



ACT
Government

OFF STREET PARKING

MUNICIPAL
INFRASTRUCTURE
STANDARDS 11

Transport Canberra and
City Services

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1/1	N/A	Acknowledgement of Country added		
	1.1.1.1	Reference to Aboriginal culture added		
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ACKNOWLEDGEMENT OF COUNTRY

Transport Canberra and City Services (TCCS) acknowledge that Aboriginal people are the Traditional Owners of Australia. We acknowledge and pay respect to the Ngunnawal peoples as the custodians of the land and waters that we live and thrive on today here in the ACT.

TCCS acknowledges that Canberra’s cultural and natural heritage was maintained by the Ngunnawal people for many generations before colonial settlement on Australian soil. Aboriginal people’s management of the land preserved the natural balance of local plants and animals. This knowledge of the environment in which we live is critical to the protection and restoration of our land today.

It is our responsibility to preserve and encourage Ngunnawal, Aboriginal and Torres Strait Islander cultural integrity. When using this document, consider opportunities to incorporate Ngunnawal, Aboriginal and Torres Strait Islander culture into off street parking designs.



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1 OFFSTREET PARKING

1.1 General

1.1.1 Responsibilities

1.1.1.1 General

General: Provide design and documentation for off street parking areas owned by the ACT Government and maintained by TCCS or areas that will be transferred to the ACT Government for ownership and maintenance. Off street parking would typically service the following public realm areas:

- > Ngunnawal and Aboriginal culture.
- > Neighbourhood ovals and parks.
- > District parks, nature reserve parks, dog parks, recreation and open space areas.
- > Sportsgrounds.
- > Neighbourhood shopping centres.
- > Health and community centres.
- > Group and Town centres.
- > The city centre.
- > Park and ride or Bike and ride facilities.
- > Trailer un-coupling locations.

Off street parking not owned by the ACT Government: These parking areas and accesses shall be designed to *AS 2890*, *AS 1742*, *NCC* and the relevant codes within the *Territory Plan*. This Design Standard may be used as a guideline.

On-street parking: To *MIS 01 Street planning and design*. On-street parking is not within the scope of this Design Standard and shall be designed to the appropriate *Australian Standard*, *Austrroads* and the relevant codes within the *Territory Plan* unless otherwise directed by TCCS.

1.1.1.2 Objectives

Scope: The design shall provide for the number of parking spaces required for the development or facility, be landscaped to an appropriate level to provide shade and screening for vehicles, provide a safe environment for users and meet the requirements of this Design Standard and the relevant standards, codes and guidelines.

Objectives: Provide designs for parking area location and layout, including the following:

- > Convenient and safe access for pedestrians, vehicles and cyclists.
- > Parking for all users as appropriate to the location, including consideration for anticipated forms of transport (including motorbikes, bicycles, scooters), parking duration and vulnerable user groups.
- > Consideration for segregation of loading and delivery functions from parking areas.
- > Disabled parking and conformance to the *Disability Discrimination Act*.
- > An appropriate response to the following:
 - climate: reduce heat banks by maximising shading;
 - the geology and topography; and
 - the existing built fabric, heritage and cultural context of the area.

- > Appropriate pavement and surfacing materials, types, layer thicknesses and configurations to minimise whole of life costs.
- > Shading to reduce evaporative emission levels of parked cars, lessen the urban heat island effect and improve protection of street furniture.
- > Signage to *MIS 12 Guide signs* and line marking to *MIS 13 Traffic Control Devices*.
- > Water sensitive urban design including landscaping, stormwater detention and reuse to *MIS 08 Stormwater*.
- > Stormwater drainage infrastructure to provide major and minor stormwater flow management to *MIS 08 Stormwater*.
- > Phasing of construction to suit access and service provision.
- > Consideration for safety in design, operation and demolition.
- > Street lighting to *MIS 14 Public lighting*.
- > Consideration for maintenance functions.

1.1.1.3 Precedence

Where any document, except legislation or the *Territory Plan* issued in conjunction with this Design Standard, includes technical requirements that conflict with this Design Standard the requirements of this Design Standard take precedence.

1.1.2 Cross references

1.1.2.1 Commonwealth Legislation

The following Commonwealth Legislation is relevant to this Standard:

Australian Capital Territory (Planning and Land Management) Act

Disability Discrimination Act

Environment Protection and Biodiversity Conservation Act

National Capital Plan

1.1.2.2 ACT Legislation

The following ACT Legislation is relevant to this Standard:

Environment Protection Act

Heritage Act

Legislation Act

Planning and Development Act

Planning and Development Regulation

Public Roads Act

Public Unleased Land Act

Road Transport (General) Act

Road Transport (Safety and Traffic Management) Act

Road Transport (Mass, Dimensions and Loading) Act

Road Transport (Safety and Traffic Management) Regulation

Territory Plan and related Codes

Parking and Vehicular Access General Code

Bicycle Parking General Code

Access and Mobility General Code

Crime Prevention through Environmental Design General Code

Waterways: Water Sensitive Urban Design General Code

Work Health and Safety Act

1.1.2.3 ACT Government Strategic Documents

The following strategic documents prepared by various Directorates of the ACT Government are relevant to this Standard:

