

City of Mitcham | Sustainable City

23 September 2021

Daniel Baker – General Manager
Engineering and Horticulture



CITY OF
MITCHAM

Objective

1. To share with the Board the various projects, programs and initiatives being undertaken by the City of Mitcham particularly in terms of:
 - Greening
 - Environment
 - Sustainability
 - Circular Economy
 - Climate Change
2. Highlight Key Challenges



Outline

1. Alignment of Objectives
2. Urban Forest
3. Smart Infrastructure Investment to maximise benefits
4. Key Challenges



CITY OF
MITCHAM

Mitcham 2030 – GOAL 2 Sustainable City



OUR VISION, GOALS & THEMES

WE ARE A WELCOMING & INCLUSIVE COMMUNITY THAT VALUES ITS HERITAGE & NATURAL ENVIRONMENT.

GOAL 1

ACCESSIBLE, HEALTHY & CONNECTED COMMUNITY

We connect our community with each other and with their places, and empower them to live healthy lives.

THEME 1. 1 TRANSPORT NETWORK

We are a City that is connected to places through an integrated, efficient and people friendly transport network for motorists, cyclists and pedestrians.



THEME 1. 2 HEALTH & WELLBEING



We build capacity for people to be active, healthy and connected, and provide inclusive and safe environments for all.

THEME 1. 3 SERVICES & FACILITIES

We provide convenient access to a diverse range of information, services, activities and facilities for our community.



GOAL 2

SUSTAINABLE CITY

We sustain and improve our natural and built environments for today's and future generations.

THEME 2. 1 CLIMATE CHANGE MITIGATION & RESILIENCE

We limit our impact on the climate, and are prepared and adaptable to the impacts of climate change.



THEME 2. 2 SUSTAINABLE RESOURCES



We conserve resources through efficient practices, investment in technology, waste avoidance, and a commitment to reuse, recycle and repurpose.

THEME 2. 3 NATURAL ENVIRONMENT

We protect and enhance the environment and its biodiversity across natural landscapes, waterways, open spaces and across our suburbs.



GOAL 3

DYNAMIC & PROSPEROUS PLACES

We have a strong and competitive economy that supports our unique and vibrant places and culture.

THEME 3. 1 PLACEMAKING

We have a spatial vision that guides the development of integrated, attractive and vibrant precincts that support diverse land uses and housing choice.



THEME 3. 2 CITY VIBRANCY



We are a City well recognised for our social and cultural diversity, creativity, arts, events, heritage, natural environment, educational and medical facilities.

THEME 3. 3 PARTNERSHIPS

We partner with neighbouring Councils, Government, universities, the private sector, not-for-profit organisations and community groups to maximise community and economic outcomes.



GOAL 4

EXCELLENCE IN LEADERSHIP

We are a professional and innovative Council with responsible leadership that is valued by its people, community and partners.

THEME 4. 1 GOOD GOVERNANCE

We are transparent and accountable, make informed decisions, demonstrate integrity and empower our community to have a voice and participate in a meaningful way.



THEME 4. 2 ORGANISATIONAL IMPROVEMENT



We are efficient and effective with a culture of positive change and innovation to deliver sustainable outcomes and value-for-money services that meet community needs.

THEME 4. 3 COMMUNITY EXPERIENCE

We are easy to do business with and commit to a customer-centric approach that delivers positive experiences and builds trust.



Coastal management



Water resource and wetland



Controlling pest plants and animals



Nature education



Green streets and flourishing parklands

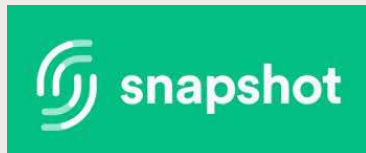


Biodiversity sensitive water sensitive urban design



Fauna, flora and ecosystem health in the urban environment

City of Mitcham 'Climate' Partnerships



- **October 2019** – Council Declared a climate emergency
- Some of Our partners for climate action:
 - City Power Partnership
 - Resilient South
 - Green Adelaide
 - Better Futures
 - Energy Partners Program
 - Water Sensitive SA
 - SA Water
 - Snapshot
 - Universities (R&D)

Enhancing Our Urban Forest

All About Trees



CITY OF
MITCHAM





Tree Cities of the World

Celebrating global leadership in urban and community forestry



CITY OF
MITCHAM

Congratulations to the Australasian cities recognised in 2020 as Tree Cities of the World.

These cities are demonstrating leadership in management of their urban trees and are serving as part of the solution to many of the global issues we face today. Each city successfully met 5 core standards of urban forest management in order to earn recognition. This recognition is a testament to their commitment to building a healthy city now *and* for the future. Learn more at treecitiesoftheworld.org.



8

RECOGNISED CITIES

Auckland • Burnside • Mitcham • Lake Macquarie City
Queenstown • Unley • Victoria Park • Wellington

Tree City of the World Since 2020

Arbour Day 2020

Mitcham Reserve - 1 September 2020

- 'Virtual Event'
- Instructional Video Online – how to plant a tree
- Community trees given away



Tree City of the World Since 2020

Arbour Day 2021

- Monalta Reserve - 1 September
- **300** understory shrubs and **12** semi advanced trees planted
- School participation (**40** school children)
- **500** community trees given away

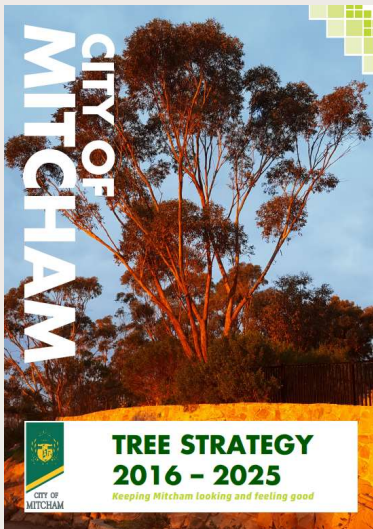


A programme of:

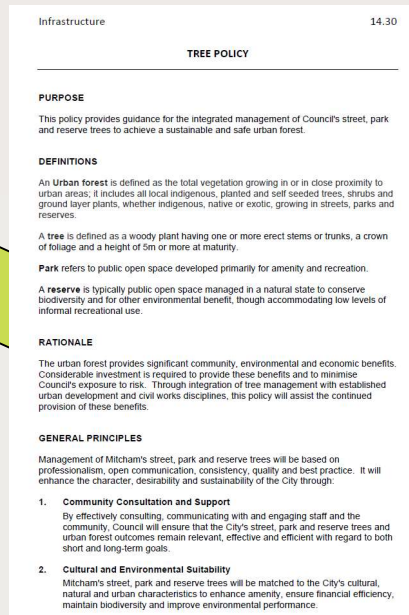


Our Guiding Framework

Our Tree Management development:



