

# Integrated stormwater planning for a new city – the Western Sydney Aerotropolis

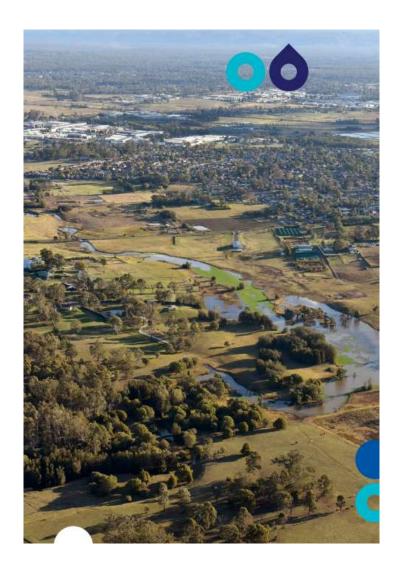
Dan Cunningham

Franc 2025

### **Presentation outline**

Sydney **WAT₹R** 

- Introduce the Aerotropolis
- New waterway health targets
- The development that is coming
- Integrated stormwater servicing approach
- Scheme planning
- Challenges
- questions

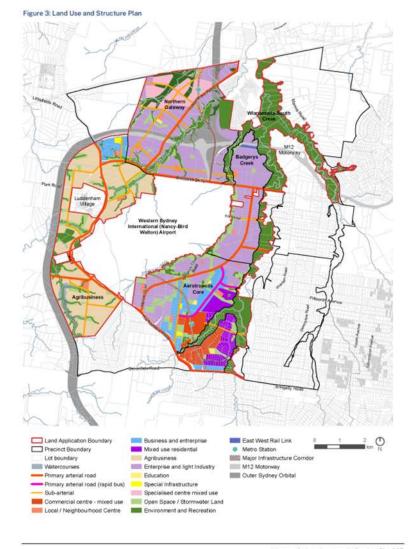


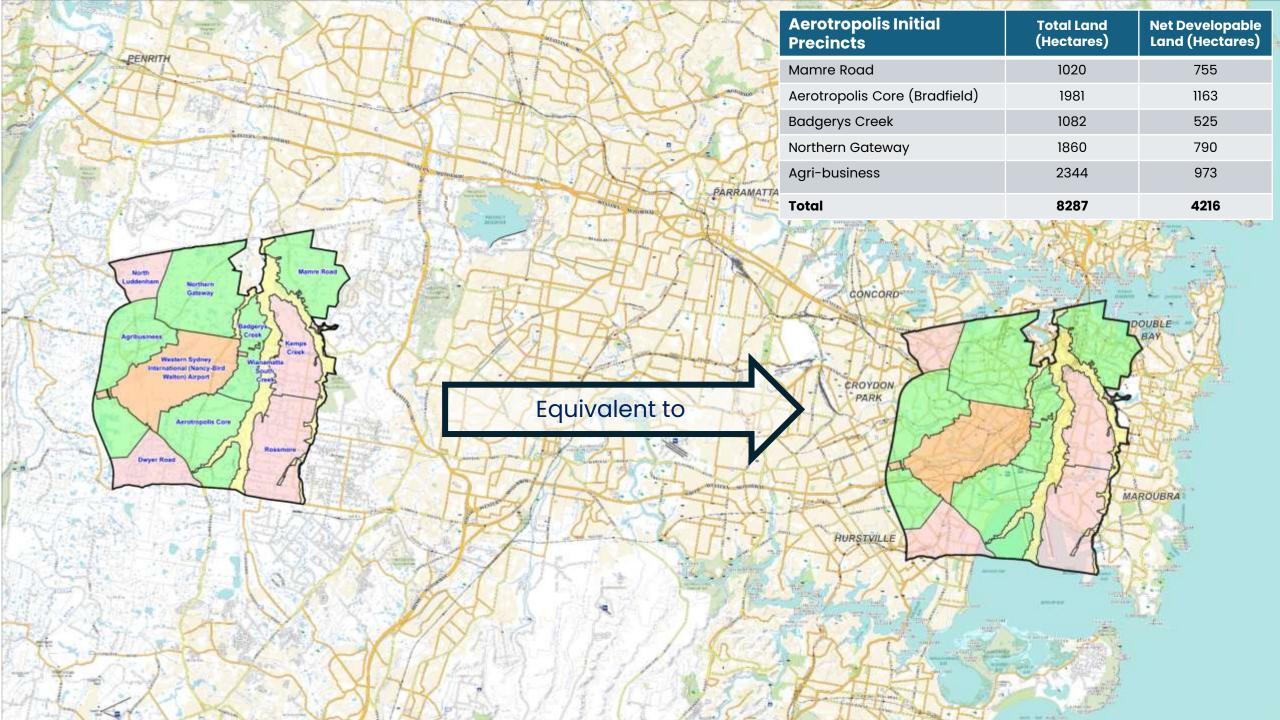
### Welcome to the Aerotropolis

Sydney **WAT₹R** 

- Initial precincts rezoned in 2020
- Precinct plan published 2022
- Sydney water installed as regional stormwater authority 2022
- Airport opens late 2026













### Waterway Health Objectives – Water Quality and Quantity (Flow) Targets

### Targets outlined in the Aerotropolis Precinct Plan and DCP.

Wianamatta-South Creek stormwater management targets

Table 16 Operational Phase Stormwater Quality Targets Option 1 – annual load reduction

