Sustainable Streetscapes

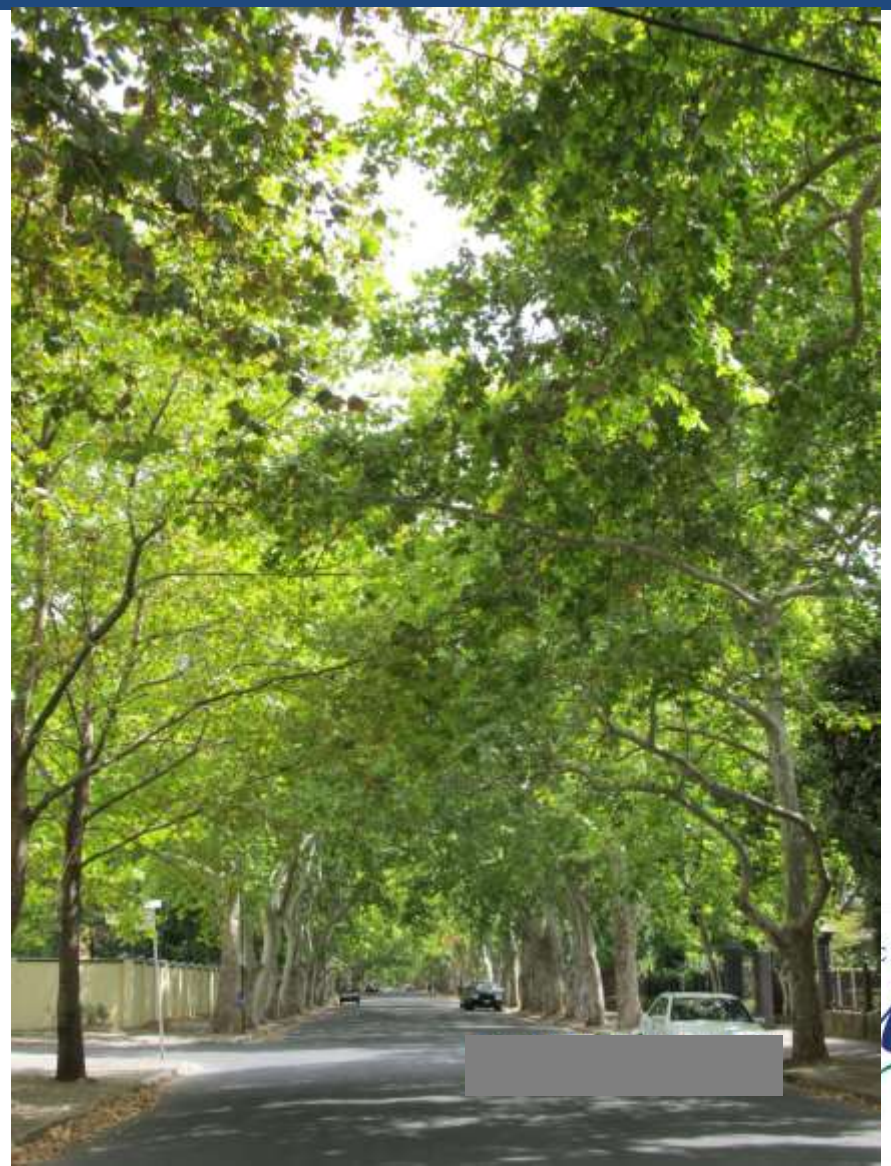
Concrete can be used for environmental good