Strategic direction for enhancing our urban forest



The **Principles** of how we manage trees at the City of Mitcham

What and where

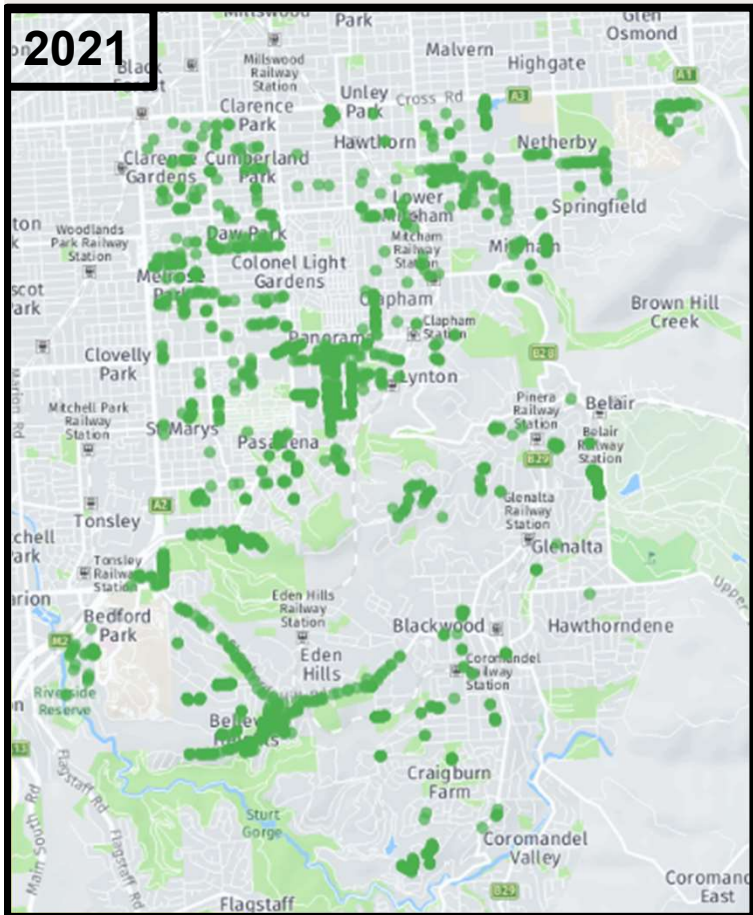


CITY OF
MITCHAM

Enhancing City of Mitcham's Tree Canopy: Accelerated Planting Program



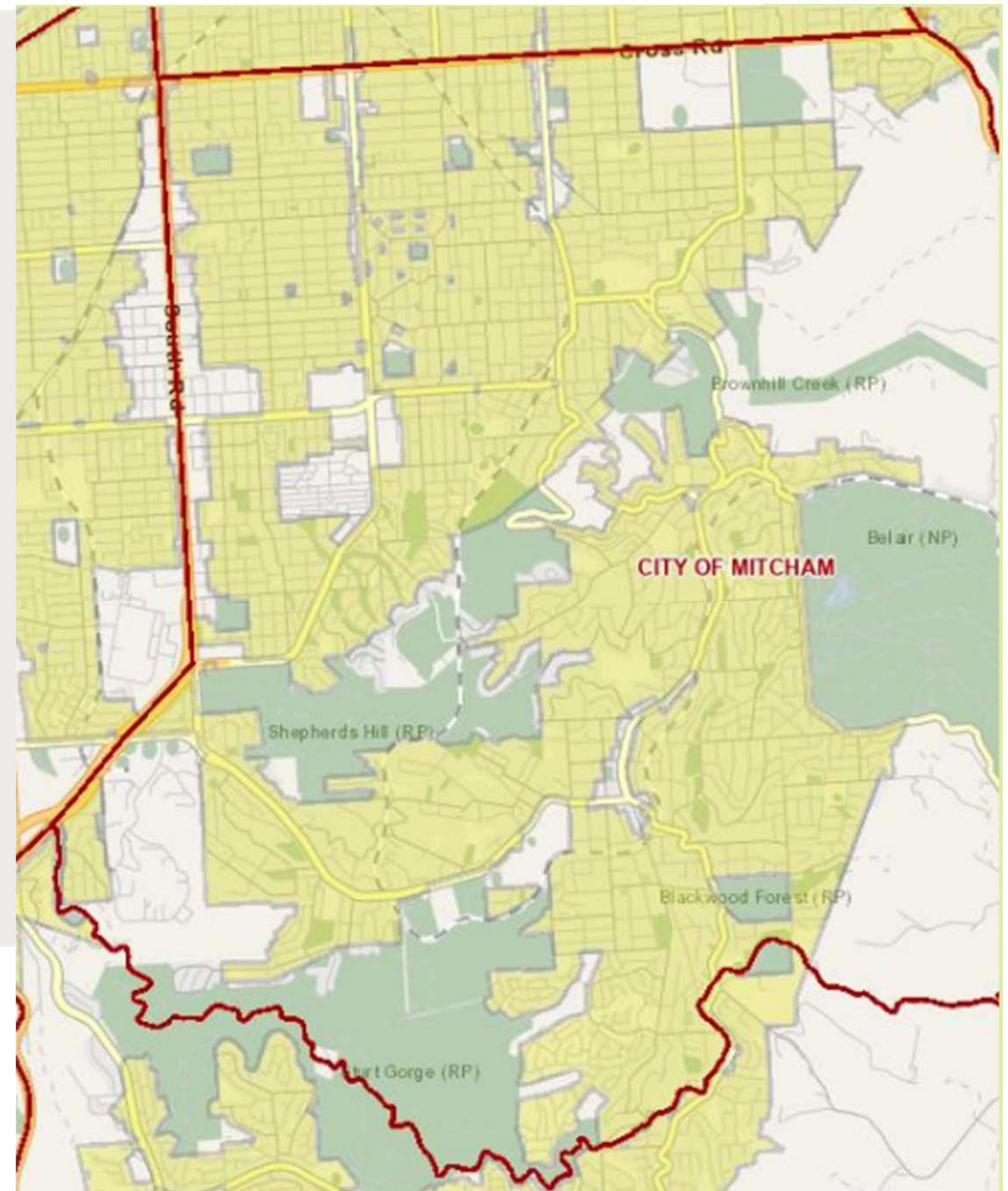
Target Increase: 1,800
trees per annum from
2021



Tree Offset Scheme – Potential Impacts

WORST CASE SCENARIO...