Parameter	Target - reduction in mean annual load from unmitigated development
Gross Pollutants (anthropogenic litter >5mm and coarse sediment >1mm)	90%
Total Suspended Solids (TSS)	90%
Text Total Phosphorus (TP)	80%
Total Nitrogen (TN)	65%

Table 17 Operational Phase Stormwater Quality Targets Option 2 – allowable loads

Parameter	Target - allowable mean annual load from development
Gross Pollutants (anthropogenic litter >5mm and coarse sediment >1mm)	< 16 kg/ha/y
Total Suspended Solids (TSS)	< 80 kg/ha/y
Text Total Phosphorus (TP)	< 0.3 kg/ha/y
Total Nitrogen (TN)	< 3.5 kg/ha/y

Table 18 Operational Phase Stormwater Quantity (Flow) Targets Option 1 - MARV

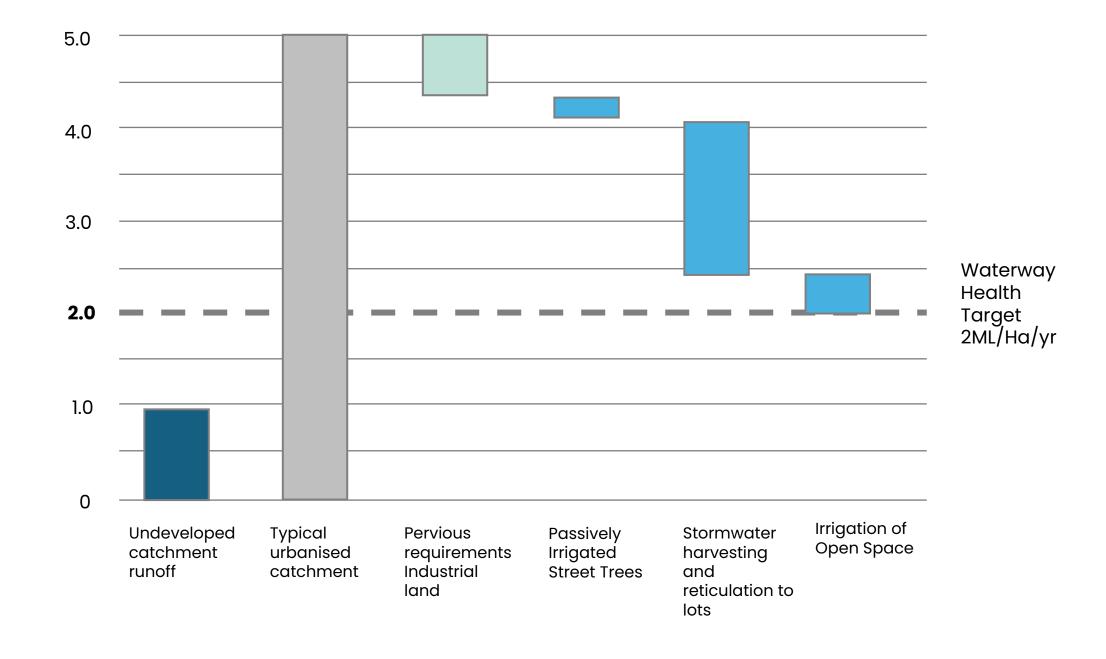
Parameter	Target
Mean Annual Runoff Volume (MARV)	≤ 2 ML/ha/y at the point of discharge to the local waterway
90%ile flow	1000 to 5000 L/ha/day at the point of discharge to the local waterway
50%ile flow	5 to 100 L/ha/day at the point of discharge to the local waterway
10%ile flow	L/ha/day at the point of discharge to the local waterway