Sustainability in Public Works Conference

14-15 May 2018

Welcome to Unley

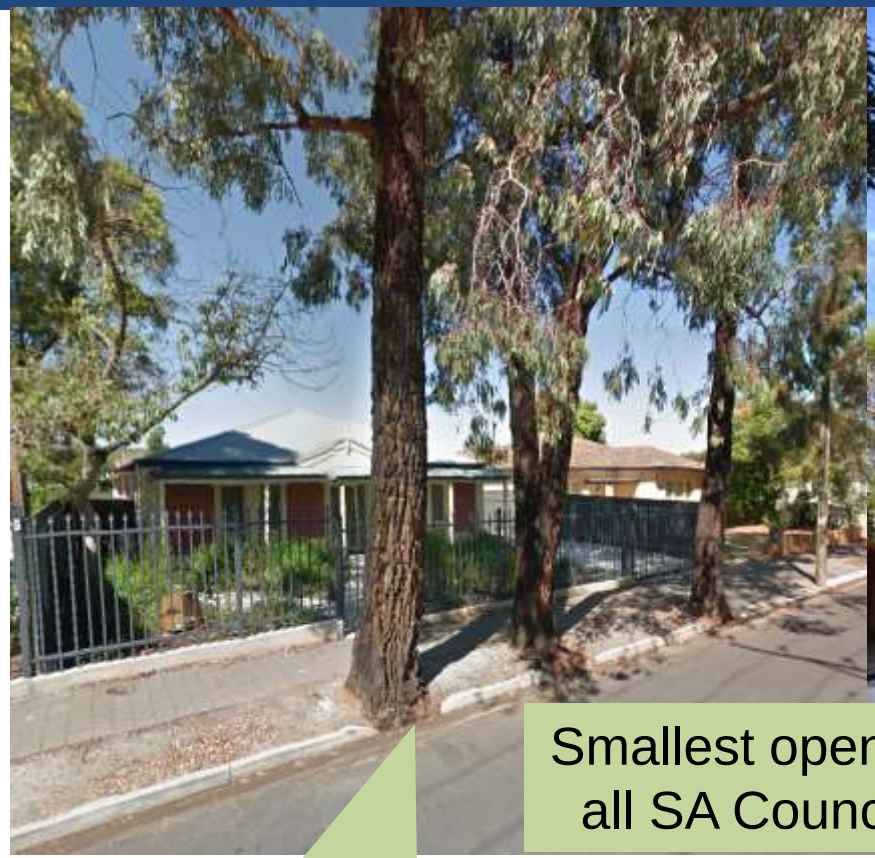
- Wealthy inner suburb Adelaide
- 40,000 population
- $50 million budget
- Tree lined streets; 26,000 trees
- Progressive Council



Key Topics

- Our strategy/ intent
- 2nd generation tree strategy
- WSUD
- Greening verges

Typical Unley Streets



Tree lined narrow streets

Smallest open space of all SA Councils – 3%

An attempt to balance trees with limited footpath space

Typical root activity beneath footpath

Every street in Unley is tree lined

Strategic Context
Our 4 Year Plan

Community Living
People value our City with its enviable lifestyle, activities, facilities and services

Environmental Stewardship
We will maintain and enhance our urban environment, and strengthen our City's resilience to climate change by providing leadership to our Community

Economic Prosperity
Our businesses are valued because of the range of goods, services and facilities they provide, and new businesses are supported, not burdened with bureaucracy

Civic Leadership
Council will listen to the community and make transparent decisions for the long term benefit of the City

