
Western Parkland City Authority

Bradfield City Centre
Master Plan Application

Smart Cities Implementation Plan and Assessment Report

Prepared by AECOM and WPCA

October 2023

wpcasidney.com

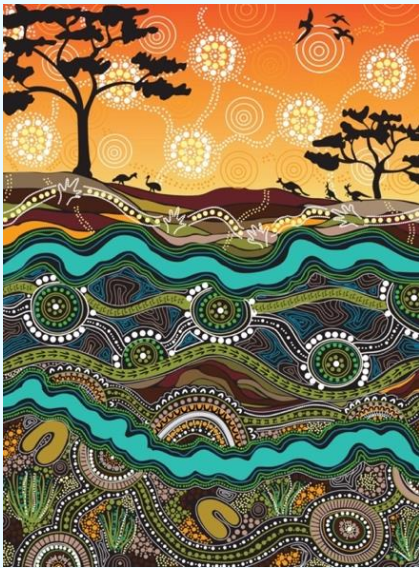
Acknowledgement of Country

Aboriginal people have had a continuous connection with the Country encompassed by the Western Parkland City (the Parkland City) from time immemorial. They have cared for Country and lived in deep alignment with this important landscape, sharing and practicing culture while using it as a space for movement and trade.

We Acknowledge that four groups have primary custodial care obligations for the area: Dharug/Darug, Dharawal/Tharawal, Gundungurra/Gundungara and Darkinjung. We also Acknowledge others who have passed through this Country for trade and care purposes: Coastal Sydney people, Wiradjuri and Yuin.

Western Sydney is home to the highest number of Aboriginal people in any region in Australia. Diverse, strong and connected Aboriginal communities have established their families in this area over generations, even if their connection to Country exists elsewhere. This offers an important opportunity for the future of the Parkland City.

Ensuring that Aboriginal communities, their culture and obligations for Country are considered and promoted will be vital for the future of the Parkland City. A unique opportunity exists to establish a platform for two-way knowledge sharing, to elevate Country and to learn from cultural practices that will create a truly unique and vibrant place for all.



Garungarung Murri Murri Nuru
(Beautiful Grass Country)

Artwork created by Dalmarrri artists Jason Douglas and Trevor Eastwood for the Western Parkland City Authority

Version	Status	Date	Prepared By	Reviewer	Comments
1.0	Draft	24/09/2021	SF/CH	RM	Draft for Comments
2.0	Draft	21/10/2021	SF	RM	Final Draft
3.0	Draft	03/03/2022	SF	RM/GS	Final
4.0	Draft	10/03/2022	SF	RM/GS	Final
5.1	Final	03/06/2022	SF	GAR	Final
6.0	Final	29/11/2022	GAR, AK	MC, CK	Final
7.0	Draft	15/06/2023	GAR, AK	MC, CK	Draft
8.0	Final	30/06/2023	GAR,AK	AK	Final
9.0	Final	01/08/2023	-	HG	Final Review
10.0	Final	17/08/2023		JA	Amendment to Figure 3
11.0	Final	12/09/2023		HG	Amendment to Table 1
12.0	Final	19/10/2023		HG	Update Lot and DP

Executive Summary

The Western Sydney Aerotropolis strives to realise and showcase the Western Parkland City and its surrounds to establish a global gateway. The overarching Smart Western City Program, in addition to Local, State; and Federal policies has established foundational elements and benchmark objectives to support smart city elements. Bradfield City Centre strives to leverage the smart city applications of the Western Parkland City and its surrounds and apply these as a standard baseline to build upon.

The Western Parkland City Authority is seeking Master Plan approval for a mixed-use development of industrial, commercial, open space and residential uses for a 114.6-hectare site complete with its own dedicated Sydney Metro station. This will include a Stage 1 Complying Development Code intended to facilitate development of advanced manufacturing research and innovation, education and recreation uses.

This report has been prepared to articulate the Smart Cities vision for Bradfield, by addressing the relevant Master Plan Requirements, Development Control Plan Requirements, and local and state government agency comments.

Contents

1	Introduction	7
1.1	Purpose of this Report	7
1.2	The Western Sydney Aerotropolis	7
2	Bradfield City Centre	8
2.1	Strategic Context	8
2.2	The Master Plan Site	9
2.3	The Bradfield City Centre Master Plan	10
2.4	The Proposal	11
3	Baseline Investigations and Existing Conditions	12
3.1	Technical Baseline Site Consideration	12
3.2	Area of Focus	12
4	Assessment Requirements and Policy Context	13
4.1	Master Plan Requirements	13
4.2	Agency and Council Comments	13
4.3	Development Control Plan Requirements	14
4.4	Other Considerations	15
5	Smart City Technical Framework	16
5.1	Enabling Connectivity Choice and Change	16
5.2	Harnessing Data Effectively and Responsibly	18
5.3	Embedding Technology for Better City Function	19
6	Smart City Technical Assessment	21
6.1	Master Plan Requirements	21
6.2	Agency and Council Comments	21
6.3	Development Control Plan Requirements	22
6.3.1	DCP Section 2.14 Design for Safe Places	22
6.3.2	DCP Section 2.13 Smart Places	22
6.3.3	DCP Section 2.7 Design and Access	23
6.3.4	DCP Section 4.3.1 Car Parking	23
6.3.5	DCP Section 4.3.2 Bicycle Parking	23
6.3.6	DCP Section 6.5 Telecommunications Facilities	24
7	Conclusion	25

