One Planet Living:
Our Water

Water Proofing the West

*'water harvesting/reuse **and** flood mitigation'*

Port Road Rejuvenation Project

- an environmental solution to a stormwater problem'


Flood Plain Mapping
The Queen Elizabeth Hospital
PORT RD
21 ST
WOODVILLE RD EAST
WOODVILLE RD WEST
CURTIS ST
CEDAR AV
ANN ST
GLENROWAN RD
CONNER AV
0.5m
0.5m
0.6m
0.6m
0.9m
0.7m
Floodplain Mapping
Port Road Catchment
CITY OF CHARLES STURT
Legend
100 Year Longterm Floodplain
Water level in metres

Stormwater Management Authority
SMP Objectives & Principles

(From Section 2.5 & 3.2 of the SMA Guidelines)

- Providing an acceptable level of **flood protection** for the community, both private and public assets
- Management of the **water quality** – reduce adverse impacts on watercourses and receiving waters (Gulf St Vincent)
- Beneficial use **(water reuse)** opportunities be maximised
- Manage stormwater as part of the urban water cycle recognising **natural watercourse** and riparian **ecosystems**
- **Sustainable** management of stormwater infrastructure
- A thorough **consultation & communications plan** is developed

Stormwater Capital Works - Options

Scenario 1 - Traditional underground stormwater pipe with a detention basin in Old Port Road – discharge all water to sea

Scenario 2 - Underground stormwater pipe with detention basins along the Old Port Road and Port Road medians

Scenario 3 - Underground stormwater pipe with extensive detention basins and wetlands to both reduce peak flows, improve water quality & amenity, and retain water for reuse.

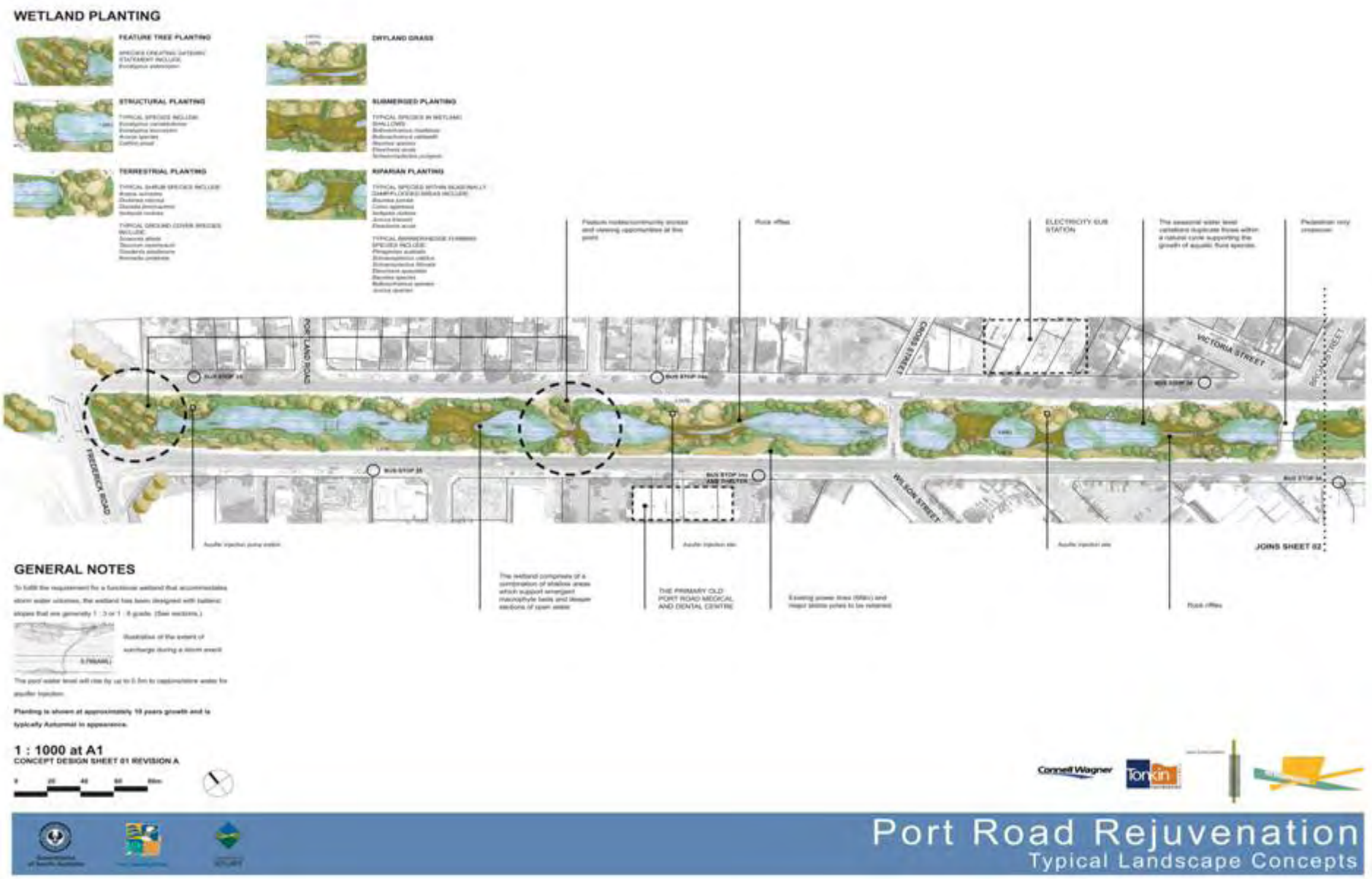
Stormwater Capital Works - Options

- Based on a comprehensive review the Port Road SMP Steering Group determined the preferred scheme to be **Scenario 3**