Council takes environmental sustainability VERY seriously

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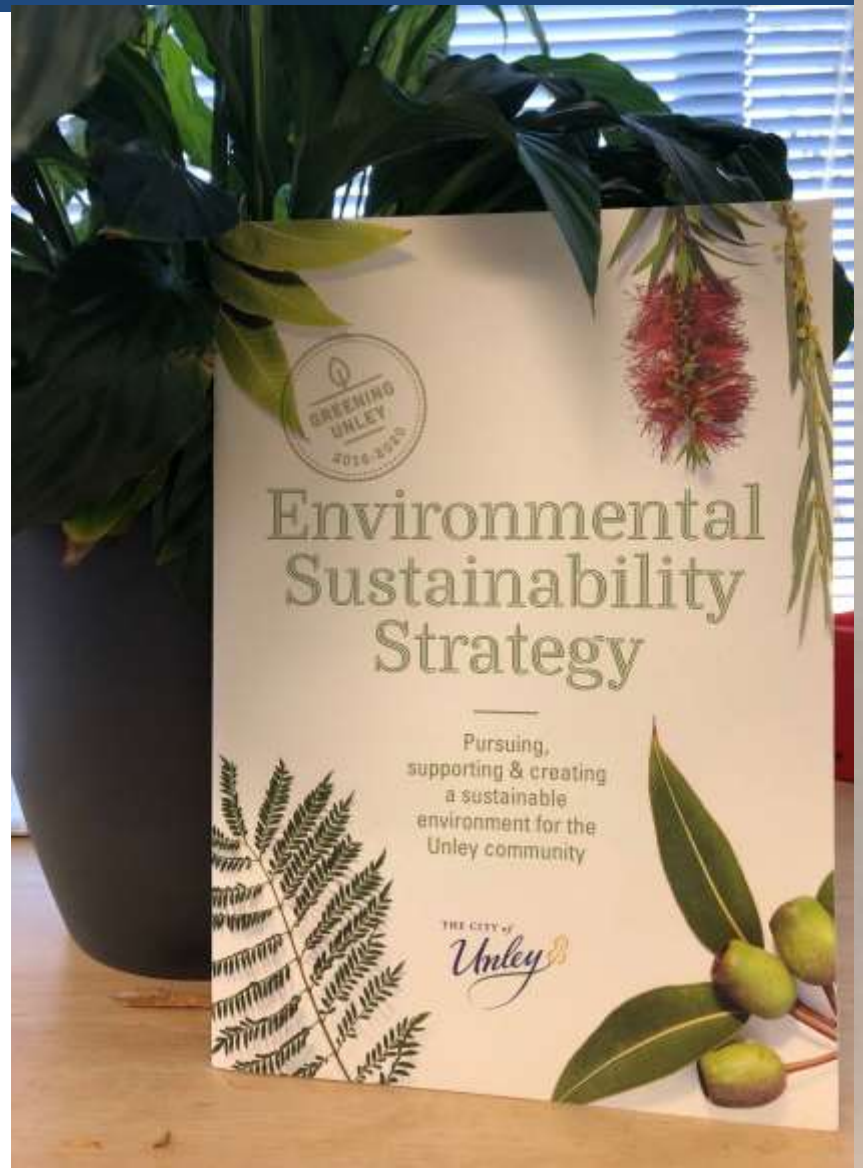
Environmental Sustainability Strategy



Summary of Objectives & Targets

	OBJECTIVE	COUNCIL TARGET BY 2020	COMMUNITY TARGET BY 2020
GREEN UNLEY	Improving and maintaining Unley's Urban Forest	Maintain minimum canopy cover of 26 per cent	Minimum 400 verges converted from dolomite to loam and plants
WATERWISE UNLEY	Efficient, effective and sustainable water management	Minimum 40 streets with stormwater improvements	Inform and educate residents on water saving measures in conjunction with relevant authorities
RESILIENT UNLEY	Increasing resilience for changes in climate	Maintain and increase our open space by creating a minimum 3 new spaces	Minimum 2 information sessions on positive actions residents can take to improve resilience to climate change
RESOURCEFUL UNLEY	Excellence in waste management, through diversion, avoidance and re-use	Divert from landfill 75 per cent of material from Council facilities and events	Divert from landfill 70 per cent of residential material presented at kerbside
ENERGYWISE UNLEY	Increasing the energy efficiency of the City	Reduce net total of grid based energy use by 5 per cent	Provide information on energy efficiency to encourage increase of residential buildings with solar panels to 35 per cent

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2nd Generation Tree Strategy Principles

For an urban forest to be sustainable:

- a wide age-distribution of trees to create a continuous cycle of succession.
- a diverse mix of species – both native and exotic - reduces the risk of loss should one species be susceptible to a new pest or disease.
- diversity also provides benefits for biodiversity, aesthetic reasons, & the provision of summer shade and winter sun