- 75% of council affected
- Applicants pay not plant
- Lifecycle cost outweighs offset rate by a factor of 5 (approx.)
- Running out of space already well tree'd



FORMING A CONNECTED ADVOCACY POSITION ON TREE REFORM

**Native
Vegetation
Act**

Parliamentary Review

**Regulated
+
Significant
Tree
Legislation**

*LGA
Review*

**Urban Tree
Canopy
Overlay /
Offset
Scheme**

*PDI Act
(P&D Code)*

**Bushfire
Hazards
Code
Amendment**

*PDI Act (P&D
Code)*



CITY OF
MITCHAM

Council – State Gov Election Priority



City-Wide Tree Planting Partnership Program

Capitalising on state land for increased tree canopy



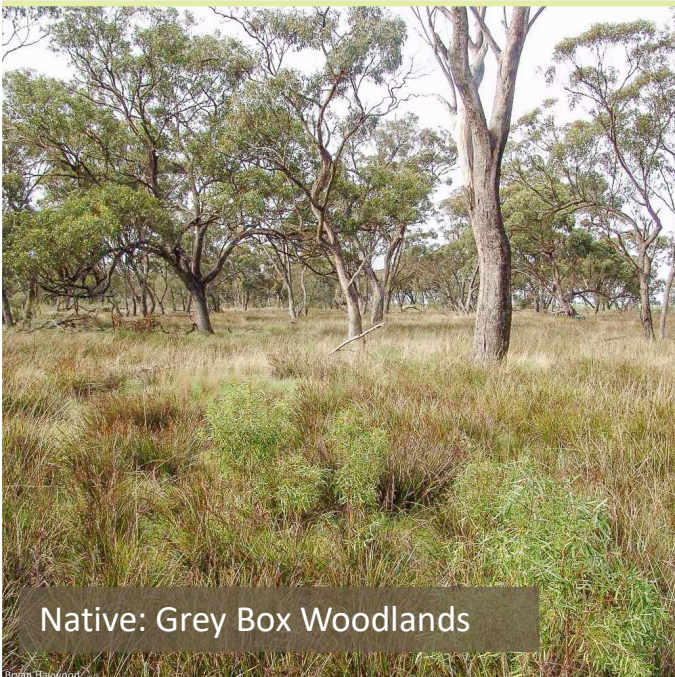
CITY OF
MITCHAM

Proposal

Partner with the State Government through a one-off Council funding contribution towards a project to target planting approximately 400 additional trees on state government owned land located within the City of Mitcham.

Weed & Pest Control

- Total of...
 - 60 km of trails
 - 945 hectares of open space
 - 287 parks, gardens and recreational areas
- Vegetation and biological risk management to control and eliminate weed species