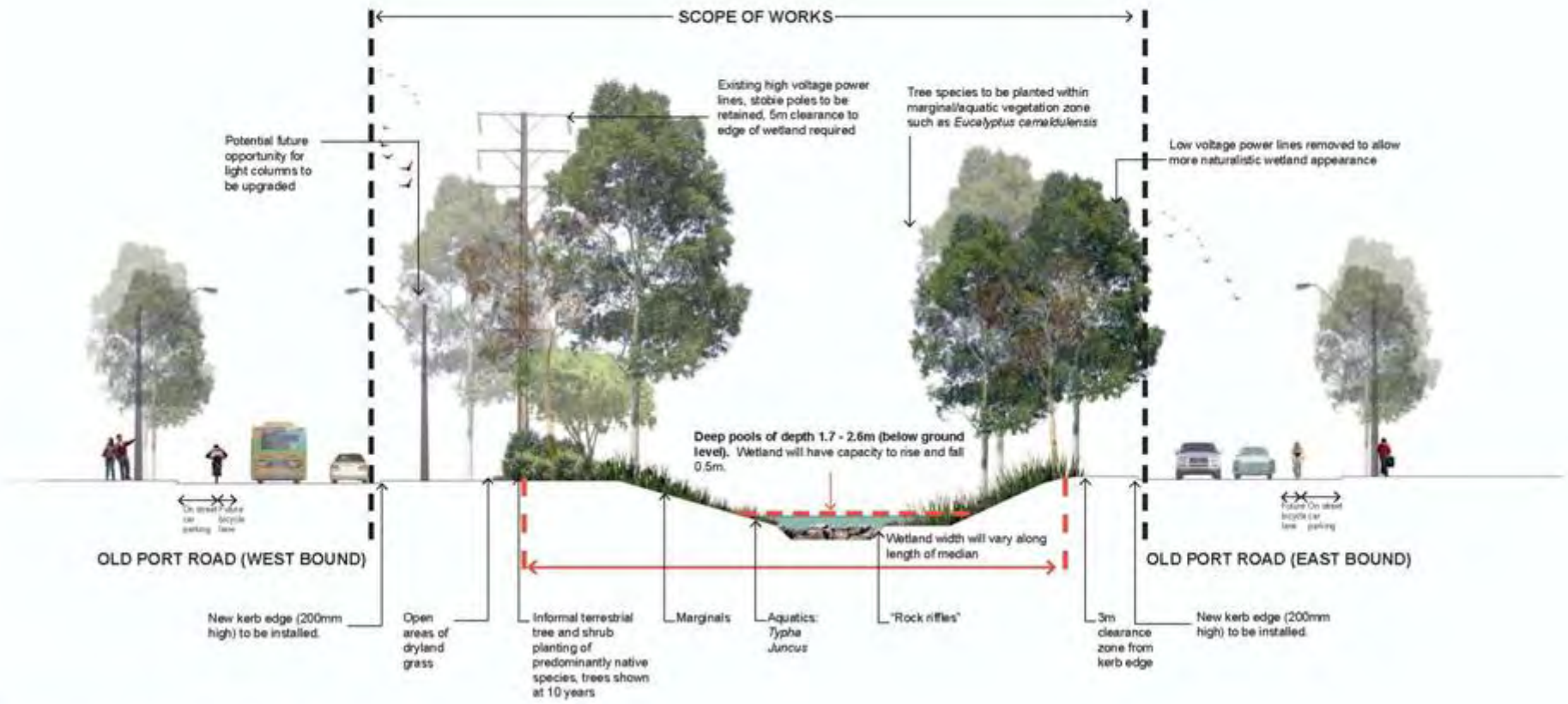
➔ Consider the Scheme:

- **Water Reuse** and **Flood Mitigation**
- Water Sensitive Urban Design principles
- A solution within a highly urbanised City area