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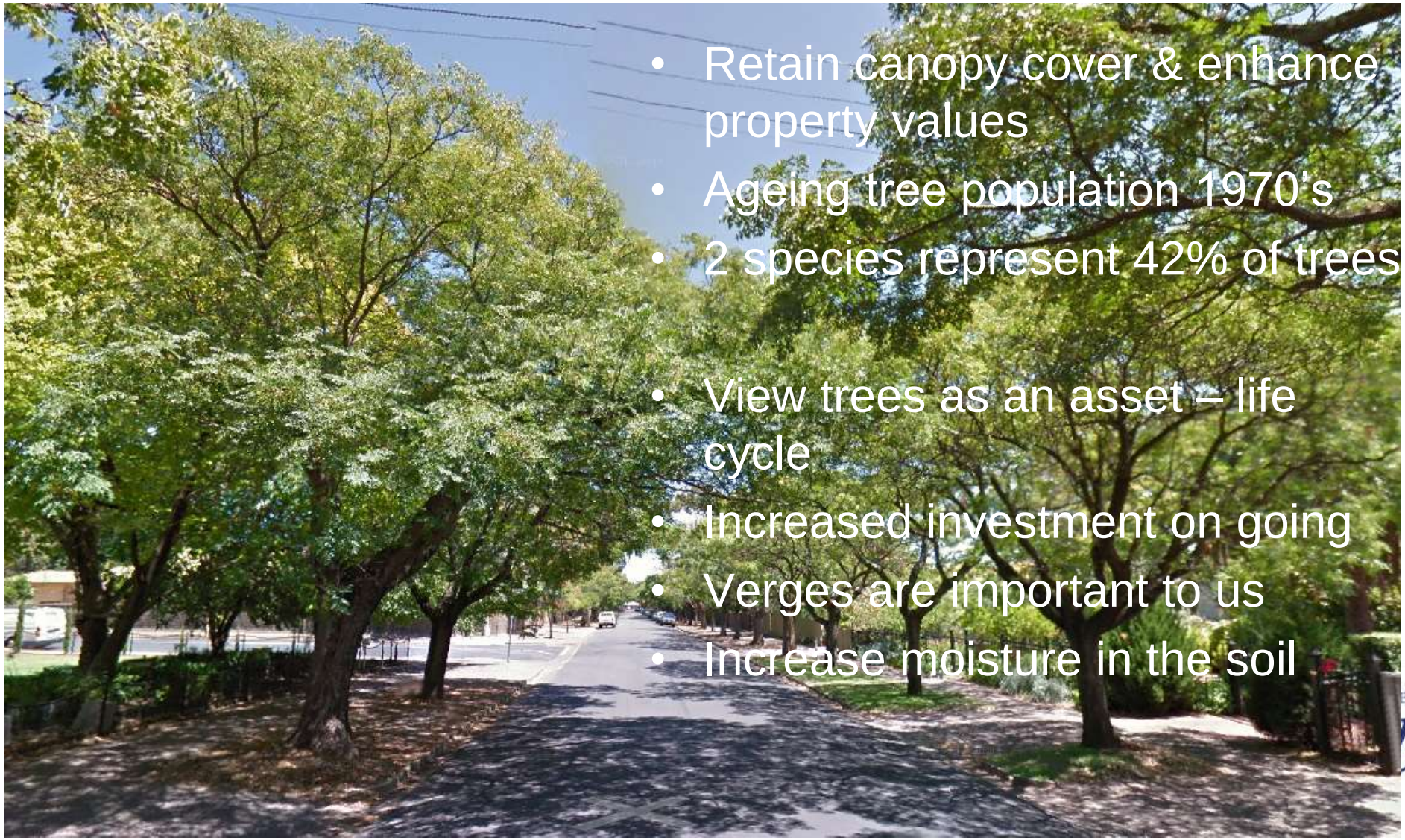
Second Generation Tree Strategy