Native: Grey Box Woodlands



Invasive: Olive Tree

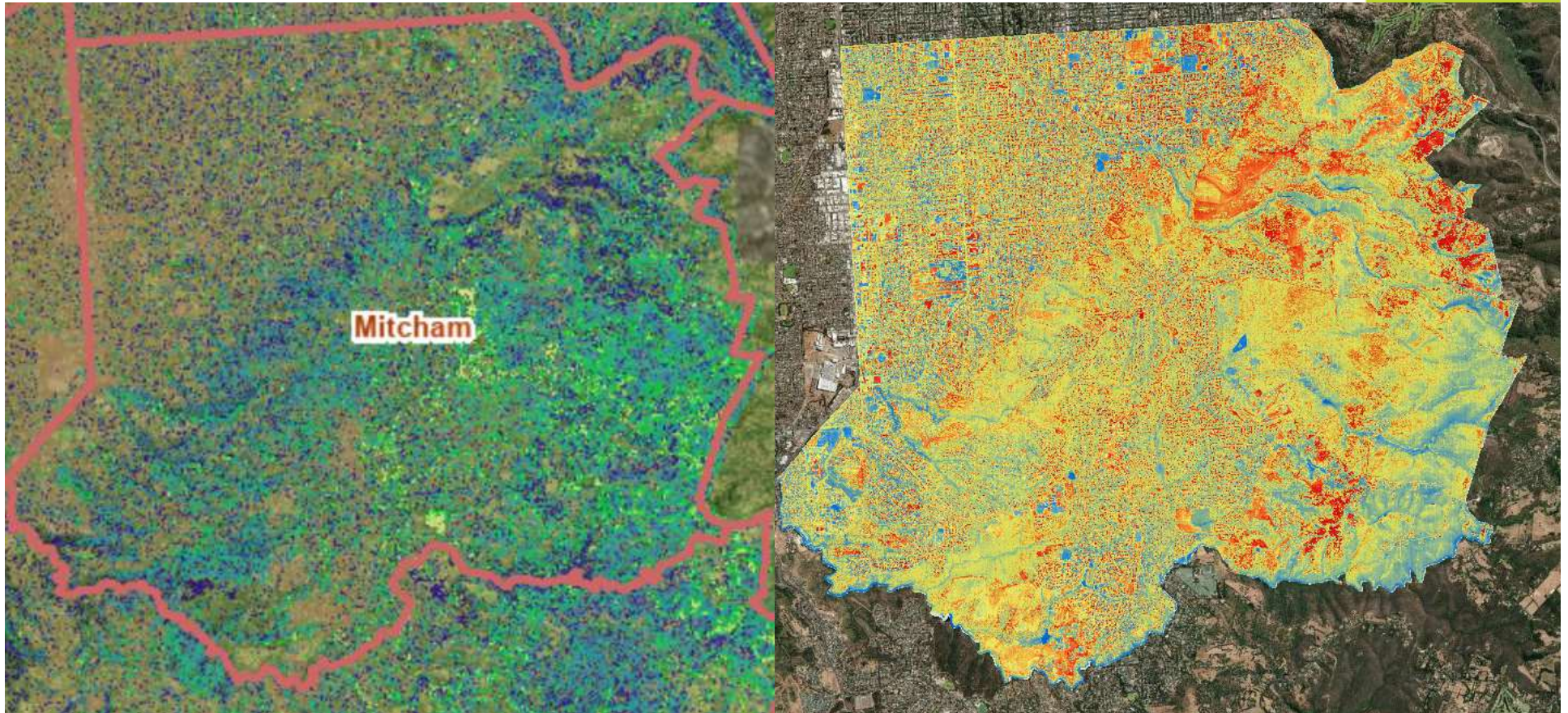


Method: Drill and Fill



CITY OF

Urban Heat and Tree Mapping



Tree Canopy Cover

Urban Heat



Smart Water Design: Investing in 'Green' Infrastructure



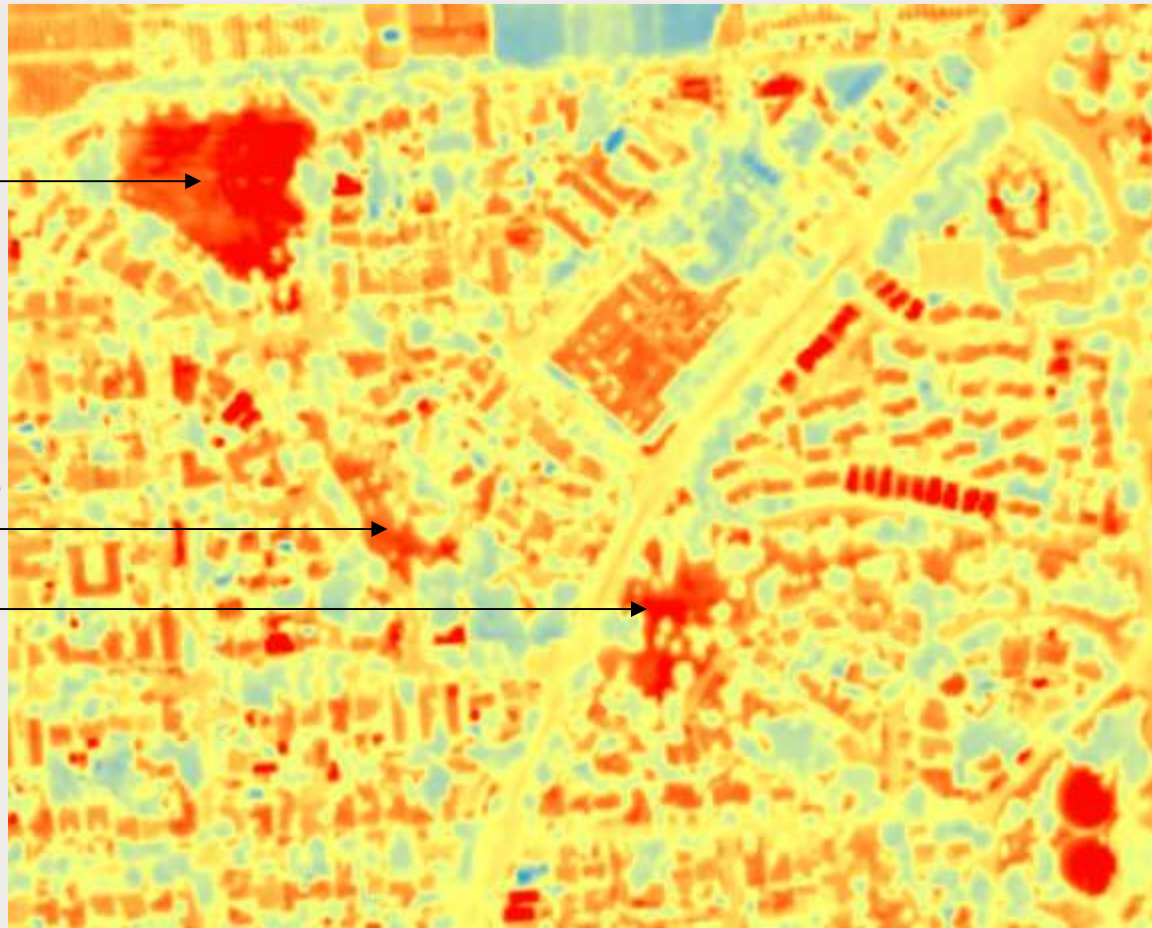
'Green' Infrastructure

Pasadena Biodiversity Corridor

Branson Reserve

Sierra Nevada Reserve

Grant Jacobs Reserve



CITY OF
MITCHAM

'Green' Infrastructure Pasadena Biodiversity Corridor

Pasadena Biodiversity Corridor - Stage 1 (Oct 21 - Jan 22)

Sierra Nevada Reserve

- Vegetated swale
- Rock riffles at intervals along swale to slow water flow with reed and sedge planting to filter water
- Walking trail with crossing points over swale
- Grassed open space with seating and picnic facilities
- New playground and opportunities to integrate nature play with creek setting



Legend

- Existing underground stormwater pipeline
- - - Tree irrigation trenches
- Walking trail to improve accessibility of reserves with connectivity to neighbourhood
- Swale with rock riffles planted with native biofiltration reeds and sedges
- Native tree planting e.g. *Eucalyptus* sp. irrigated via infiltration trench from swale
- Integrate nature play opportunities into swale setting
- New play space
- Provide irrigated lawn area to enhance open space
- Detention basin with rockwork weir overflow and piped outlet to swale, vegetated with native biofiltration species

Grant Jacob Reserve

- Diversion of main pipeline
- 1.1ML detention basin with low flow outlet to dryland swale and overflows to existing main pipeline
- Vegetated swale with rock riffles to cleanse water prior to outlet to existing G.I.P.
- Walking trail within reserve
- Seating opportunities



OUTER SPACE

Project: PASADENA BIODIVERSITY CORRIDOR - STAGE 1 (OCT 21 - JAN 22)
Client: CITY OF MITCHAM
Drawing: CONCEPT PLAN



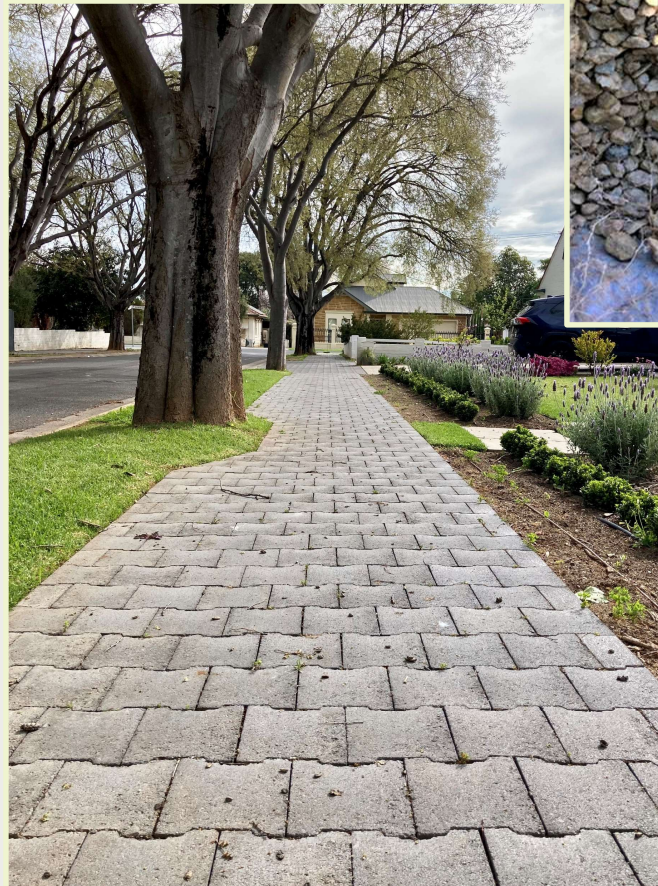
Date: 15-09-20
Dwg No.: OS2004_CP01
Revision: D