Table 19 Operational Phase Stormwater Quantity (Flow) Targets Option 2 - flow percentiles

Parameter	Target
95%ile flow	3000 to 15000 L/ha/day at the point of discharge to the local waterway
90%ile flow	1000 to 5000 L/ha/day at the point of discharge to the local waterway
75%ile flow	100 to 1000 L/ha/day at the point of discharge to the local waterway
50%ile flow	5 to 100 L/ha/day at the point of discharge to the local waterway
Cease to flow	Cease to flow to be between 10% to 30% of the time







### Integrated stormwater servicing approach

Year round.

open space.

canopy cover.

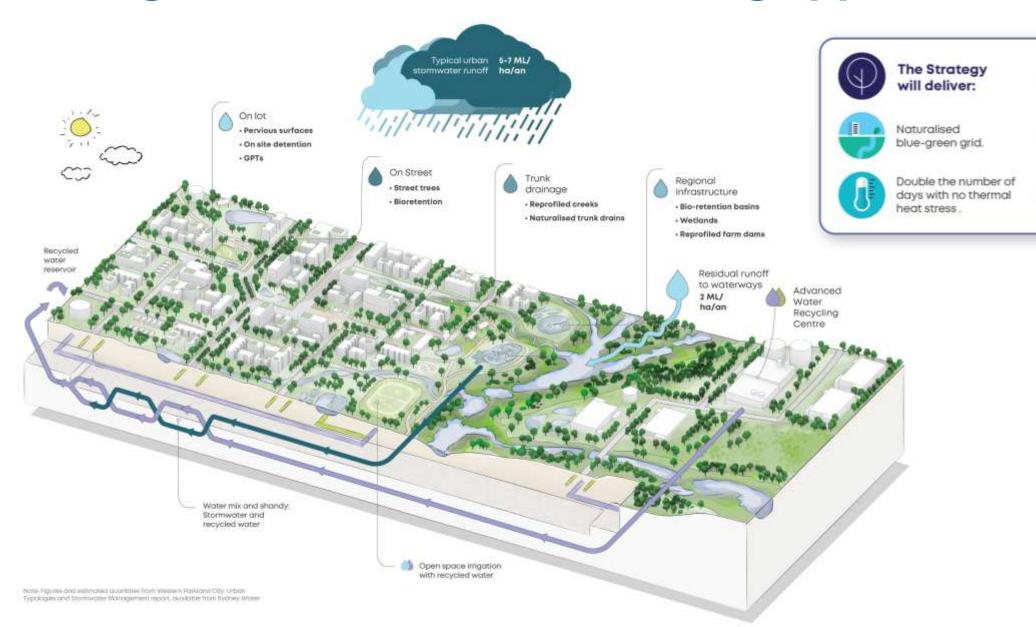
temp of up to

5 degrees at 2055.