Water Sensitive Urban Design – Old Port Road



Water Sensitive Urban Design – Old Port Road



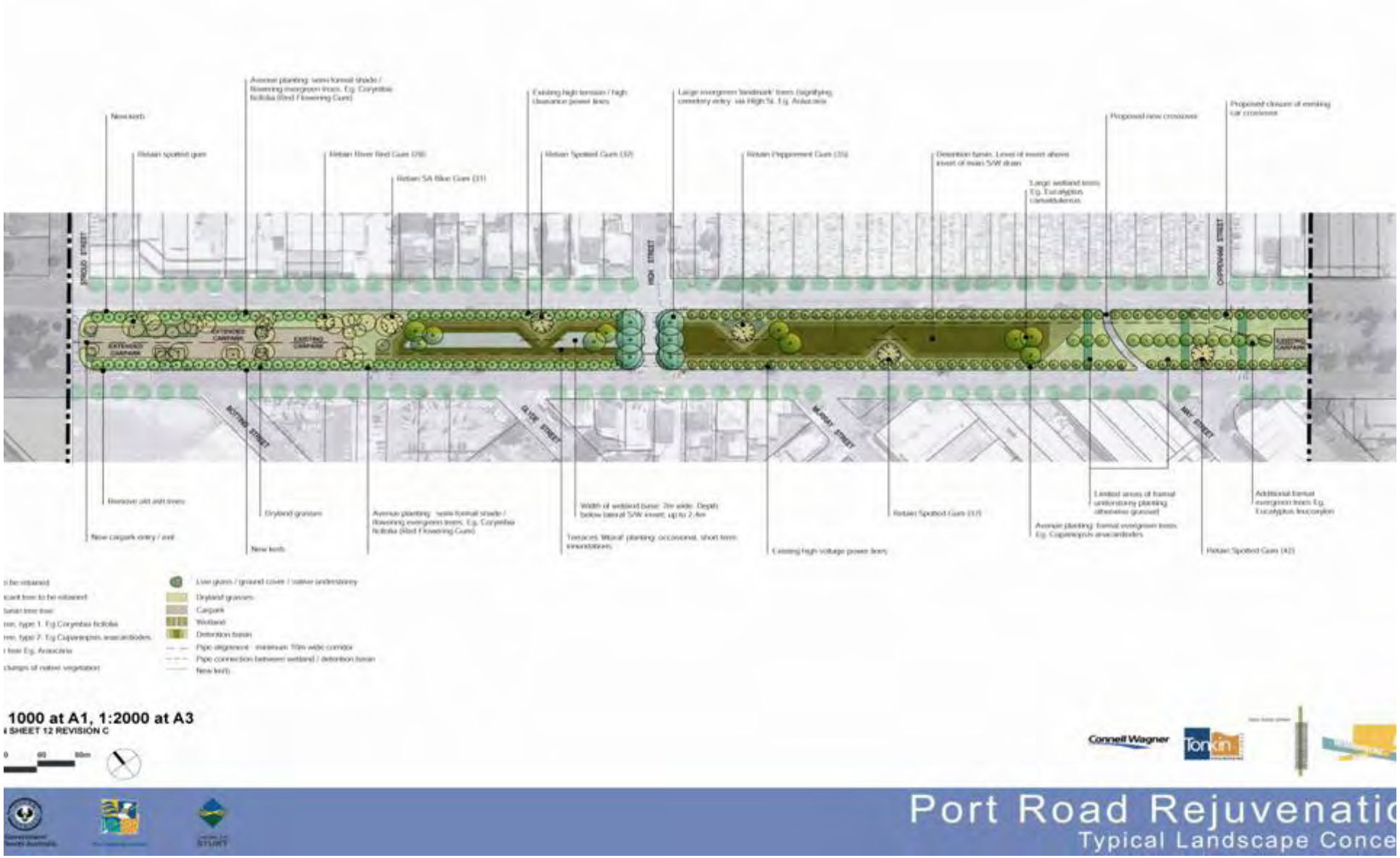
Planting is shown at approximately 10 years growth and is typically Autumnal in appearance.