Drawn By: BP
Checked By: KB
Approved By: KB

'Green' Infrastructure

Mitcham's Permeable Footpaths

- Permeable footpath trials first began around 2009
- **Benefits:**
 - Reduced maintenance and risk from tree roots
 - Retention and irrigation of rainfall
 - Mitigate urban heat island effects
 - Reduce water pollution
 - Flood mitigation





Puddles, tripping hazards,
short tree and pavement life
cycles



Avoid puddles & hazards,
enjoy long tree and
pavement life cycles

Annually 4,000 L water can be captured per 8 m² of permeable pavement with an average rainfall of 500 mm



Permeable footpath installation:

2019/20 - 70% (17,000m²)

2020/21 – 48% (14,000m²)

2021/22 – 70% (12,000m²) **planned**

Capturing 21.5 million litres of water

'Green' Infrastructure Tree Inlets

- Trialling since ~2012
- Over 500 installed across City of Mitcham (harvesting \$1.25m litres of water per annum*)
 - 189 in 2019-20
 - 100 in 2020/21
- Now 'standard' installation with Council infrastructure Renewal
- **Key Benefits:**
 - Retention of rainfall for greening street trees and verges
 - Increased water uptake and tree growth
 - Mitigates flooding and urban heat island effect
 - Remove nuisance ponding

* Based on 2500litres per inlet pa



'Green' Infrastructure Continuing Research: Hawthorn Catchment

- Green Adelaide Funding
- Bounded by Egmont Tce, Grange Rd, King Edward Ave, and Angus Rd in Hawthorn
- **17.5** hectares
- **200** TREENET inlets
- **3,244 m²** permeable paved footpaths
- Site of on-going research



Stormwater helps cool our city

Trees fed by stormwater are acting like 'nature's air conditioners', according to research undertaken by City of Mitcham and Flinders University.

A two-year study supported by funding from Green Adelaide has found trees in streets with TREENET inlets – gravel-filled wells that collect stormwater from the kerb – use up to 30 per cent more water during summer months.

Flinders University student Xanthia Gleeson said research showed an extra 160 litres of water a day per tree was being fed to the tree canopy.

"It's a similar concept to an evaporative cooler," Xanthia said. "Trees transpire water which cools the air around their canopies and along the street."

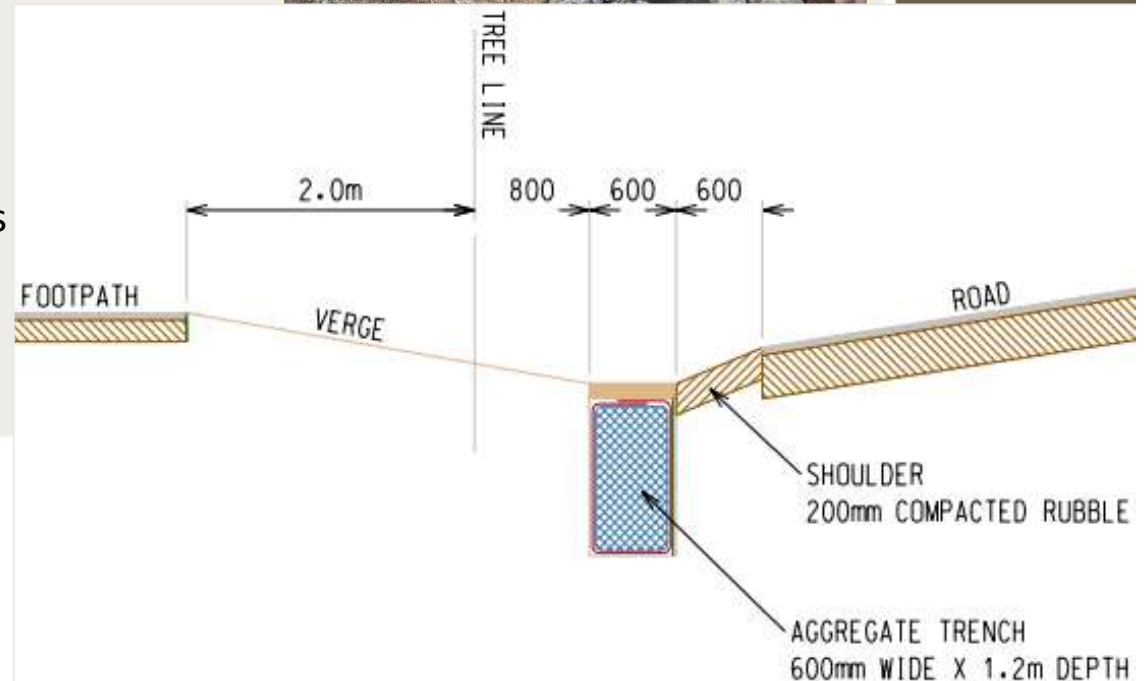
The extra water also boosts growth in trees, with sapling trunk diameter growth 25 per cent higher and height growth 50 per cent higher in streets with inlets.

TREENET inlets are installed across the City of Mitcham. Each inlet harvests between 1,800 and 4,500 litres of stormwater in an average year.



'Green' Infrastructure Soakage Pits & Trenches

- Used by Mitcham since mid-2000s
- Rock-filled trenches connected by pipes for passive irrigation
- Total: **180 metres**
- **Benefits:**
 - Allows water to infiltrate low-permeable soils
 - Coupled with tree planting to improve ground movement and infiltration rate
 - Prevents localised saturation issues + maximises water availability
 - Improves water quality
 - Cost effective



'Green' Infrastructure - Continuing Research

Soil movement study – pre/post WSUD

Objectives:

- increase passive irrigation and street cooling
- reduce asset maintenance costs and tree root damage and injury

Part of \$105,000 program funded from Green Adelaide's Water Sustainability Grant

Collaboration with Uni SA, Flinders Uni and City of Mitcham

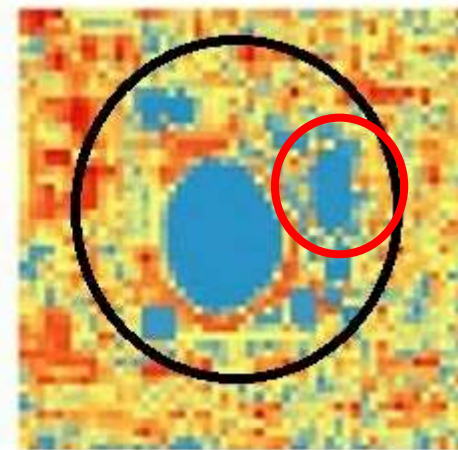
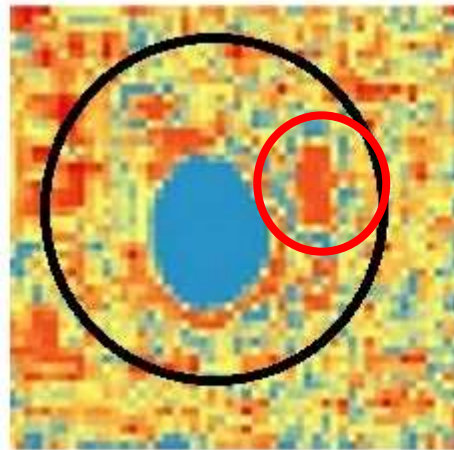


