standards (TCCS)
  - MIS08 Stormwater and MIS (Bioretention)

- ACT Standard Specification for Urban Infrastructure Works (TCCS)

- WSUD Practice Guideline
  - Information about WSUD

- ACTPLA Guidelines for the preparation of Estate Development Plans
  - Requirement to submit Water Sensitive Urban Design Outcomes Plan
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)
Rain garden and potential stormwater use – opposite Viking Park, McBryde Street, Erindale (Landscape - TG014)
Rain garden – North of De Little Circuit Greenway (Landscape - TG007B)
Rain garden – North of Holy Family Primary School, Weathers Street, Gowrie (Landscape - TG018)
Priority Projects

• Civil Drawings
Rain garden and potential stormwater use – Chirnside Circuit, Kambah (Civil -TG003)
Rain gardens and potential stormwater use – Athllon Drive between Langdon Avenue and Fincham Crescent, Wanniassa (Civil - TG008)
Rain garden – Upper Stranger Pond, Isabella Plains (Civil - TG010)
Swale – Corlette Crescent (Monash) to Isabella Pond (Civil – TG012)
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Reserve Projects

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Rain garden – North of Holy Family Primary School, Weathers Street, Gowrie (Civil - TG018)
<table>
<thead>
<tr>
<th>Raingarden (Bioretention)</th>
<th>Wetland</th>
<th>Pond</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Biological uptake of nutrients</td>
<td>• Biological uptake of nutrients</td>
<td>• Sedimentation</td>
</tr>
<tr>
<td>• Filtration</td>
<td>• Sedimentation</td>
<td>• 5% catchment area</td>
</tr>
<tr>
<td>• 0.5% catchment area</td>
<td>• 2.5% catchment area</td>
<td>• Retain permanent water</td>
</tr>
<tr>
<td>• Does not retain water</td>
<td>• Retain permanent water</td>
<td>• Medium to large scale</td>
</tr>
<tr>
<td>• Small to medium scale</td>
<td>• Medium to large scale</td>
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## Catchment Summary - Environmental Benefits

<table>
<thead>
<tr>
<th>Priority List</th>
<th>Catchment</th>
<th>CAPEX</th>
<th>Renewal</th>
<th>OPEX $/Yr</th>
<th>TP Kg/Yr</th>
<th>TSS Kg/Yr</th>
<th>TN Kg/Yr</th>
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<td></td>
<td>Fyshwick</td>
<td>15,883,960</td>
<td>3,646,000</td>
<td>74,000</td>
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<td>1755100</td>
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<td>Lower Molonglo</td>
<td>9,649,000</td>
<td>702,636</td>
<td>78,783</td>
<td>182</td>
<td>113,000</td>
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<td>Tuggeranong</td>
<td>26,161,000</td>
<td>3,400,764</td>
<td>518,191</td>
<td>954</td>
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<td>Upper Molonglo</td>
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<td>428,336</td>
<td>49,929</td>
<td>105</td>
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<td>West Belconnen</td>
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<td>Yarralumla</td>
<td>16,335,000</td>
<td>1,302,220</td>
<td>253,775</td>
<td>333</td>
<td>2388980</td>
<td>2018</td>
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