TYPICAL SECTION THROUGH OLD PORT ROAD WETLANDS **No. 2**

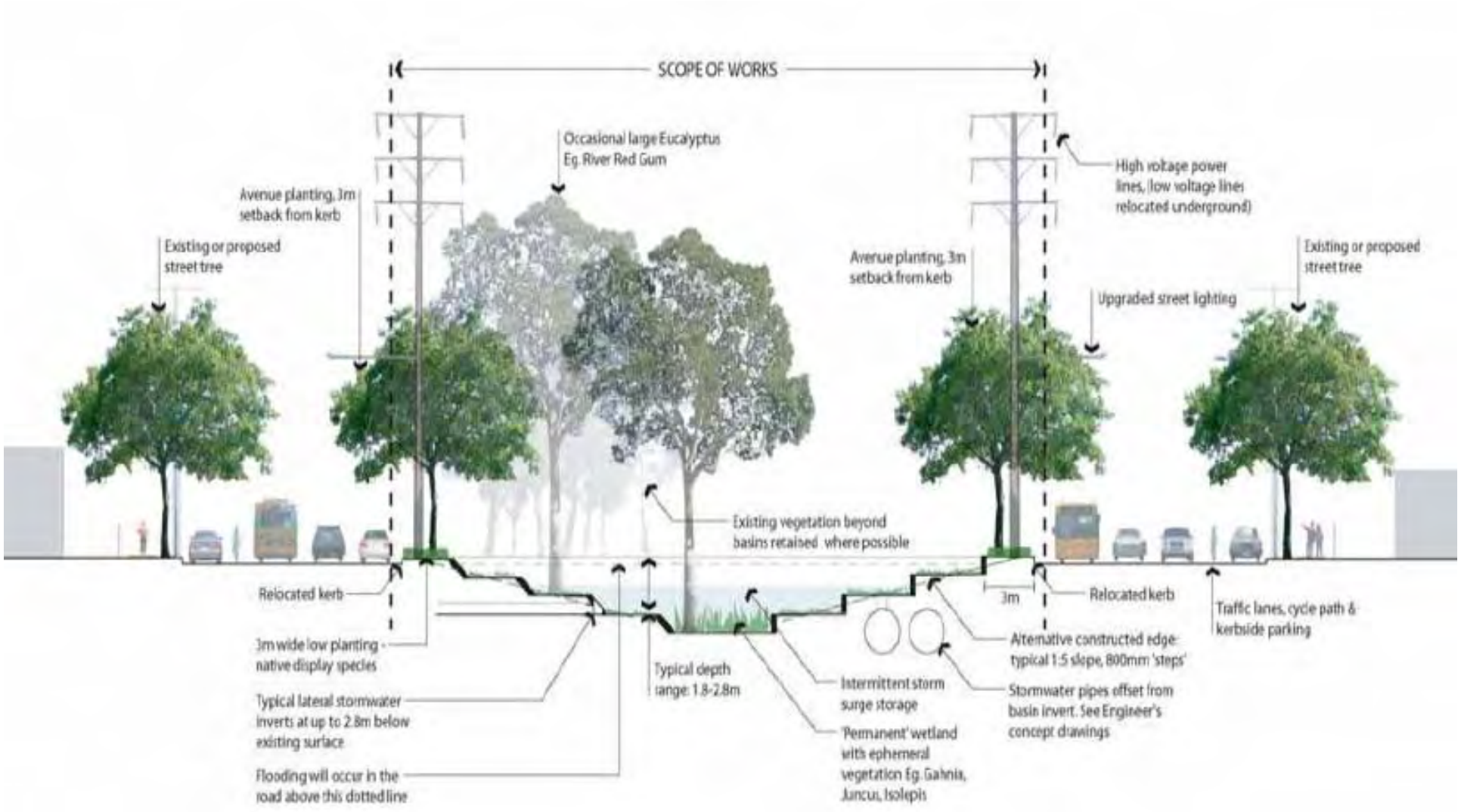
SCALE 1:200 at A3

CONCEPT DESIGN SHEET14 REVISION A

Water Sensitive Urban Design – Port Road



Water Sensitive Urban Design – Port Road

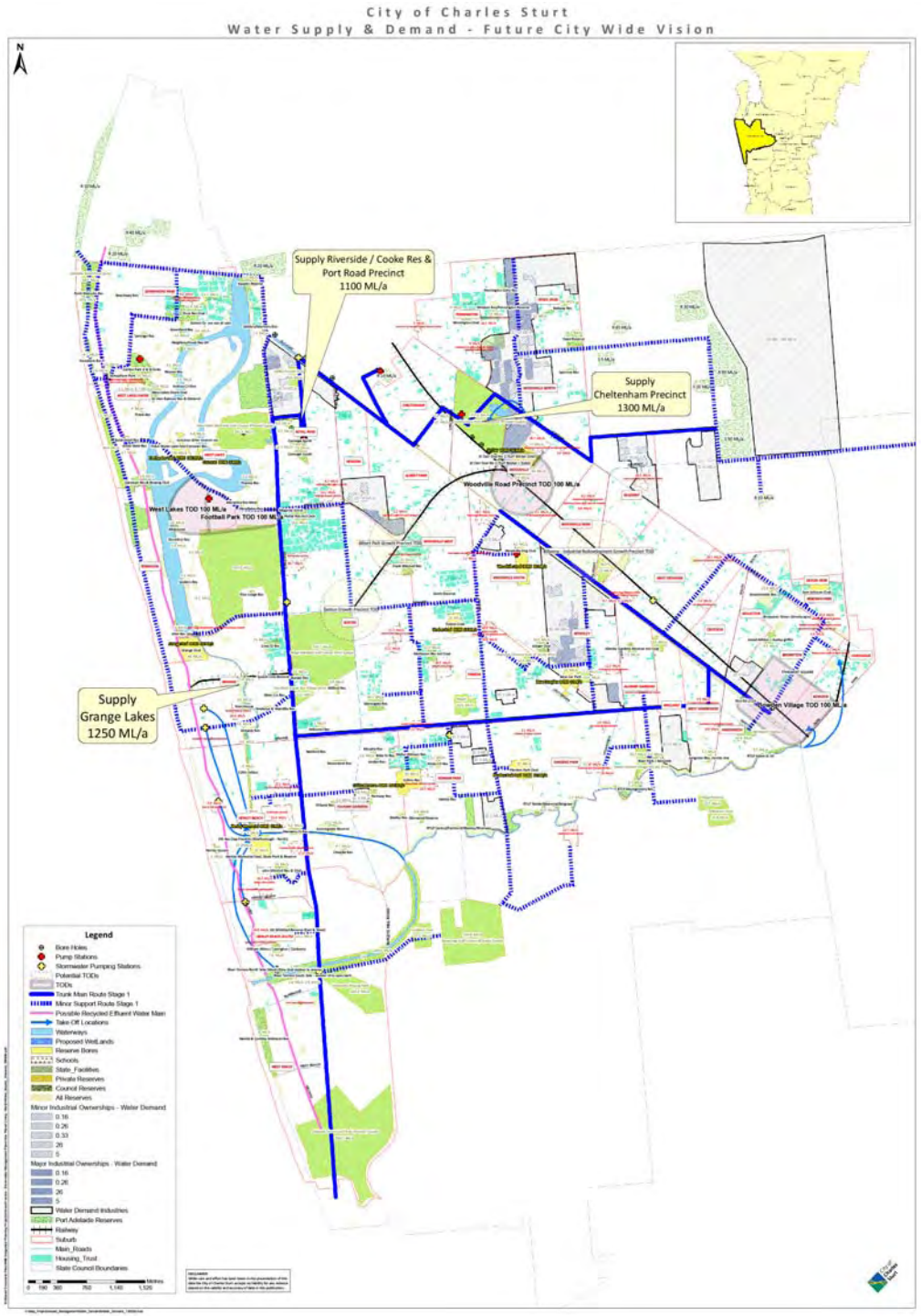


Water Sensitive Urban Design – Port Road

Water Proofing the West – Why?

- Significant challenge to maintain green areas with current drought/climatic change conditions and mains water restrictions.

- **<u>Consider 3 sources of Water</u>**
  - Potable Water Mains
  - Recycled Stormwater (wetland and aquifer reuse)
  - Recycled Effluent water



SUPPLY:

3 Precincts

- Cheltenham
- Old Port Road, Riverside/Cooke
- Granges Lakes

DEMAND:

- Council's own needs
- Industrial/Commercial
- Schools
- State sites

Water Proofing the West - Stage 1 - How?