Figures

Figure 1 - Strategic Context.....8

Figure 2 - Master Plan Site.....9

Figure 3 – Bradfield City Centre Master Plan..... 10

Table

Table 1 - Planning & Development Horizons..... 11

Table 2 - Master Plan Requirements 13

Table 3 - Agency and Council Comments 13

Table 4 - Policy Requirements..... 14

Glossary of Terms

AS	Australian Standard
Aerotropolis	Western Sydney Aerotropolis
DA	Development Application
DP	Deposited Plan
DPE	Department of Planning and Environment
LGA	Local Government Area
NSW Government	State Government for NSW
SEPP	State Environmental Planning Policy
DCP	Development Control Plan
MPR	Master Planning Requirements
CPTED	Crime Prevention Through Environmental Design
WFH	Work from Home
AI	Artificial Intelligence

References

Ref	Title	Author	Date
1	<i>Western Sydney Aerotropolis</i>	<i>Aerotropolis</i>	
2	<i>Biodiversity Conservation Act 2016</i>	<i>BC Act</i>	
3	<i>Capital Investment Value</i>	<i>CIV</i>	
4	<i>Smart City Implementation Plan</i>		
5	<i>Bradfield City Centre – Sustainability Infrastructure Report</i>	<i>Flux</i>	November 2022

1 Introduction

The Master Plan Application Report has been prepared in accordance with the State Environmental Planning Policy (Precincts – Western Parkland City 2021) (Western Parkland City SEPP) and Master Plan Guidelines which establish the master planning process for land within the Western Sydney Aerotropolis.

This report addresses the Smart Cities Masterplan requirements for the development of the Bradfield City Centre Master Plan within the heart of the Aerotropolis Core Precinct of the broader Western Sydney Aerotropolis.

1.1 Purpose of this Report

This report accompanies the Master Plan Application for the Bradfield City Centre submitted to the Department of Planning and Environment (DPE).

In preparing this report consultation was undertaken with the following organisations:

- NSW Department of Planning and Environment

All matters were considered to have been adequately addressed within the Master Plan Application or in the accompanying appendices.

1.2 The Western Sydney Aerotropolis

The Western Sydney Aerotropolis is an 11,200-ha growth area within the Western Parkland City, the gateway and economic powerhouse of Western Sydney.

The Aerotropolis surrounds the new Western Sydney International Airport and includes 10 precincts which focus on advanced manufacturing, technology, research, training, education, freight and logistics, agribusiness, and mixed-use development.

The first phase of the Western Sydney Aerotropolis Planning Package was finalised in September 2020, and includes the Western Sydney Aerotropolis Plan (WSAP), Western Sydney Aerotropolis (Aerotropolis) State Environmental Planning Policy (Aerotropolis SEPP) and the Western Sydney Aerotropolis Development Control Plan (DCP) Phase 1.

On 1 March 2022, the Aerotropolis SEPP was consolidated into the State Environmental Planning Policy (Precincts – Western Parklands City) 2021 (Western Parkland City SEPP). The Aerotropolis Planning Package and supporting technical studies for the initial precincts was finalised on 25 March 2022. The Planning Package included amendments to the Western Parkland City SEPP and Aerotropolis Precinct Plan.

The proposed Master Plan Application for the Master Plan Site has been formed by the requirements of the WSAP, Western Parkland City SEPP, Final Aerotropolis Precinct Plan, and the Phase 2 DCP, as required by the Master Plan Guidelines.