The ACT Planning Strategy – Planning for a sustainable city

AP2 - A new climate change strategy and action plan for the ACT

The City Plan 2014

Canberra Plan: Towards Our Second Century

Transport for Canberra: transport for a sustainable city 2012-2031

Towards Zero Growth – Healthy Weight Action Plan

Active 2020: A Strategic Plan for Sport and Active Recreation in the ACT & Region 2011-2020

1.1.2.4 Design Standards

This Design Standard references the following component standards:

MIS 01	Street Planning & Design
MIS 02	Earthworks and site grading
MIS 03	Pavement design
MIS 04	Subsurface drainage
MIS 05	Active travel facilities design
MIS 07	Driveways
MIS 08	Stormwater
MIS 10	Fences, guardrails and barriers
MIS 12	Guide signs
MIS 13	Traffic control devices
MIS 14	Public lighting
MIS 20	Street and park furniture
MIS 24	Soft landscape design
MIS 25	Plant species for urban landscape projects

1.1.2.5 TCCS Reference Documents

The following TCCS reference documents are related to this standard:

- Reference document 4 Protection of public landscape assets
- Reference document 6 Design Acceptance submissions
- Reference document 7 Operational acceptance submissions
- Reference document 8 WAE quality records
- Reference document 9 Final acceptance submissions
- Reference document 10 Landscape consolidation

1.1.3 Referenced documents

1.1.3.1 Standards

The following documents are incorporated into this Design Standard by reference:

Australian Standards

- AS 1158 Lighting for roads and public spaces
- AS 1428 Design for access and mobility
- AS 1428.1 Part 01: General requirements for access – New building work
- AS 1428.2 Part 02: Enhanced and additional requirements – Buildings and facilities
- AS 1428.4 Part 04: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators
- AS 1742 Manual of uniform traffic control devices
- AS 1742.11 Part 11: Parking controls
- AS 1798 Lighting poles and bracket arms-Preferred dimensions
- AS 2890 Parking facilities
- AS 2890.1 Part 01: Off street car parking
- AS 2890.2 Part 02: Off street commercial vehicle facilities
- AS 2890.3 Part 03: Bicycle parking facilities.
- AS 2890.6 Part 06: Off street parking for people with disabilities
- AS 4282 Control of the obtrusive effects of outdoor lighting
- AS 5100.2 Design loads

1.1.3.2 Other publications

- AGTM Austroads Guide to Traffic Management
- AGTM11 Part 11: Parking
- National Construction Code

1.1.4 Standards

1.1.4.1 General

Car park design: To AS 2890.1, 2890.2, 2890.3, 2890.6.

Proprietary products: To *TCCS Products previously considered for use list*

1.1.5 Interpretation

1.1.5.1 Abbreviations

General: For the purposes of this Design Standard the following abbreviations apply:

ACTPLA: ACT Planning and Land Authority.

AGTM: Austroads guide to traffic management.

DA: Development application.

DDA: Disability Discrimination Act.

JACS: Justice and Community Safety Directorate, ACT Government and its successors.

NCC: National Construction Code.

TCCS: Transport Canberra and City Services, ACT Government and its successors.

TCD: Traffic Control Device.

WSUD: Water sensitive urban design.

1.2 Pre-design planning

1.2.1 Consultation

1.2.1.1 TCCS and other Authorities

Requirements: Consult with TCCS and other relevant Authorities during the preparation of design. In addition to the requirements of this Design Standard, identify the specific design requirements of these authorities.

Loading zones: Segregation is required between parking areas and areas for loading and delivery functions. Access to a loading zone may be permissible through a public car park at TCCS' discretion. All reasonable alternatives shall be explored prior to seeking approval from TCCS for permission to access these areas through a public car park.

Access for parking inspectors: Consult with JACS to negotiate access arrangements. Note that endorsed TCD plans will be required; refer to *MIS 13 Traffic Control Devices*.

1.2.1.2 Utilities services plans

Existing site conditions: Obtain plans from all relevant utilities and other organisations whose services, trees, important ecological habitats or other assets exist within the area of the proposed development. Plot this information on the relevant drawings including the plan and cross-sectional views. As a minimum, designs should refer to 'Dial-before-you-dig' information that is readily available in most areas.

Responsibility: Confirm service plans accuracy with onsite inspection and also potholing if deemed necessary. Protect existing assets to the satisfaction of asset owners.

Proposed new services: Detail any new services proposed or relocated as part of the proposed works.

1.2.1.3 Safety in Design

Requirement: Implement safety in design processes in accordance with the *Work Health and Safety Act*. Include consideration for the following:

- > Traffic management including pedestrian and vulnerable road user movements.
- > Lighting design.
- > Identification and protection of existing services.
- > Operations such as access for parking inspectors.

1.2.1.4 Integrated design principles

Requirement: Integrate all design principles in the development of the car park to provide a balance between maximising amenity, safety and convenience.