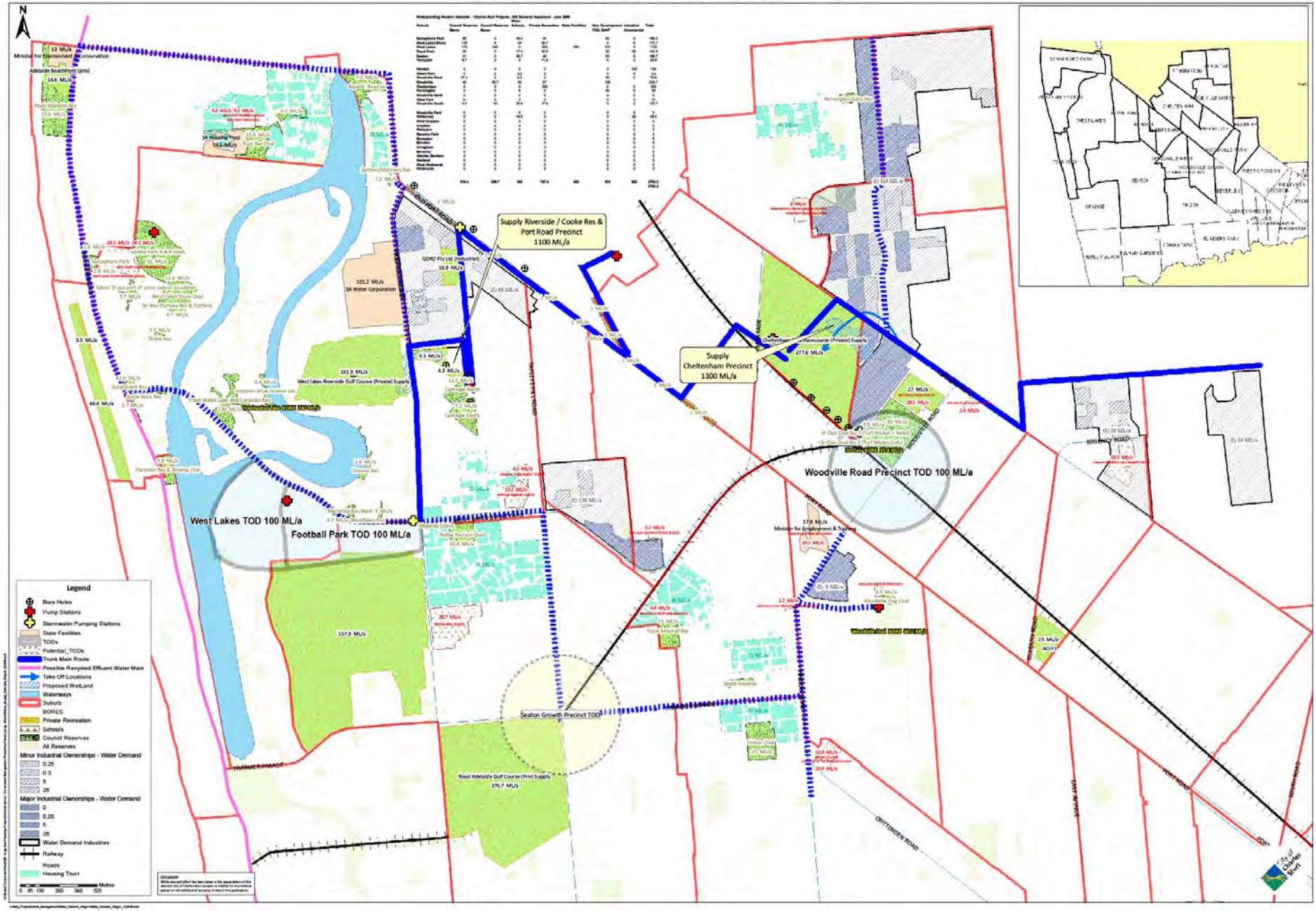
- Council together with State Government applied for funding under the:
  - Australian Government: National Urban Water and Desalination Plan - Special Call for Stormwater Harvesting and Reuse Projects.
- Other Contributory Funding Sources include:
  - Councils (CCS & PAE), Commonwealth (DEWHA, NDMP), State Agencies (OWS, SMA and NRM) & other.
- Funding is now confirmed with all works to be completed by 30 June 2013.