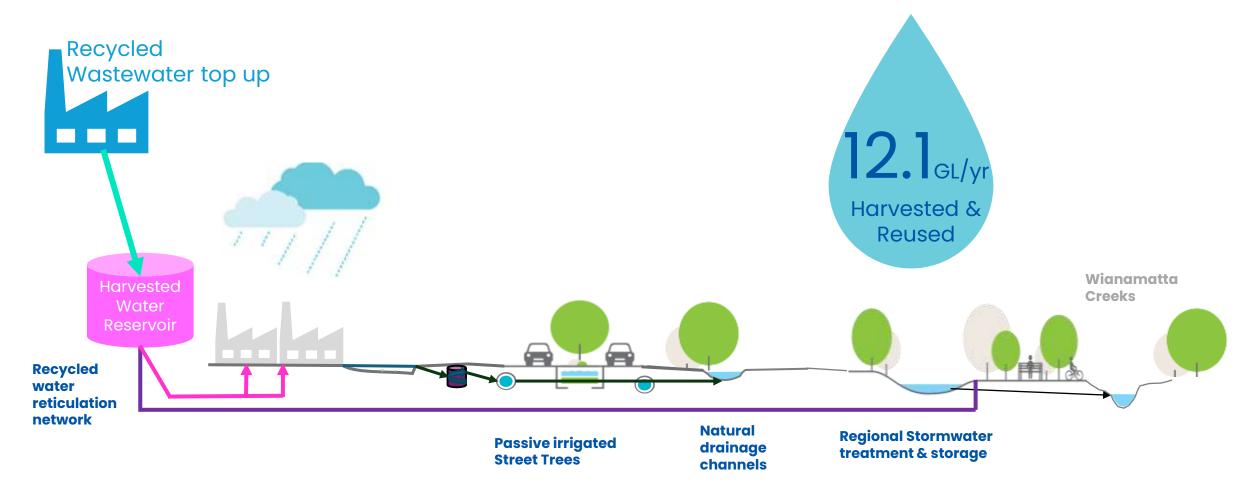
Reduction in max daily

greener

3x more



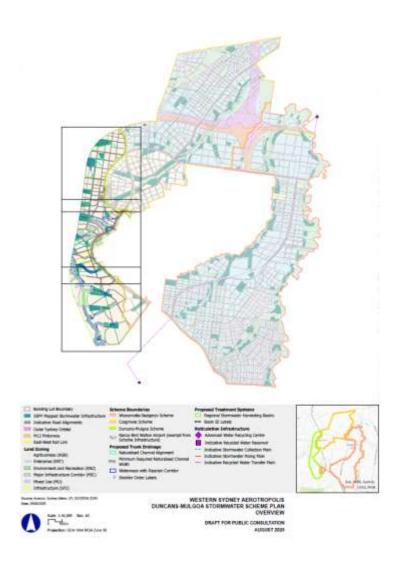
# Integrated stormwater servicing approach

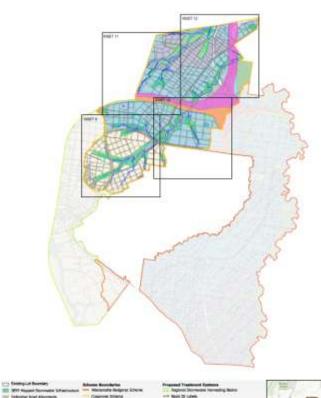




# Scheme planning

# Sydney WATER





III Debated Special State Special

Substitute Statements States, Wallet

MIL Materials

Start Water Self (self.)

Agriculture (AGR)

BOWLING (BOT)

Mill Wood to ONE

Transport and Security (NO)