- Retain canopy cover & enhance property values
- Ageing tree population 1970's
- 2 species represent 42% of trees

- View trees as an asset – life cycle
- Increased investment on going
- Verges are important to us
- Increase moisture in the soil

Street tree renewal

2nd G Tree Strategy

Consult & involve residents

Different approaches

- One at a time
- 1/3 at a time
- Whole street

Wildlife care

Small WSUD projects in Unley

- Low spec’n rain gardens
- Reduced need to water
- Improved greening
- Crew cut gaps in kerb line
- Limited capacity to detain water

Opportunities for WSUD

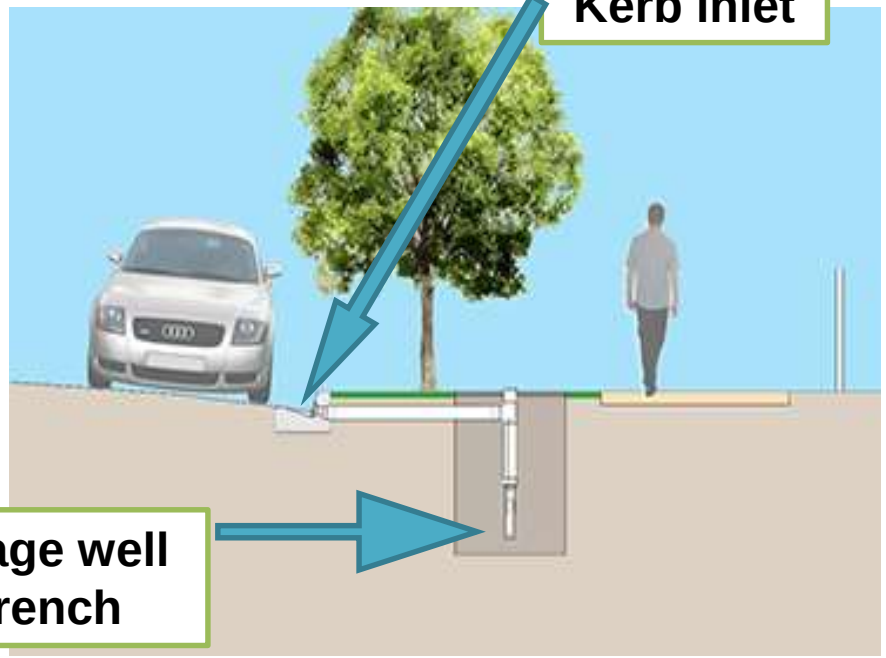
Roadway works

Traffic management – traffic calming measures

Kerb replacement

Kerb Inlets

- TreeNet kerb inlet connected to:
  - Soakage well, or
  - Trench along verge
- Inserted during street tree replacement
- Capture & hold more water



Rain Gardens

Formal rain garden opportunities:

- Street upgrades
- Major 2nd G works
- Spot opportunities

- Quick growth & soften street
- Need a strategic context
- Expensive to build & mtce

Rain Gardens

- High design spec’n
- High cost
- Concrete baths
- Density of planting
- Safety concerns

Low Specification WSUD

- Increase soil moisture
- Concave verges
- Limited filters
- Lower cost
- Increase greening
- Break stormwater from houses

Greening Verges Objective

Convert the traditional ‘hard’ dolomite nature strip to green, ‘soft’ environmentally sustainable treatment and to have resident take responsibility for ongoing maintenance.