Green Infrastructure

Rain Gardens: Norman Reserve Project



BEFORE



AFTER



'Green' Infrastructure

Rain Gardens: Harvey Hayes Reserve

BEFORE



AFTER



CITY OF
MITCHAM

'Green' Infrastructure

Case Study: Kegworth and Wheaton Roads Melrose Park

Historically an intersection that flooded

Permeable paving of the road to:

- Passively irrigate street trees
- Passively irrigate nearby Kegworth Reserve
- Prevent street flooding
- Reduce costs:
\$200,000 vs \$1.2M



Maximising 'Green' Infrastructure

Case Study: Kent Street, Hawthorn Upgrade

- Permeable paving parking bays
- Rain garden beds
- Stormwater infiltration wells
- New street tree scaping



Maximising 'Green' Infrastructure

Case Study: Price Avenue, Clapham Upgrade



BEFORE

PERMEABLE
FOOTPATH

TREE
INLETS

AFTER

'Green' Infrastructure

Case Study: St Mary's Park Tyre Permeable Car Park

500 used tyres



24 parking bays

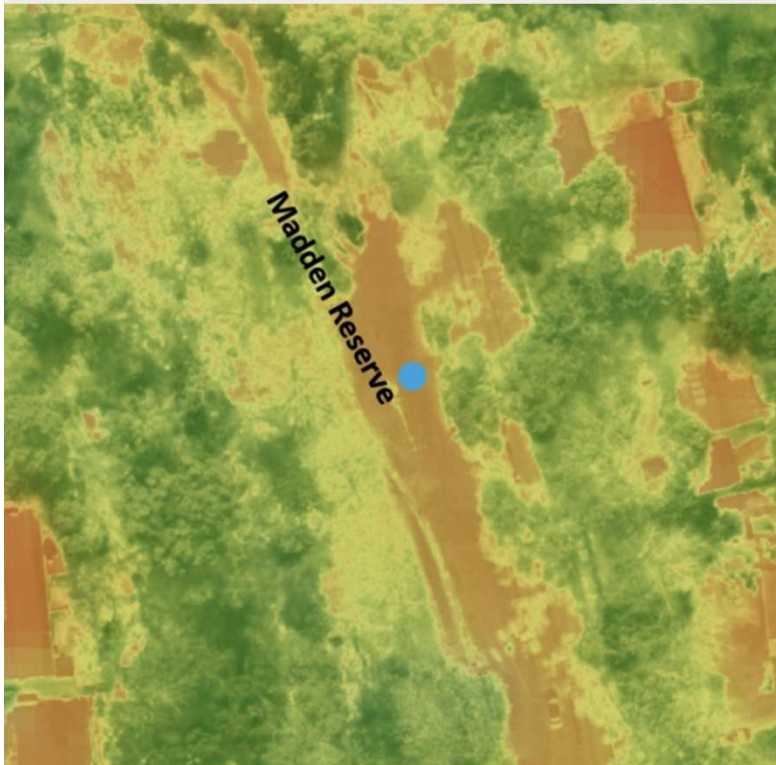


60 m³ of stormwater absorbed

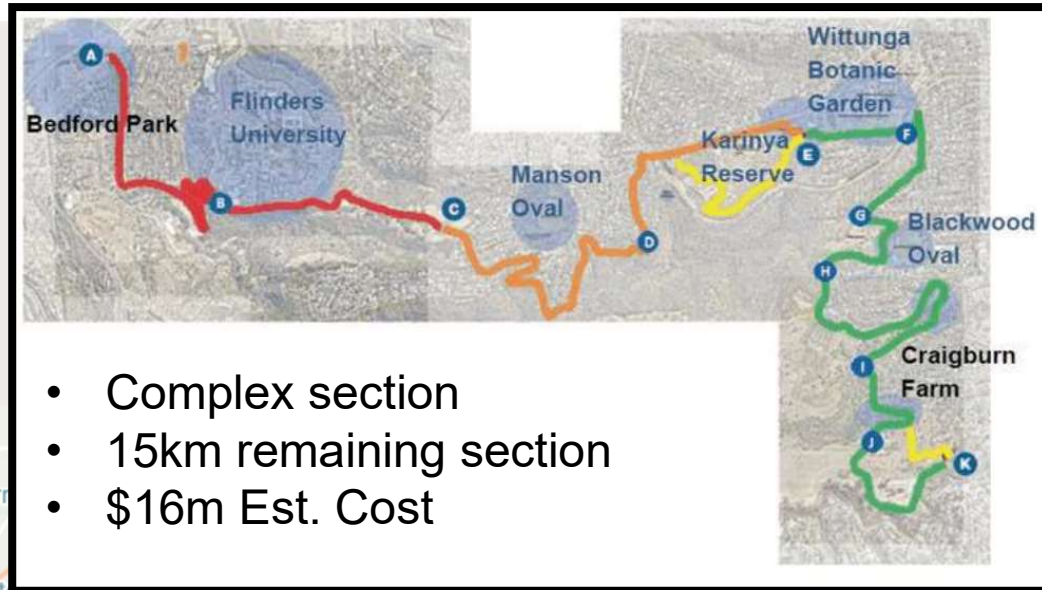


Some of our next 'Green' Infrastructure Projects

- Winona Avenue – Streetscape and Cycling (Flinders to City Bikeway)
- Madden Reserve – Permeable Car Park, rain garden and Revegetation
- 'Green Shady' Bus Shelters