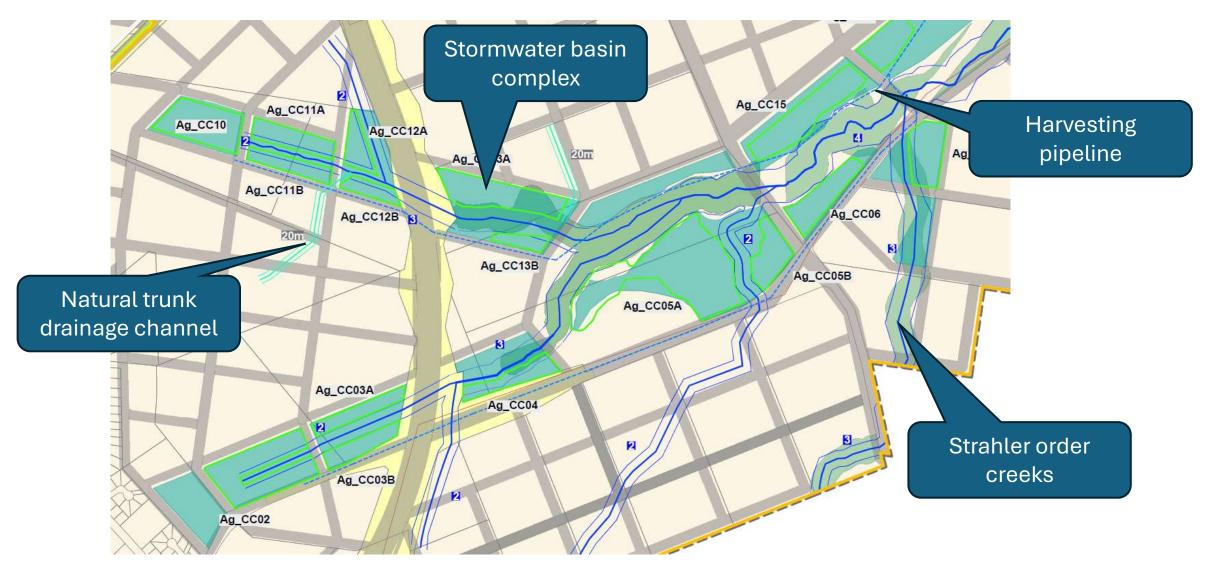
OVERVIEW WATER

The Management of Management of the Control of the Westernette Gelgeren Scheme SET Report Screware Inframetive Regional Dermanter Howevery South WE Indicated Road Algorisms (T) Clube System Office Over Week Nations Improved Truck Drainage Land Zoning Saturalised Channel Righteen Agricultura (AGC) Enterprise (ENT) Indicates Securing Water Toronto Man UT Interpret and Normalio 2002 (fixed like (MLI) Influence turn (1972) WESTERN SYDNEY AEROTROPOUS Sydney