Plant starter kit

Greening Verges Program

Historically Ad Hoc

- Loam replacement at residents request & their cost
- Many rules of what could be planted

2nd Tier Greening Project 1

- Linked to Footpath Renewal
- Value-add opportunity
- Dolomite or loam offered
- Loam 100% Council cost
- Incudes mulch & plant starter kit options
- Positive results & uptake

Greening Verges Program
Open Invitation City-Wide Project 2





Aim: Encourage residents to green verges & maintain them with incentives

Expressions of Interest from residents
We provide loam conversion

Verges Per Year: 56

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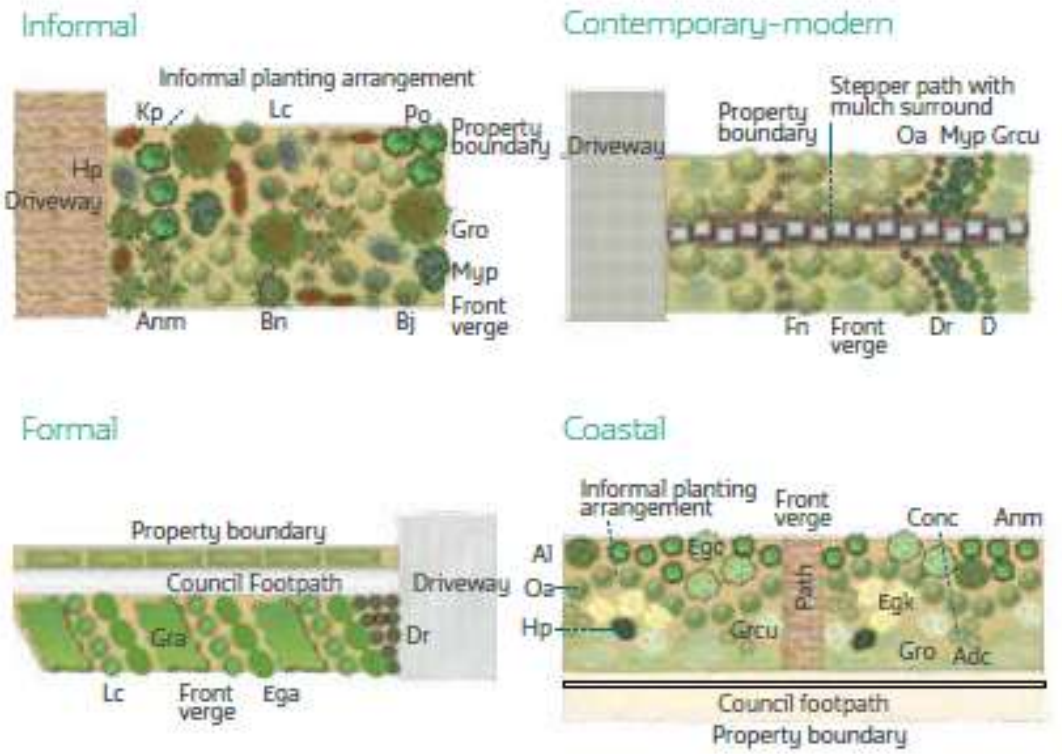
Demonstration Verges – Project 3



Greening Verges Program – Project 4

- Recognition
- Used schools to judge
- Quirky to attract publicity

Tree Wells
Finding a cost effective approach

- 1200mm high & 600mm dia.
- Sit in 1500-1800mm deep hole
- The staff drill 20mm holes in the casing about 100mm apart

Cost effective approach
- Footpath replacement
- 2nd G trees

More moisture for longer
Deeper roots
House stormwater & street

Our Civil Crew – thinking differently

- Getting crew to think green is good
- All streets tree lined – everytime you dig you find roots
- Wanting to increase moisture content of soil & green the city
- Different approaches to digging
- Involving Civil in tree program encourages sustainable thinking

Tree Inlets & Hydrovac

Less damage to existing roots

Inlets between trees

Unley Summary

- Lowest green space of all SA Councils
- Strategically driven approach
  - Green streets; canopy cover
  - Self sufficiency in water; lift moisture content
- Innovative ways to introduce greening into our streetscapes
- Value for money solutions;

not “best practice”

- Cultural shift
  - Civil crews
  - Reducing bureaucracy
  - Using all works as an opportunity