2 Bradfield City Centre

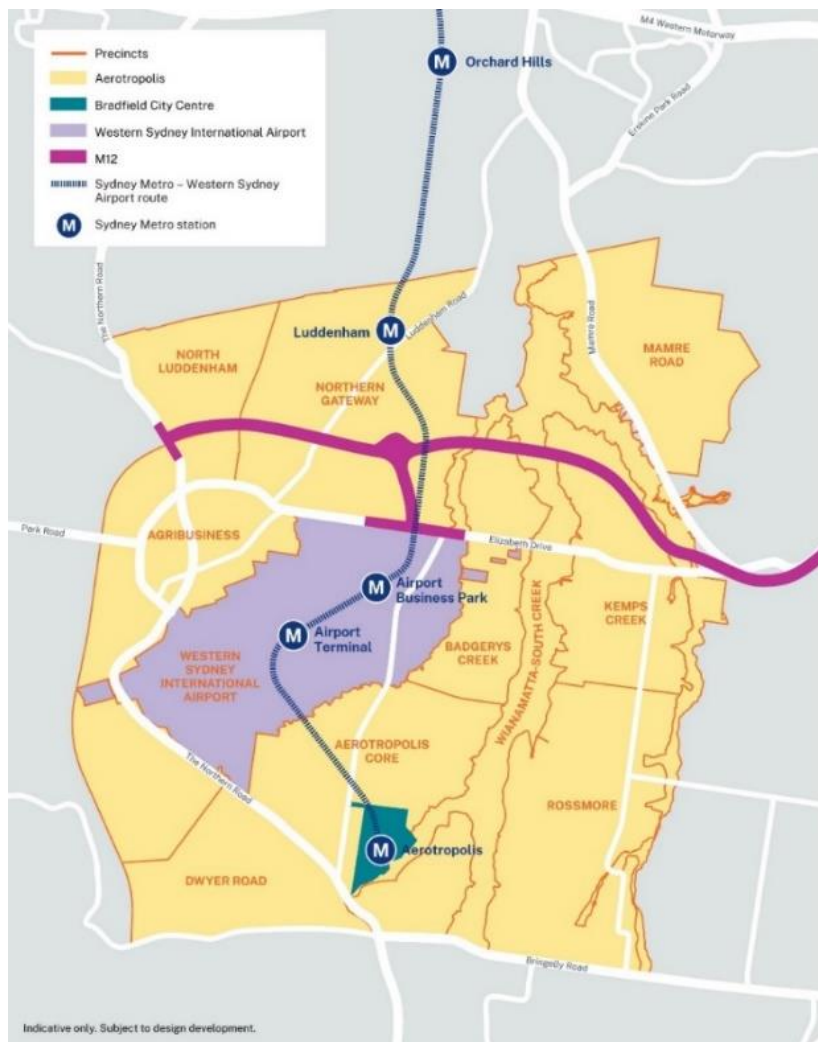
2.1 Strategic Context

Bradfield City Centre is located to the south-east of the new Western Sydney International (Nancy-Bird Walton) Airport at the intersection of Badgerys Creek Road and The Northern Road (see **Figure 1** below).

The Sydney Metro Western Sydney Airport line runs through the site, providing connections from the key centre of St Marys through to stations at Orchard Hills, Luddenham, Airport Business Park, Airport Terminal and the Aerotropolis which is located within the site.

The site is surrounded by several key roads and infrastructure corridors including Bringelly Road, Badgerys Creek Road, Elizabeth Drive, M12 and The Northern Road.

Figure 1 - Strategic Context



Set on natural waterways, Bradfield City Centre presents a rare opportunity to showcase the best urban design and to create a thriving, blue and green, connected City in which Australians will want to live, learn and work. The Bradfield City Centre will be a beautiful and sustainable 22nd Century City. It will foster the innovation, industry and technology needed to sustain the broader Aerotropolis and fast track economic prosperity across the Western Parkland City.

2.2 The Master Plan Site

The street address for Bradfield City Centre is 215 Badgerys Creek Road, Bradfield (the Site) within the Liverpool Council Local Government Area (LGA). The site is legally described as Lot 3101 DP 1282964 and has an area of 114.6 hectares, with road access to Badgerys Creek Road located at the north-western corner. The site spans across the Aerotropolis Core and Wianamatta-South Creek Precinct, within Western Sydney Aerotropolis. The Site is outlined in **Figure 2** below.

The Site is predominantly zoned Mixed Use under the Western Parkland City SEPP, with a small portion of Enterprise zoned land located on the north-western corner of the site. The site also includes Environment and Recreation zoned land mostly along Thompsons Creek.