DRUFT FOR PUBLIC COMBUSCITION WATER

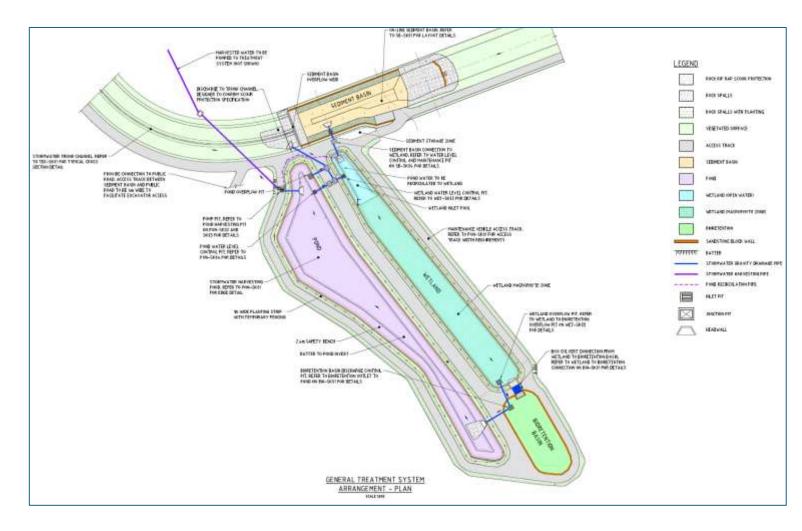
# Scheme planning



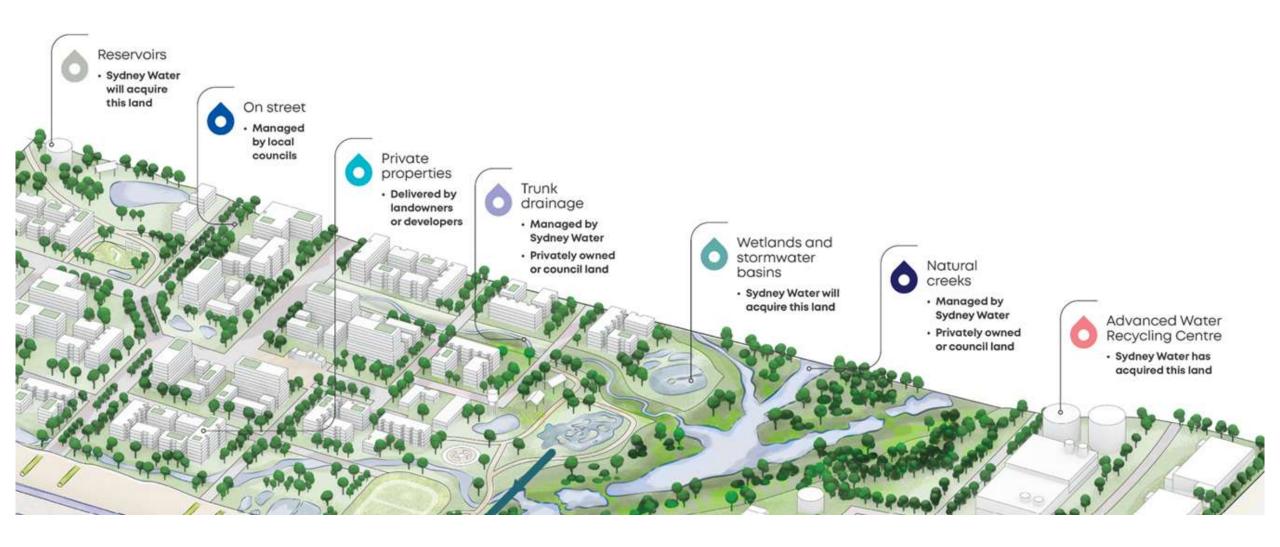


### ALL PLOWS UNTREATED LOW FLOW basin (offline) TREATED OVERPLOW ALL FLOWS TREATED TREATED THEATED FLORS FLOWS: Wetland Bioretention basin (online) UNITREATED HIGHFLOW TREXTED MARRILOW THEATED FLOWS TREATED OVERFLOW Storage pond TREATED FLOWS UNTREATED HED HEAVY TREATED FLOWS

### Stormwater treatment and storage basins



## **Ownership and maintenance**



### Challenges

- Its new and different
- Cost (scheme cost, developer charges)
- Land zoning, cost and availability
- Wildlife strike
- Time (lack thereof)
- Development is underway
- Resourcing

### **Timing**

O No

### November 2020

Stormwater and Water Cycle Management Study Interim Report published for public consultation

October 2021

Open Space Needs Study published and Aerotropolis SEPP amended

March 2022

The Western Sydney Aerotropalis Precinct Plans published with the Starmwater and Water Cycle Management Study and Riparian Corridors Assessment

Sydney Water appointed as Regional Stormwater Authority for the Western Sydney Aerotropolis, including the Mamre Road area

June 2022

Consultation on Draft Aerotropolis Stormwater Framework and draft Scheme Plan for the Mamre Road area

October 2024

Stormwater Developer Works Policy finalised

December 2024

Mamre Road IPART efficiency review published and exhibition of Mamre Rd Integrated Stormwater Development Servicing Plan

March 2025

Draft Scheme Plan exhibition: Wianamatta Badgerys & Cosgroves areas

May 2025

DSP Registration: Mamre Road

September 2025 WE ARE H

Draft Scheme Plan exhibition for Duncans Mulgoa area and Release of Consultation Outcomes Report for Wianamatta Badgerys & Cosgroves Draft Scheme Plans

Late 2025

Scheme Plans for Wianamatta Badgerys, Cosgroves and Duncans Mulgoa finalised

Late 2025 to early 2026

Exhibition of DSPs for Wianamatta Badgerys, Cosgroves and Duncans Mulgoa

Early 2026

DSP registration: Wianamatta Badgerys, Cosgroves & Duncans Mulgoa

Mid 2026

NSW Government business case approvals

From mid 2026 to 2056

Staged deployment and land acquisition Future dates are indicative and subject to change.

