Transport for NSW

# DCP Guidelines for Smart Places

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# Generic Development Control Plan Guidelines

This document is intended to guide planners and place owners to integrate smart places principles in Development Control Plans or other relevant planning instruments. This guide is based on the Western Sydney Aerotropolis Development Control Plan 2021.

## Smart Places Design

Smart Places use technology-enabled solutions to improve the quality of life for citizens and business, while actively responding to the problems and opportunities that matter most to the people living and working in these places. The scale of initiatives can vary greatly, however, common to all solutions is their use of embedded, connected and interoperable technology tools and platforms, taking advantage of smart devices that work together across different infrastructure assets (including from planning through to delivery and operation), services and sectors.

Objectives

1. Support <insert place name> as a connected, open data digital city and global innovation hub to improve life for individual citizens, future populations, businesses, and communities, in line with the NSW Smart Places Strategy and <insert other relevant strategies>.
2. Embrace innovative development by installing new and emerging technologies and utility provision.
3. Design smart streets capable of collecting data and conveying insights in real time to inform citizens.
4. Support a resilient and sustainable region that uses technology to manage natural resources efficiently and is focused on environmental, air and water quality.
5. Provide the utilities necessary to support community events and activities.
6. Build on initiatives over time in line with the Australian Digital Inclusion Index.

# Performance Outcomes and Benchmark Solutions

| Objective | Performance Outcome | Benchmark Solution |
|---|---|---|
| 1 | Multi-function poles (also known as Smart Poles) accommodate several functions and services on the same pole. This reduces the total number of poles on the street, improving amenity and reducing street clutter. | Implement multi-function poles where street poles are required.<br><br>Potential services which could be incorporated into multifunction poles include:<br>a) RMS signals and signage<br>b) street lighting<br>c) telecommunications (such as mobile cellular network providers)<br>d) local government's digital infrastructure requirements (such as CCTV, signage or lighting)<br>e) IoT sensors, devices and connectivity networks, with flexibility to enhance these in the future<br>f) digital wayfinding and signage.<br><br>Meet the following design requirements:<br>a) locating MFPs a minimum of 600mm from the face of kerb<br>b) avoiding impacts on existing and future mature street tree canopies<br>c) co-locating with other street furniture<br>d) provisioning pit and conduit to each pole to enable the future upgrading to smart lighting and the installation of smart meters to local government specification at each new lot<br>e) provisioning each MFP with two telecommunication conduits and two electrical conduits. |
| 2 | Pit and pipe infrastructure support future requirements to service smart city infrastructure | Where developments are providing pit and pipe infrastructure, specifications in the **Digital Infrastructure Technical Report** are met to accommodate future smart city infrastructure. |
| 3 | Buildings utilise smart technologies to promote performance, sustainability, resilience, and resource management throughout their operational lives. | 1. Where new connections to the water and recycled network are proposed, include smart water meters and fittings to minimise water consumption.<br>2. Use smart technologies to monitor |

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| | | and self-regulate building environment and operations (e.g. lighting, heat, ventilation, and air conditioning).<br>3. Install smart energy solutions to increase self-sustainability and reduce reliance on the main energy grid.<br>4. Demonstrate alignment to relevant NSW policy, including but not limited to the NSW Internet of Things (IoT) policy, NSW Cyber Security Policy and NSW Smart Infrastructure Policy |
| 4 | Embedding smart technologies enhances experiences in the public domain and creates liveable public open spaces. | 1. Install smart monitoring equipment, including equipment for water quality, ambient temperature, tree canopy cover and soil moisture content, cycle, and car movements. Specific monitoring requirements for each development are provided by the consent authority.<br>2. Place owners are encouraged to start the design of a smart place with the place outcomes that are desired and may include supporting:<br>a) Innovation hubs with faster broadband internet.<br>b) Resilient and sustainable places that use technology to manage natural resources.<br>c) Safer community events and activities.<br>d) Equal access to digital services.<br>The following smart solutions meet Local Government's system interoperability and data source requirements and are installed in key locations such as open space and public domain areas:<br>a. dedicated internet/fibre connection points<br>b. public Wi-Fi network that provides sufficient coverage to the whole public space<br>c. smart lighting where key locations may be used at night-time for active uses, ensuring lighting is adequate for active and passive uses<br>d. security cameras at key locations to ensure coverage within the public space<br>e. 'smart bins' with capacity rubbish bin sensors<br>f. 'smart park furniture' with USB-charging capacity and potentially Wi- |

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| | | Fi connectivity<br>g. digital display screen, linked to a Local Government accessible network to share key community information, data, and activities<br>h. weather monitoring network/devices to monitor temperature and weather within the park and have this accessible to the public<br>i. wireless connectivity (e.g. Bluetooth) with free access within the community's parks, particularly in proximity to the basketball court/youth spaces. |

# Associated Smart Place Outcomes

In addition to the smart places principles above, consideration can also be given to services and utilities and telecommunication facilities. Below are examples that can be used to guide the place owners in incorporating these outcomes into their DCP

## Services and Utilities

This Chapter focuses on utilities and services required for accommodating growth and investment, and includes infrastructure relating to:

- utility services and infrastructure (internet, pipelines, easements and telecommunication)
- telecommunication facilities.

## Services and Utilities Design Objectives

- Ensure the construction of utility services/infrastructure provision occurs in a logical and staged manner, and in sequence with development.
- Encourage innovative and sustainable utility and servicing across <insert place name> to promote effective and efficient delivery of services. Ensure utilities designs and locations consider space for alternative future services.
- Design and provide utility infrastructure to integrate and not negatively impact on the use of the public realm, the liveability and the environment.