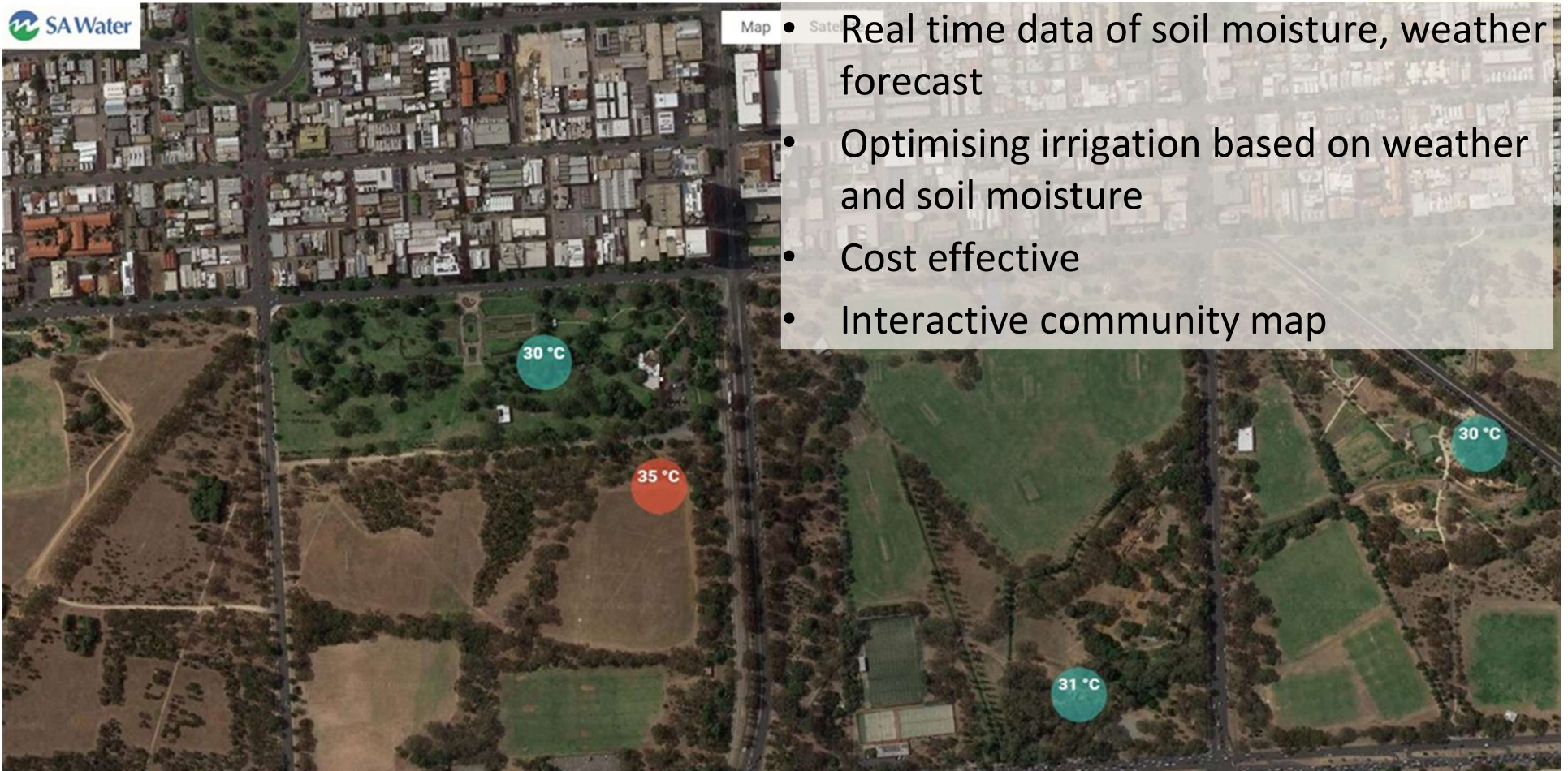


Sturt River Linear Trail – Remaining Extent



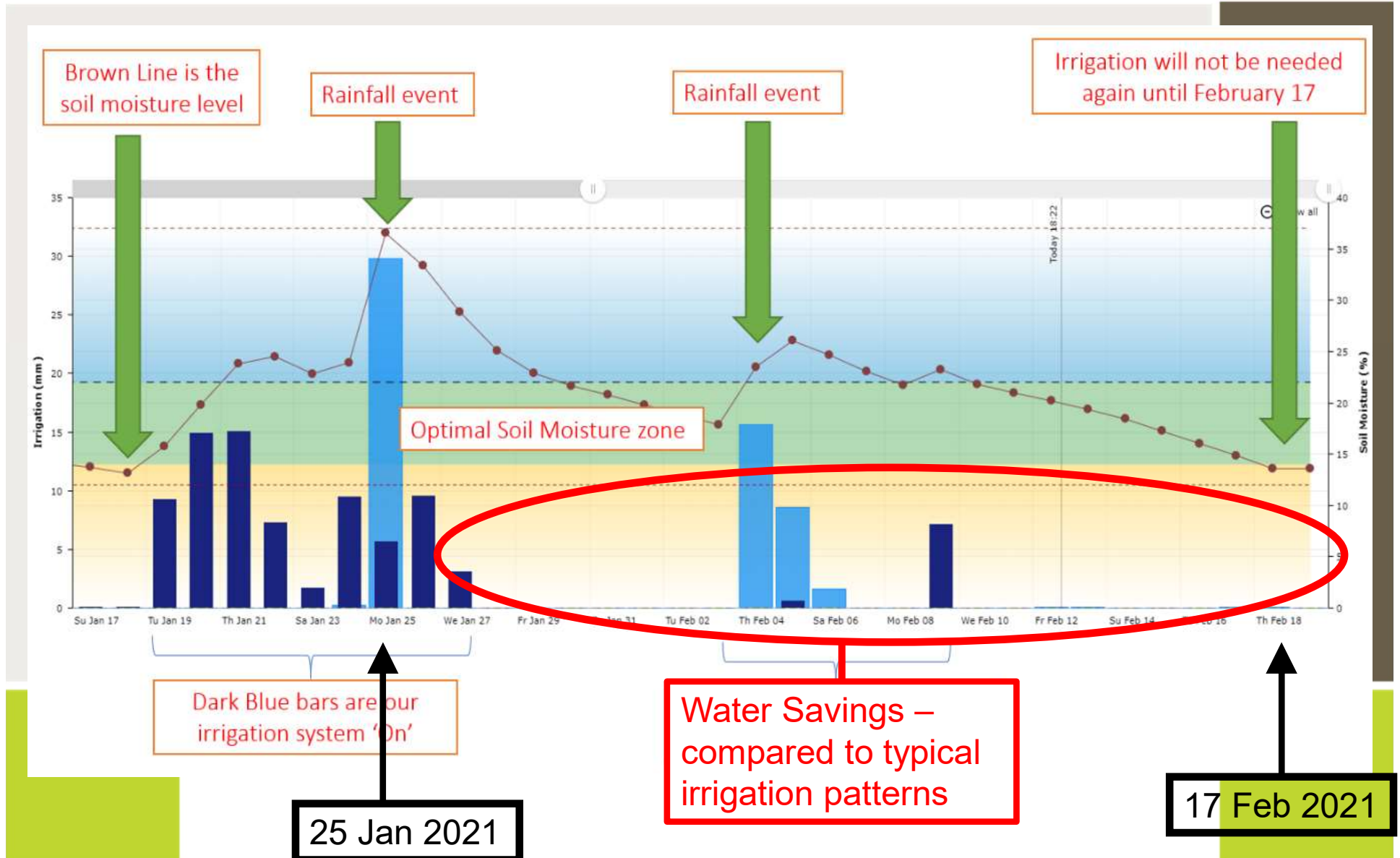
CITY OF
MITCHAM

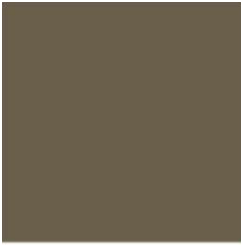
Smart Watering: Cooling the Community



SA Water Collaboration

Smart Watering: Cooling the Community





Greener Living



CITY OF
MITCHAM



Green Living Series



**GREEN
A LAIDE**

**Resilient
South**

**MITCHAM
LIBRARY
SERVICE**

Mitcham Memorial Library
154 Belair Road, Hawthorn
Ph 8372 8244

www.mitchamcouncil.sa.gov.au



GREEN LIVING

DEMYSTIFYING ELECTRIC VEHICLES

Electric cars are here now - find out what's available, the real costs and how far you really can travel. The answers may be surprising.
With Sally Knight from EVA SA.

Date: Monday 24 May
Time: 2pm—3.30pm
Where: Mitcham Memorial Library
Cost: \$5
Bookings: Essential.
<http://mitchamlibraryservice.eventbrite.com>

GARDENING IN A CHANGING CLIMATE

Predicted extremes of weather and rising temperatures will prove challenging for many gardens and gardeners. Gardens have many benefits including helping to reduce energy consumption. Learn how we can adapt our gardens and gardening practices in a changing climate.
Presenter: Horticulturist Peter Wilson.

Date: Thursday 27 May
Time: 2pm—4pm
Where: Mitcham Memorial Library
Cost: \$5
Bookings: Essential.
<http://mitchamlibraryservice.eventbrite.com>

WATER SENSITIVE DESIGN

Learn how to apply Water Smart Urban Design (WSUD) principles in your home and backyard including rainwater harvesting, greywater reuse and water conservation, with Water Sensitive SA.

Date: Thursday 17 June
Time: 2pm—4pm
Where: Mitcham Memorial Library
Cost: Free
Bookings: Essential.
<http://mitchamlibraryservice.eventbrite.com>

WATER SENSITIVE DESIGN—ONLINE

Date: Thursday 1 July
Time: 7pm—8pm