Figure 2 - Master Plan Site



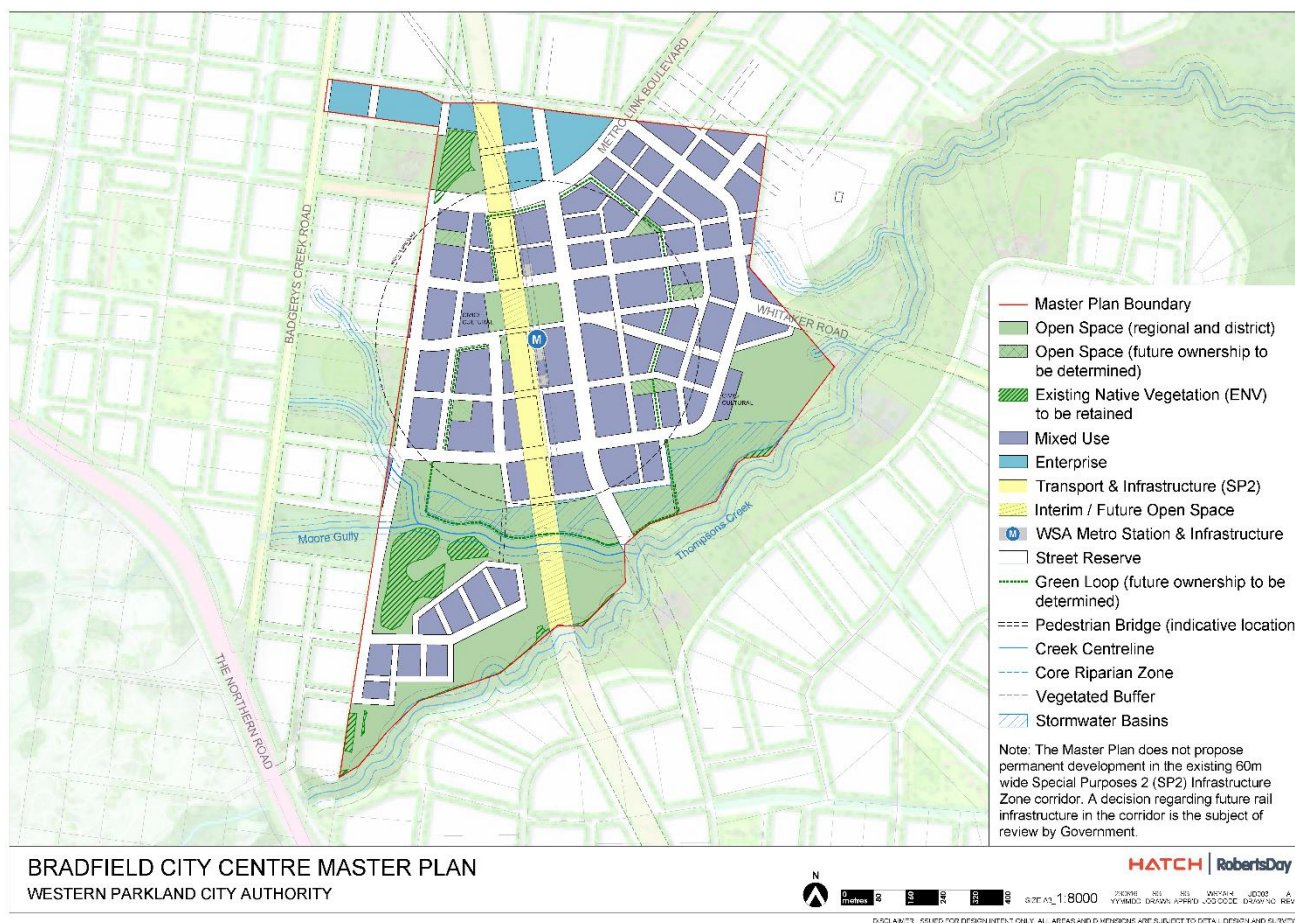
2.3 The Bradfield City Centre Master Plan

The Western Parkland City Authority has prepared a Master Plan (**Figure 3** below) in accordance with the DPE Master Plan Requirements.

The Master Plan sets out a framework for future development within the Bradfield City Centre which includes:

- Road network, key connectors to adjoining land and the regional road network (existing and future)
- Block structure
- Indicative open space network
- Sustainability strategy
- Social and infrastructure strategy
- Arts and culture strategy
- Infrastructure servicing strategy

Figure 3 – Bradfield City Centre Master Plan



2.4 The Proposal

The Bradfield City Centre Master Plan is intended to facilitate the growth of the centre over time. The Master Plan has established the following three planning horizons for technical assessments.

Table 1 - Planning & Development Horizons

Phase	Indicative Timeframe	Estimated employment	Estimated residential population	Estimated Gross Floor Area (cumulative)
Immediate	2026	1,000 - 1,200 jobs	0 residents	48,500sqm
Medium-term	2036	8,000 - 8,300 jobs	3,000 - 3,100 residents	341,000sqm
Long-term	2056	20,000 – 24,000 jobs	15,000 – 15,200 residents	1,258,000 sqm

Note: The table above is an estimate of the population and employment forecast used for the purposes of modelling only.

The master plan has the capacity to accommodate ~10,000 residential dwellings. In accordance with NSW Government policy a proportion of the residential dwellings will be affordable housing. The timing and delivery of residential dwellings will be subject to market demand and future master plan reviews that consider the impact of additional population on the scope and timing of social and physical infrastructure.

3 Baseline Investigations and Existing Conditions

With the Bradfield City Centre being a greenfield development, there are limited existing services throughout the site. This allows increased flexibility and opportunity to introduce infrastructure to support current and future smart city initiatives.

3.1 Technical Baseline Site Consideration

The Before You Dig Australia (formerly Dial Before You Dig (DBYD)) data shows that there are limited Telstra, Optus and NBN in-ground services documented through the Aerotropolis Core Precinct, with services running through the established roads; Badgerys Creek Rd, Derwent Rd, and Shannon Rd. According to the NBN rollout map, a fixed-line service is available in the local areas, and satellite service currently available for the Aerotropolis Core.

The Bradfield City Centre area currently has 4G coverage from all three mobile network operators (Telstra, Vodafone, and Optus). 5G cells are installed by Telstra in many surrounding areas (coverage being available in most of the north-eastern portion of the site, and by Optus along The Northern Road.

Telstra Enterprise also currently has in place Low Power Wide-Area Network (LPWAN) coverage for both Narrowband Internet of Things (NB-IoT) and Long-Term Evolution for Machines (LTE-M) connectivity across the Aerotropolis Core Precinct.