*Note: This section does not preclude private sector utility services solutions.*

# Performance Outcomes and Benchmark Solutions

| # | Performance Outcome | Benchmark Solution |
|---|---|---|
| 1 | Services and utilities (hydrants, NBN boxes etc) are designed and located to are integrated within the building context and public realm. | 1. Infrastructure is designed and located to:<br>a. integrate with public domain and building design<br>b. not be visible from the public domain<br>c. make a positive contribution to the public domain<br>d. utilise landscaping to screen where required<br><br>2. All existing and additional utility infrastructure must be identified at the site planning stage.<br><br>New streets are to integrate utilities underground within the street reservation, with services located underground and in a manner that facilitates tree planting and consistent. Where services must be located on a street, they do not dominate the pedestrian experience and are designed as an integrated component of the façade. |
| 2 | Infrastructure is adequately protected from development. | 1. Development near a utility service must be in accordance with the relevant service authority's guidelines and requirements.<br>2. Development near utility services:<br>a. does not adversely affect the function of the service<br>b. does not place an additional structural load on the service<br>c. protects the infrastructure from physical damage<br>d. allows ongoing necessary access for<br>e. maintenance purposes<br>3. Infrastructure is designed to achieve minimum cover and clearance requirements to other services and infrastructure, such as planting, and WSUD features.<br><br>Infrastructure is located to take into account any future road widening to minimise relocation of assets in the future. |

| # | Performance Outcome | Benchmark Solution |
|---|---|---|
| 3 | Use shared utility trenches to combine multiple utilities within a compact area of the street verge, and future proof service location within road cross-sections. | 1. Avoid placement of services within the road carriageway Ensure sufficient width in the utility corridor<br>2. Avoid disruptive works across/ under existing carriageways<br>Adopt a 'dig once' policy where spare conduits and road crossings are installed in strategic locations to avoid ripping up the road in the future |
| 5 | Infrastructure allows for colocation of similar users. | Allow for the installation of the following within the utility corridor:<br>a. recycled water 'purple pipes'<br>b. vacuum waste collection system<br>c. hydrogen district cooling/heating systems<br>d. micro-grids for energy sharing |
| 6 | Provide fast, reliable and highspeed fixed and wireless internet connectivity in line with best practice guidance for planned land use. | 1. All new lots are to have telecommunications access.<br>2. Demonstrate access to the NBN. Where coverage at time of lot registration is not or will not be above minimum network connectivity speeds, demonstrate how and where allowances for future network augmentation have been made. |

# Telecommunication Facilities

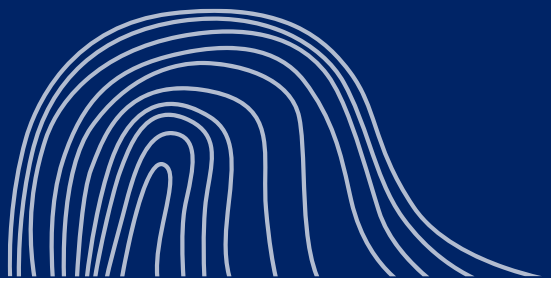
## Objectives

- To minimise impacts of telecommunication facilities on development of the environment, surrounding properties, workers, residents and future character of the precinct.

## Performance Outcomes & Benchmark Solutions

| # | Performance Outcome | Benchmark Solution |
|---|---|---|
| 1 | Promote co-location of telecommunication facilities to minimise the number of facilities required. | The siting and design of a facility is to consider the existing and future potential for co-location of telecommunications facilities. |
| 2 | Telecommunication facilities do not have adverse impacts upon the natural environment. | The facility is not located on Environmentally Significant Land or on land below the PMF level. |
| 3 | Telecommunication facilities are designed to ensure human health and safety, including health risks associated with the emission of electro-magnetic radiation. | 1. Consult with the local community and ensure compliance with NSW Government Department of Planning Telecommunications Facilities guideline including Broadband (July 2010) or any further updates.<br>2. A minimum 300m separation from any residential area or other sensitive use is to be provided. The level of electro-magnetic radiation emitted from any Telecommunications Facility is not to exceed the limit of 0.2uW/cm2.<br>3. A telecommunication facility is to warn and display information signs to minimise public risk.<br>4. The facility is to be enclosed with a minimum 1.8m open mesh (or similar) to prevent public access to the site |

| # | Performance Outcome | Benchmark Solution |
|---|---|---|
| 4 | Development is designed to minimise the visual impact of the infrastructure on the public domain. | 1. The facility is not to be located where it will detract from:<br>a. The heritage significance or settings of a heritage item or potential archaeological site<br>b. The amenity of open spaces<br>c. Key regional and district views and vistas<br>2. Facilities are to be of a 'slim line monopole' construction.<br>3. The facility is not to include advertising signs, including logos.<br>4. Facility is not to contain night illumination (except where a proposed Telecommunications Facility infringes the Obstacle Limitation Surface (OLS) for aircraft safety). |
| 5 | Landscaping is used to screen the facility from the public domain. | 1. The facility is to be located where the vegetation, landform or features of an open space location will best screen or reduce its visual impact.<br>2. Additional landscaping is provided where existing vegetation will not adequately screen the facility.<br>3. Sufficient distance is to be provided between the facility and existing and additional trees.<br>4. Garden beds can be used to hide pit infrastructure, which can be re planted when work is required. |





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