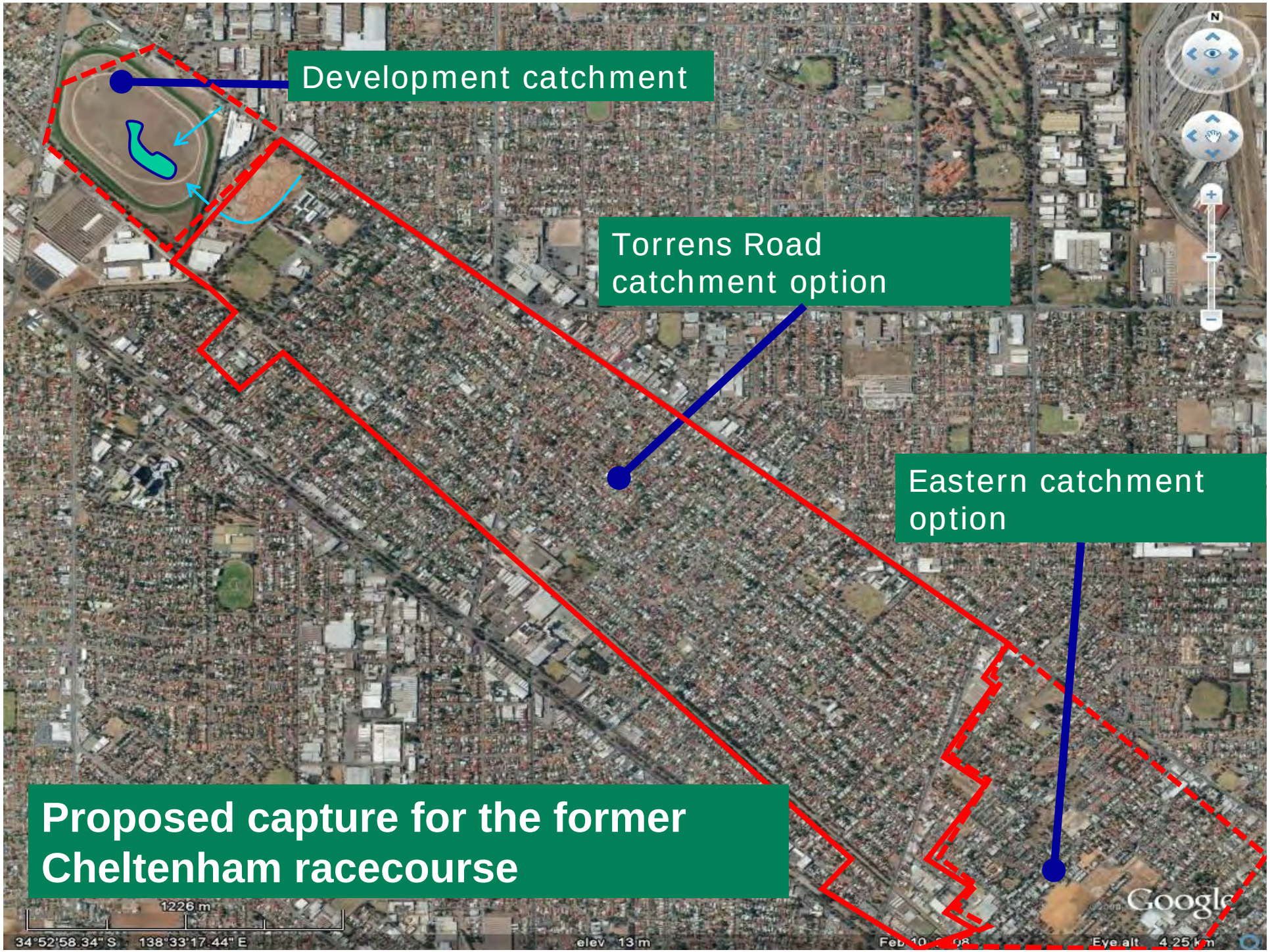
Water Proofing the West - Stage 1

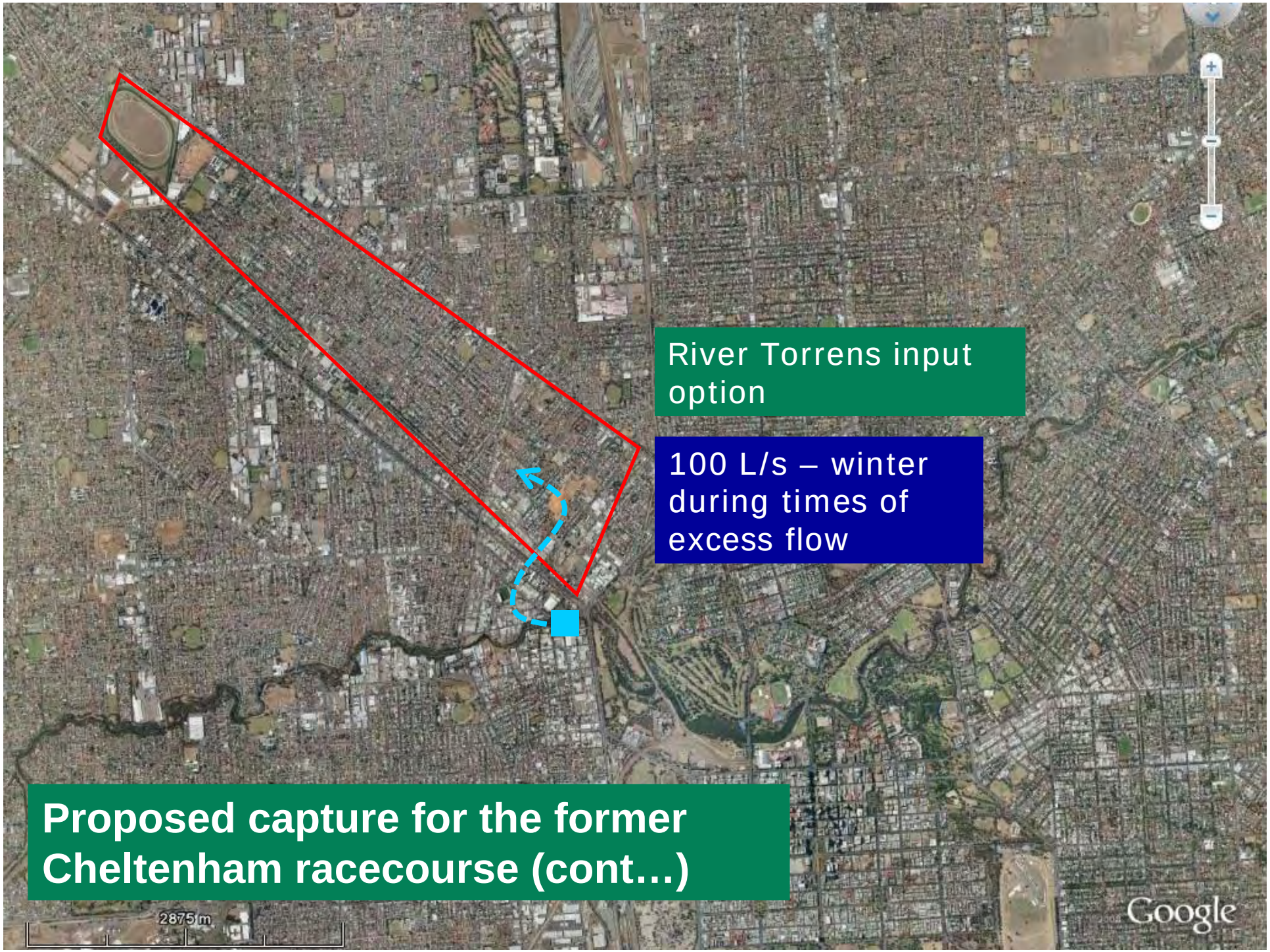
Water Proofing the West - Stage 1, will:

- Supply, harvest water at wetlands and ASR schemes, and from the River Torrens Winter flows at:
  - Cheltenham, Old Port Road, Riverside Golf Club & Cooke Reserve
- Distribute, treated stormwater, using pumps, tanks and pipes
- Demand, for water is from Council's own needs, Industrial/Commercial, Schools, and State Government (eg Housing Trust, TOD's, SA Water)

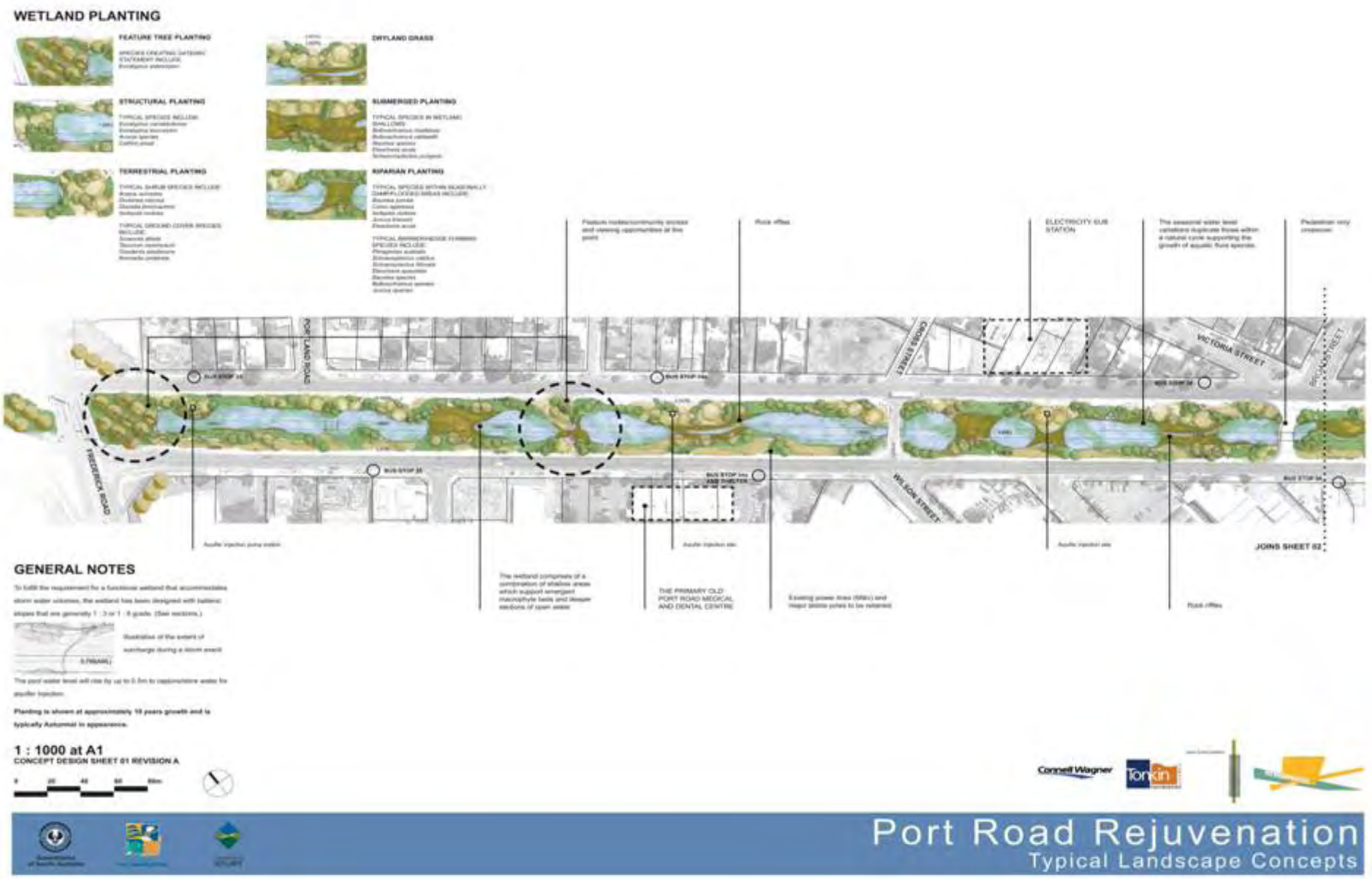
City of Charles Sturt
Water Supply & Demand Future City - Stage 1