3.2 Area of Focus

As a greenfield development site, there is opportunity for the foundational Smart City infrastructure to be established as part of the Stage 1 of the Bradfield City Centre. In implementing the enabling infrastructure and first buildings in Bradfield, WPCA will focus on two key principles:

1. Planning for growth and changing technologies – “future-proofing” to the extent possible based on current knowledge and forecasts.
2. Enabling innovation and choice – investing where there are market failures or drivers to remove inhibitions to, and encourage, smart cities and broader technologies to flourish in Bradfield through private market provision of choice and quality.

4 Assessment Requirements and Policy Context

This report has been prepared to articulate the Smart Cities vision for Bradfield, by addressing the relevant Master Plan Requirements, Development Control Plan Requirements, and Local and State Government agency comments.

4.1 Master Plan Requirements

The DPE has issued Master Plan Requirements (MPRs) to the Authority for the preparation of a Master Plan for Bradfield City Centre. This report has been prepared to address the following MPRs.

Table 2 - Master Plan Requirements

Reference	Master Plan Requirement	Where addressed
Section 3. The draft Master Plan	Implementation of smart city, consistent with or superior to the Precinct Plan	Section 5 and 6.1

4.2 Agency and Council Comments

Table 3 - Agency and Council Comments

Reference	Agency and Council Comment	Where addressed
Sydney Metro	<p>Sustainability, CPTED and Visual Impacts</p> <p>In addition to the supporting technical studies noted in the master plan proposal, Sydney Metro requests that the following supporting studies be added to the master requirements:</p> <ul style="list-style-type: none"> - Smart Cities Strategy - to support WPCA's vision to be a leading high-tech 22nd century city within the Indo-Pacific region. 	Section 6

4.3 Development Control Plan Requirements

The below table reflects a summary of the key performance outcomes that will be addressed in the masterplan.

Table 4 - Policy Requirements

Reference	Development Control Plan Requirement	Where Addressed
6. Access & Movement Framework		
P02	Streets are planned to adapt to changing travel modes and parking areas include innovative and new technologies	Refer to Section 6.3.1
7.3 Parking Design & Access		
P013	Electric vehicle parking and charging stations are to be integrated into car park design on the development site.	
P015	Smart technology to be incorporated in large car parks (over 100 spaces) to improve functionality.	Refer to Section 6.3.2
P017	Provision is made for electric bicycle charging.	
8.3 Design for Safe Places		
P03	Car parking areas, pathways and other elements of transport network infrastructure are in accordance with Crime Prevention Through Environmental Design (CPTED) principles to enhance public safety by discouraging crime and anti-social behaviour.	Refer to Section 6.3.3
12.2 Telecommunications Facilities		
P01	Co-location of telecommunication facilities to minimise the number of facilities required.	
RP02	Telecommunication facilities do not have adverse impacts upon the natural environment.	
P03	Telecommunication facilities are designed to ensure human health and safety, including health risks associated with the emission of electro-magnetic radiation.	Refer to Section 6.3.4
P04	Visual impact on the public domain is minimised	
P05	Landscaping is used to screen the facility from the public domain	

Reference	Development Control Plan Requirement	Where Addressed
	16. Smart Places	
P01	Incorporate multi-function poles (also known as Smart Poles) which accommodate several functions and services on the same pole, thereby reducing the total number of poles on the street to improve amenity and reduce street clutter.	
P02	Buildings utilise smart technologies to promote performance, sustainability, resilience and resource management throughout their operational lives.	
P03	Establish a comprehensive network of monitoring sensors to aid in the understanding and visualization of the health, efficiency, safety, and wellbeing of the community, and natural and built environments.	Refer to Section 6.3.5
P04	Enhance experiences in the public domain and create liveable public open spaces by embedding smart technologies.	
P05	Establish collaboration between operators, local authorities and governments to share readily accessible information about street furniture, existing fixed telecommunications infrastructure and access to power	

4.4 Other Considerations

Policy, legislation and standards relating to smart cities and adjacent specialty areas are currently in rapid evolution. This Smart Cities Implementation Plan will be iterated and supplemented with additional place-specific analysis for Bradfield, which will be informed by ongoing review of, and alignment with, existing and forthcoming international and Australian standards, and existing and forthcoming Commonwealth Government and NSW Government policy.

In developing this initial draft, WPCA has considered infrastructure, transport, smart cities, IoT and data governance long-term planning and policy at Commonwealth and NSW levels. WPCA itself is subject to the below related policies for any ongoing asset or service management for which it will be the asset owner or service provider.

- NSW Government *Internet of Things (IoT) Policy*
- Digital NSW *Designing our Digital Future*
- NSW Government *Cyber Security Policy*
- NSW Government *Open Data Policy*
- NSW Government *Artificial Intelligence Assurance Framework*
- NSW Government *ICT Assurance Framework*, and *Infrastructure Investment Assurance Framework*
- NSW *Privacy and Personal Information Protection Act*, and *Health Records and Information Privacy Act*
- Australian Government *Code of Practice: Securing the Internet of Things for Consumers*.