Where: Online
Cost: Free
Bookings: Essential.
<http://mitchamsustainability.eventbrite.com>



CLIMATE READY TRAINING

Find out what you can do to become a *Climate Change Champion* in this two part training course presented by Red Cross. Learn about local climate impacts, ways to avoid the worst of them and how to get your community ready.

Queries : Ph 8372 8853

TREES ARE COOL: TREE PLANTING

Learn about selecting trees and plants that are suitable for the hills and plains, including soils and aspect, with a focus on species endemic to the region.

Includes information on:

- Planting - preparation, planting, aftercare
- Maintenance - watering, fertilising, pruning
- Propagation - seed collection, storage, sowing, preparing and planting cuttings

Presenter: Horticulturist Peter Wilson.

Date: Thursday 24 June
Time: 2pm—4pm
Where: Mitcham Memorial Library
Cost: \$5
Bookings: Essential.
<http://mitchamlibraryservice.eventbrite.com>

Dates: Saturday 5 June & Saturday 12 June
Time: 12.30pm-4pm
Where: Mitcham Memorial Library

Cost: Free
Bookings: Essential
<http://mitchamsustainability.eventbrite.com>

Transitioning to Clean Energy



CITY OF
MITCHAM

Clean Energy Initiatives



- Council Building Solar Program
- Community Solar Program
- Fleet Transition: Greener Vehicles
- LED Lighting Upgrade Program

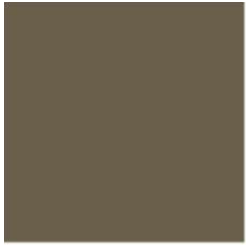


Key Challenges

1. Availability of Council land for tree planting
2. The Tree Offset Scheme
3. Regulation Reviews - Tree Canopy Impacts
4. Funding Challenges & Grant opportunities



CITY OF
MITCHAM



Thank you

...questions?

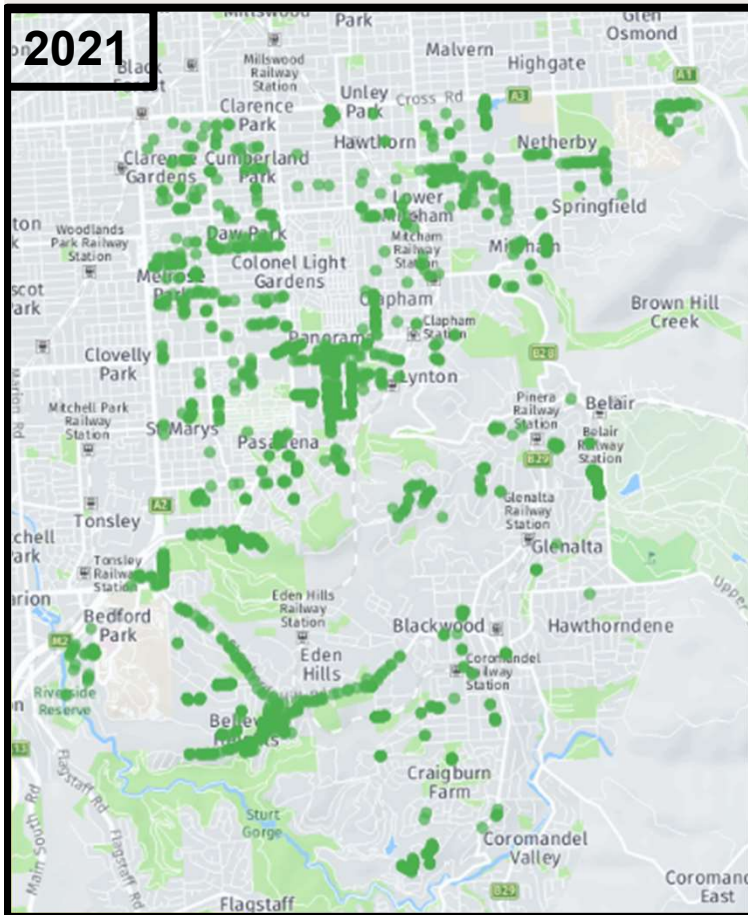


Enhancing City of Mitcham's Tree Canopy: Accelerated Planting Program



Target Increase: 1,800
trees per annum from
2021

1836 trees
planted in 2021



CITY OF
MITCHAM