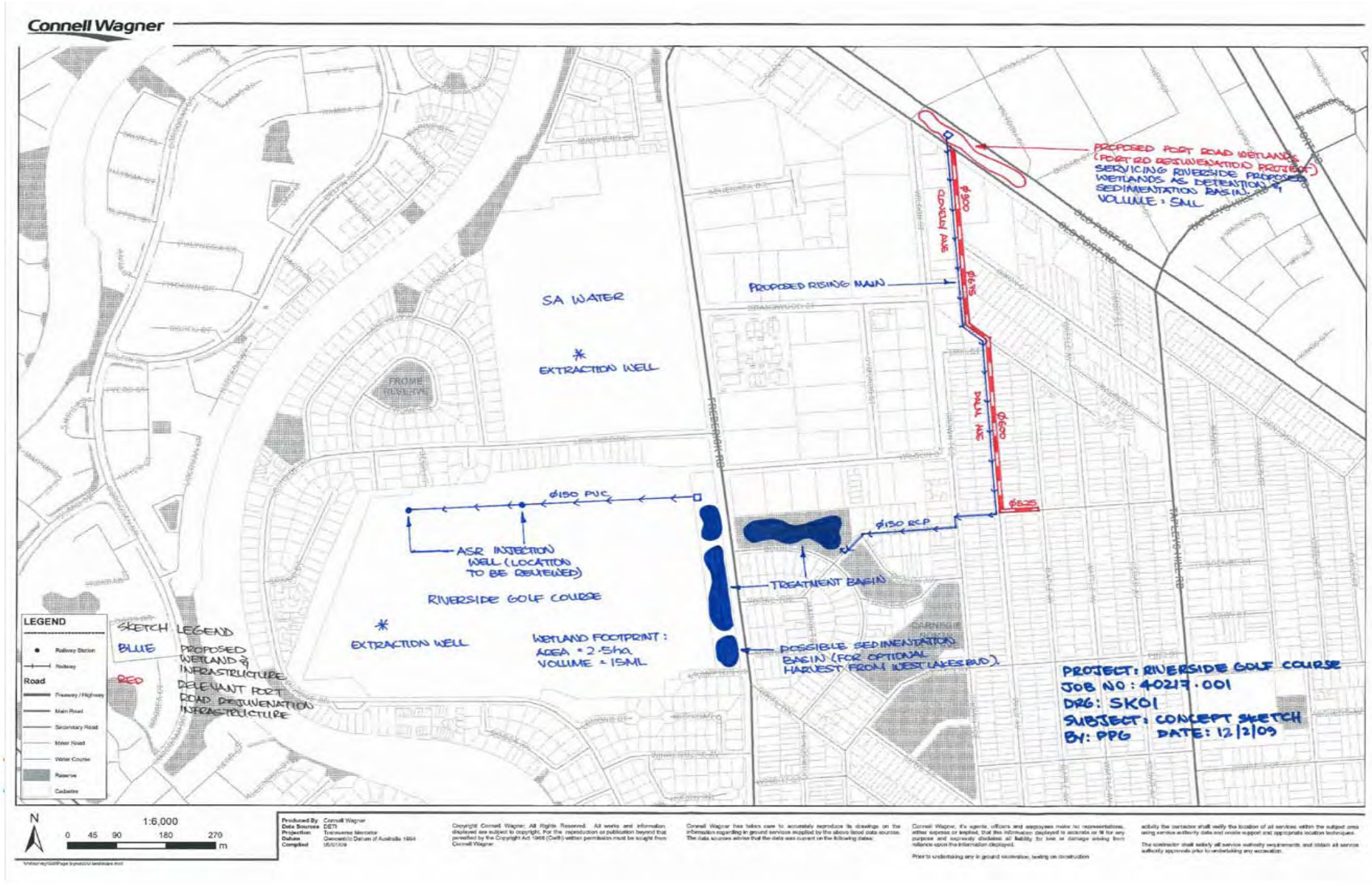

Development catchment
Torrens Road catchment option
Eastern catchment option
Proposed capture for the former Cheltenham racecourse
1226 m
34°52'58.34" S 138°33'17.44" E
elev 13 m
Eye alt 4.25 km
Google


River Torrens input option
100 L/s – winter during times of excess flow
Proposed capture for the former Cheltenham racecourse (cont…)
2875 m
Google

Water Sensitive Urban Design – Old Port Road



Old Port Road - Cooke Reserve - Riverside Golf Course



WATER PROOFING THE WEST - STAGE 1 - STORMWATER HARVESTING AND REUSE SCHEME

CHELTENHAM, OLD PORT ROAD, RIVERSIDE, RIVER TORRENS DIVERSION & THE RING MAIN

Notes:

Anticipated notification for Round 1 (30 June 2009) to successful applications September to November 2009
Target works to commence February 2010
Project Works to be completed by 30 June 2013
Contributions are to occur over: July 2009 - June 2010
July 2010 - June 2011
July 2009 - June 2012
July 2009 - June 2013
Contingencies (i) 30% built into capital items plus (ii) overall project contingency of 10%

STAGE 1 COST CONTRIBUTIONS

PREFERRED SCHEME - COMPONENTS	Supply Capacity approx 2.4Gl/annu		
		$	
Cheltenham	....	19.5	
Old Port Rd - FM only	....	9.6	
Old Port Rd - SW Harvest	....	7.2	
Riverside	....	6.9	
Ring Main & Storage	....	8.9	
SW Diversion from River Torrens		1.0	
Contingencies	....	5.5	
		58.6	Million

PREFERRED SCHEME - ITEMS			
		$	
Included Capital Components	....	38.5	
Excluded Capital Items	....	9.8	
Design/Project Management		4.8	
Contingencies	....	5.5	
		58.6	Million

CONTRIBUTION	Harvesting $	Flood Mitig $	Total $	% Cont
Australian Government	20.00		20.00	34.1
Cheltenham Developer	5.20		5.20	8.9
Charles Sturt (to Cheltenham)	4.80		4.80	8.2
Charles Sturt (to Old Port & Rest)	8.10	2.60	10.70	18.3
Port Adelaide Enfield (to Old Port Rd	1.35		1.35	2.3
State Government (OWS & LMC)	7.35		7.35	12.5
NRM Board	2.00		2.00	3.4
Natural Disaster Mitigation Program		1.20	1.20	2.0
Stormwater Management Authority		6.00	6.00	10.2
	48.80	9.80	58.60	100

PROJECT ITEMS in $m	Cheltenham	Old Port Road	Riverside	Whole Scheme	TOTAL
Wetlands & Detention	7.88	4.59	1.97		14.44
SW Diversions	1.72		2.16	1.00	4.88
Distribution Mains	4.16			8.40	12.56
SW Drainage Upgrades		9.58			9.58
ASR Wells and Pumps	3.44	1.68	1.49		6.61
Contingency/Design/PM/Other	4.31	2.71	1.74	1.77	10.53
TOTALS	21.51	18.56	7.36	11.17	58.60

Questions?

For further information:

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See: City of Charles Sturt Website

http://www.charlessturt.sa.gov.au/site/page.cfm?u=208