5 Smart City Technical Framework

In planning for delivering Stage 1 of the Bradfield City Centre, WPCA has identified three key focus areas to enable the vision of a future smart and connected city.

5.1 Enabling Connectivity Choice and Change

WPCA will plan the enabling infrastructure of Bradfield to encourage high-quality connectivity services and a variety of choices for consumers.

Time horizon	WPCA initiatives being considered (subject to cost/benefit, commercials, and other analysis)	Smart cities outcomes we envision will be catalysed (delivered by private sector, local council, other agencies)
By 2026	<ul style="list-style-type: none"> Maximum high-capacity communications conduit possible to fit in the roadside utilities throughout the Phase 1 area. Multi-function poles (aka smart poles) capable of hosting mobile and LPWAN network infrastructure, in place of standard light poles. Centralised communications centre for “centralised RAN” mobile network edge processing. Encouragement of mobile network operators to locate (and ideally collocate) on multi-function poles and centralise their edge processing. 	<ul style="list-style-type: none"> Multiple private market providers of 4G and 5G mobile connectivity will provide high-quality, competitive connectivity choice and ubiquitous coverage across Bradfield (i.e., no black spots). Mobile network operators will collocate on multi-function poles, which will house much of their radio access network equipment and minimise the number of poles required in Bradfield. Mobile network operators will move edge processing that typically requires roadside and pole-adjacent cabinetry, to a centralised communications centre, reducing clutter and improving amenity Digital sensor networks, centralised real-time decision data and SCADA/SCATS systems will be used to manage traffic flows and facilitate physical accessibility. Smart infrastructure and services, automation, connected vehicles and emerging innovation are unhindered by connectivity challenges.

Time horizon	WPCA initiatives being considered (subject to cost/benefit, commercials, and other analysis)	Smart cities outcomes we envision will be catalysed (delivered by private sector, local council, other agencies)
By 2036	<ul style="list-style-type: none"> Second communications centre to provide for demand growth, and redundancy in the event of disruption. 	<ul style="list-style-type: none"> Multiple private market providers of fibre connectivity will provide high-quality, competitive connectivity choice and connect Bradfield to world-class data centres. Multiple private market providers of LPWAN connectivity will provide high-quality, competitive connectivity choice. Smart infrastructure and services, automation, connected vehicles and emerging innovation flourish in Bradfield.
By 2056	<ul style="list-style-type: none"> Regular horizon-scanning to accommodate emerging connectivity and technologies as Bradfield evolves. 	<ul style="list-style-type: none"> Maintaining a superior precinct value proposition for connectivity choice and quality.

5.2 Harnessing Data Effectively and Responsibly

WPCA will plan to complement existing data management legislation, policy and best practice with cutting-edge data analytics and insights to maximise data availability, integration and usability, while embedding security-by-design, privacy-by-design and ethical data practice to protect community data and foster trust in a highly digitised city.

Time horizon	WPCA initiative being considered (subject to cost/benefit, commercials and other analysis)	Smart cities outcomes we envision will be catalysed (delivered by private sector, local council, other agencies)
By 2026	<ul style="list-style-type: none"> Data governance measures developed and applied as extensively as possible and as appropriate, enshrining privacy, cybersecurity, e-safety, ethical use of AI, accessibility and other core principles in WPCA technologies and systems (and broader technologies and systems where possible). Data sharing opportunities developed and applied as extensively as possible and as appropriate, maximising open data availability, interoperability, open-source, standardisation and other core principles in WPCA data sets (and broader data sets where possible). 	<ul style="list-style-type: none"> The local community has high confidence and trust in the digital and data-collection functions of the city. Data compromise risk is minimised, and cyber resilience is planned for. Bradfield is an exemplar of balancing rich data assets with a relentless pursuit of responsible, transparent and trustworthy data management. Researchers, innovators and interested public will have access to rich and integrated datasets about Bradfield and will be able to leverage insights from that data, contribute to building out datasets, and participate in its governance for public transparency and accountability. Data sharing will be unhindered by proprietary technology / system / format barriers.
By 2036	<ul style="list-style-type: none"> Collaborative resilience planning and data sharing explored and trialled. 	<ul style="list-style-type: none"> Daily city life is less disrupted, and for less time, by critical events (e.g., cyber-attacks natural disasters).
By 2056	<ul style="list-style-type: none"> Regular horizon-scanning to accommodate emerging challenges and opportunities as technologies and best practice evolve. 	<ul style="list-style-type: none"> Continuing to fully leverage the benefits of a digital-by-design city with rich longitudinal datasets while maintaining community trust and data integrity and managing risk.

5.3 Embedding Technology for Better City Function

WPCA will plan the development of Bradfield to encourage and employ digitally enabled technologies where they offer better efficiency, effectiveness, visibility, and decision-making.

Time horizon	WPCA initiative being considered (subject to cost/benefit, commercials and other analysis)	Smart cities outcomes we envision will be catalysed (delivered by private sector, local council, other agencies)
By 2026	<ul style="list-style-type: none"> Fleet of sensors / digitally enabled technologies providing rich data to inform and enable Bradfield's environmental and sustainability ambitions. Buildings embedded with digital technologies including Building Information Management systems where appropriate. Events and public spaces leveraging smart technology to amplify user experience, engagement, accessibility and safety. Utilities and essential city services employing smart metering, sensors and other digital technologies to provide rich, accurate, timely and actionable data. 	<ul style="list-style-type: none"> Digital sensor networks, centralised real-time decision data and SCADA/SCATS systems will be used to manage traffic flows and facilitate physical accessibility. Smart infrastructure and services, automation, connected vehicles and emerging innovation are unhindered by connectivity challenges. The public in Bradfield will have easy and timely access to important, useful, actionable and behaviour-influencing information about the city's sustainability and environmental performance, such as temperatures across the city, air quality, and water and power usage. Facility managers will provide proactive and responsive maintenance and services to facility users which will cost less, be more efficient and provide a better user experience. Researchers, innovators and interested public will have access to rich datasets about Bradfield, generating organic insights, innovation and engagement. Events and public spaces will be well-patronised by diverse community groups who feel accommodated and welcomed.
By 2036	<ul style="list-style-type: none"> Nation-leading conditions for appropriate technological innovations to be trialled and fostered in Bradfield. 	<ul style="list-style-type: none"> New technologies and new applications of technology are visible and part of the experience of Bradfield City Centre, leading the local community to be open to early adoption, improving digital literacy and fostering a pipeline of tech-native creative thinkers.
By 2056	<ul style="list-style-type: none"> Regular horizon-scanning to accommodate emerging challenges and opportunities 	<ul style="list-style-type: none"> Continuing to set and meet ambitious targets for environmental and sustainability outcomes in Bradfield.

Time horizon	WPCA initiative being considered (subject to cost/benefit, commercials and other analysis)	Smart cities outcomes we envision will be catalysed (delivered by private sector, local council, other agencies)
	as Bradfield and its environs evolve.	<ul style="list-style-type: none"> • Maintaining excellent city resilience as a point of difference. • Maintaining a superior city experience for residents, workers, businesses and visitors through efficiency, effectiveness and innovation in asset management, service delivery and place-making.

6 Smart City Technical Assessment

6.1 Master Plan Requirements

The Department of Planning and Environment has issued Master Plan Requirements to the Authority for the preparation of a Master Plan for Bradfield City Centre.

Master Plan Requirement 3:

“Implementation of smart city, sustainability – including consideration on how Bradfield may contribute the State goal of net-zero emissions by 2050, water sensitive urban design and urban heat island principles consistent with or superior to, the Precinct Plan”.

- WPCA has addressed specifically the “implementation of a smart city” requirement by preparing this Smart City Implementation Plan report.
- The sustainability elements of Requirement 3 are addressed in a separate supplementary report: Bradfield City Centre – Sustainability Infrastructure Report – Flux Nov 2022.

6.2 Agency and Council Comments

Only one comment was received relating to smart cities.

Sydney Metro comment on Sustainability, CPTED and Visual Impacts:

“In addition to the supporting technical studies noted in the master plan proposal, Sydney Metro requests that the following supporting studies be added to the master requirements:

- Smart Cities Strategy, to support WPCA’s vision to be a leading high-tech 22nd-century city within the Indo-Pacific region.”

- WPCA has addressed this comment by preparing this Smart City Implementation Plan report.

6.3 Development Control Plan Requirements

AECOM has identified 15 Development Control Plan requirements relevant to smart cities. These are grouped below by the five corresponding chapters of the requirements document.

6.3.1 DCP Section 2.14 Design for Safe Places

DCP Section 2.14 Requirement P03

Car parking areas, pathways and other elements of transport network infrastructure are in accordance with Crime Prevention Through Environmental Design (CPTED) principles to enhance public safety by discouraging crime and anti-social behaviour.

- While CPTED principles do not require specific technologies, the planned connectivity in Bradfield City Centre will support smart technology use to achieve CPTED principles where desired.

6.3.2 DCP Section 2.13 Smart Places

DCP Section 2.13 Requirement P01

Implement multi-function poles (Smart Poles) where street poles are required that accommodate multiple functions.

- Location of telecommunications equipment and facilities will ultimately be the responsibility of one or more communications providers, which have significant powers under Commonwealth telecommunications legislation.
- WPCA will consider provision of multi-function poles and appropriate footings for future multi-function pole installation, as one way of encouraging collocation of telecommunications network equipment and minimising the number and footprint of structures.

DCP Section 2.13 Requirement P02

“Pit and pipe infrastructure support future requirements to service smart city infrastructure.”

- WPCA – as master developer – will facilitate the digital enablement of Bradfield City Centre through providing extensive pit and pipe infrastructure.
- Specific Smart Cities solutions will be developed in coordination with users and maintenance bodies of the public domain.

DCP Section 2.13 Requirement P03

“Buildings utilise smart technologies to promote performance, sustainability, resilience and resource management throughout their operational lives.”

- WPCA – as master developer – intends to build an environment that catalyses the uptake of smart building technologies that promote better performance on sustainability, resilience, and resource management. In terms of the public realm this may include:
 - Smart water meters and fittings to minimise water consumption.
 - Install smart energy solutions to increase self-sustainability and reduce reliance on the main energy grid.

DCP Section 2.13 Requirement P04

“Embedding smart technologies enhances experiences in the public domain and creates liveable public open spaces.”

- In consultation with local Councils or ultimate asset owners – WPCA intends to foster an ambition to activate the public realm and create highly liveable spaces in Bradfield. The intent is to identify appropriate locations for initiatives, which could include:
 - Dedicated internet/fibre connection points
 - Smart lighting where key locations may be used at night-time for active uses, complying with relevant CPTED controls
 - Smart bins with capacity rubbish bin sensors to improve pick-ups and alert to real-time capacity
 - Weather monitoring network/devices to monitor temperature and weather within the park and have this accessible to the public.

6.3.3 DCP Section 2.7 Design and Access

DCP Section 2.7 Requirement P011

Smart technology to be incorporated in large car parks (over 100 spaces) to improve functionality.

- WPCA will work with providers of public parking (Liverpool City Council, TfNSW and Sydney Metro) to facilitate integration into wider precinct connectivity.
- Where smart technology is provided, spatial allocation will be made as part of streetscapes as defined in the Masterplan.

6.3.4 DCP Section 4.3.1 Car Parking

DCP Section 4.3.1 Requirement P03

Electric vehicle parking and charging stations are to be integrated into car park design on the development site.

- WPCA will work with providers of public parking (Liverpool City Council, TfNSW and Sydney Metro) to facilitate provision of electric vehicle parking and charging.
- WPCA will consider specifying this requirement in development contracts that include private parking.

6.3.5 DCP Section 4.3.2 Bicycle Parking

DCP Section 4.3.2 Requirement P03

Provision is made for electric bicycle charging.

- Electric bicycle charging will be accommodated within Bradfield Streetscapes at key end- and start-of-trip nodes. These will be integrated within the proposed streetscapes, and provision made within electrical reticulation network to service electric charging demand.

6.3.6 DCP Section 6.5 Telecommunications Facilities

DCP Section 6.5 Requirement PO1

Co-location of telecommunications facilities to minimise the number of facilities required.

- Location of telecommunications equipment and facilities will ultimately be the responsibility of one or more communications providers, which have significant powers under Commonwealth telecommunications legislation.
- WPCA will consider provision of communications centres, multi-function poles and appropriate footings for future multi-function pole installation, as initial means of encouraging collocation of telecommunications network equipment and edge processing and minimising the number and footprint of structures.

DCP Section 6.5 Requirement PO2

Telecommunication facilities do not have adverse impacts on the environment.

- Design of telecommunications facilities will ultimately be the responsibility of one or more communications providers. WPCA as master developer will work with these providers to ensure the facility is not located on Environmentally Significant Land or on land below the PMF level.

DCP Section 6.5 Requirement PO3

“Telecommunication facilities are designed to ensure human health and safety, including health risks associated with the emission of electro-magnetic radiation.”

- Design of telecommunications facilities will ultimately be the responsibility of one or more communications providers. WPCA as master developer will engage with these providers as early as possible to evaluate any potential impacts and develop the masterplan to eliminate risks to future resident and owners. This will include providing a minimum 300m separation from any residential area or other sensitive use.

DCP Section 6.5 Requirement PO4

Visual impact on the public domain is minimised.

- As master developer WPCA will work with telecommunications providers to ensure facilities can be located so they do not detract from:
 - The heritage significance or settings of a heritage item or potential archaeological site;
 - The amenity of open spaces; and
 - Key regional and district views and vistas.

DCP Section 6.5 Requirement PO5

Landscaping is used to screen the facility from the public domain.

- Locations of telecommunications facilities will be coordinated with the wider landscape masterplan to minimise its intrusion into open space and public amenity.
- Where necessary WPCA may work with telecommunication providers to provide additional landscaping where existing vegetation does not adequately screen the facility.

7 Conclusion

This report has been prepared to articulate the Smart Cities vision for Bradfield, by addressing the relevant Master Plan Requirements, Development Control Plan Requirements, and Local and State Government agency comments.

The Smart Cities Technical Framework identifies three key focus areas to enable the vision of a future smart and connected city and sets out short-, medium- and long-term strategies that ensure future uses and public domain areas comply with the relevant planning framework. Additionally, this report identifies longer term strategies that ensure the continued target of a highly connected 22nd century city is achieved.

Section 5 outlines different initiatives being considered by WPCA to ensure the public realm serves as a catalyst for interconnectedness of the subsequent private owners. Long Term Strategies should be reviewed continually in the context of both the current and futures intended site use.

Western Parkland City Authority

T: 1800 312 999
E: hello@wpca.sydney
W: wpca.sydney