Consider: Output from previous phases such as:

- > Transport Strategies (eg Transport for Canberra) to provide connections that improve the efficiency of the existing transport system (public transport, walking and cycling).
- > Urban Design and Land Use Masterplans to provide parking in line with land use and transport planning including improved parking supply for motorbikes, bicycles and scooters.
- > Deed of Agreement (if applicable) and the Notice of decision.
- > Estate development plans, Concept plans and Precinct codes.
- > Traffic modelling with a focus on managing existing demand and improving the efficiency of the existing transport system.
- > Any interface with adjacent areas and associated designs.

2 CARPARK DESIGN

2.1 Design Criteria

2.1.1 Layout

Design: To AS 2890.1 and AS 2890.2, including consideration for the following;

- > Sufficient space for the circulation and manoeuvring clearances of the swept paths of the design vehicle using industry recognised software.
- > Select appropriate dimensions to reflect the type of vehicles, duration of parking and anticipated user groups. Do not select minimum dimensions if possible.
- > Minimum horizontal clearances to columns or other above ground elements.
- > Minimum vertical clearances to soffit mounted services or other vertical obstructions.
- > Appropriate provisions for blind aisles.
- > Maximise shading to car parks through the location of tree plantings and protection of tree root zones.

Design Guidance: *AGTM11*.

Vehicle circulation: Minimise vehicle circulation.

One-way aisles: Where one-way aisles are required, consider 60° angle parking to enforce the direction of circulation. One-way aisles are considered to be a safer layout in high interaction areas.

Angle parking: Design for 60° angle parking in preference to 45° or 30°. Where space permits, 90° angle parking with two-way aisles will provide the most efficient layout.

Number of spaces: Conform to the requirements of *Parking and Vehicular Access General Code* and any requirements in the approved DA for the site.

2.1.2 Pedestrian access

Pedestrian access within car park: Consider the orientation of the aisle perpendicular to the building or facility entrance or other pedestrian destination to minimise pedestrian circulation.

Pedestrian access to surrounding areas: Provide appropriate edge treatments and crossing locations at all interfaces between parking areas and surrounding land uses.

2.1.3 Safety

Design: Conform to the requirements of the *Parking and Vehicular Access General Code* and *Crime Prevention through Environmental Design General Code*.

Requirement:

- > Provide clear sightlines into and through the car park.
- > Provide direct access routes via pedestrian paths to destinations and car park to *MIS 05 Active travel facilities design*.
- > Minimise pedestrian circulation in trafficable areas.
- > Provide lighting to *MIS 14 Public lighting* and *AS 1158*.
- > Minimise probability of vehicle/vehicle interaction and vehicle /pedestrian interaction.
- > Minimise aisle length to reduce the potential for vehicles to generate excessive speed.

- > Avoid wheel stops. Do not provide wheel stops in areas where lighting is poor or near pedestrian paths of travel.
- > Consider the direction of parking (e.g. rear in) where there is potential for interaction.
- > Allow for vehicle overhang and door opening adjacent to spaces. Provide wider paths in these locations as appropriate.

2.1.4 Stormwater drainage

Design: To *MIS 08 Stormwater*.

Requirement: Adopt WSUD strategies for onsite water detention and reuse. Include consideration for the following:

- > Avoid inlet structures or the potential for ponding within parking bays or on pedestrian paths.
- > Provide sufficient inlet structures to prevent concentrated overland flow paths in pedestrian areas.
- > Grade the surface to drain freely, including in front of wheel stops, if applicable.
- > Grade the surface to protect the surfacing material and prevent wash out areas.
- > Grade the surface to direct surface run-off water into tree planting root zones.

Pedestrian access: Where possible, orientate the car park to maximise WSUD opportunities. Prioritise the opportunity to reduce pedestrian circulation above WSUD outcomes in the event that these requirements conflict.

2.1.5 Pavement design

Design: Conform to *MIS 03 Pavement design*.

General: The pavement type selected will depend upon the car park location, usage and design life.

- > Sealed pavements such as asphalt or concrete shall be used in the urban environment.
- > Segmental paving may be used in the urban environment.
- > Two coat seal or Stabilised gravel surfaces with or without a primer seal coat may be used where directed or approved by TCCS.
- > Permeable pavements may be used as part of water sensitive urban design to reduce site runoff.

Requirement: For pervious pavements, carefully consider subsoil drainage and pavement structure to ensure required pavement life will be achieved.

2.1.6 Subsurface drainage

Design: Conform to *MIS 04 Subsurface drainage*.

2.1.7 Vehicle exclusion barriers

Design: Select an appropriate barrier such as bollards, log barriers, landscape treatments or kerb. Conform to *MIS 10 Fences, guardrails and barriers*.

Wheel stops: Permanently fixed wheel stops are only allowed under special conditions where no other treatment is applicable. Where approved for use, wheel stops need to be constructed as a permanent fixture built into the pavement with allowance for vehicle overhang. Wheel stops cannot be retro-fitted without replacing the pavement.

Wheel stop fixture: Arrangements which involve fixing of kerbs to the pavement by spikes will not be approved as considerable damage can occur to vehicles when the wheel stops become dislodged under the vehicle.

2.1.8 Signage and line marking

Design: Conform to *MIS 12 Guide signs* and *MIS 13 Traffic Control Devices*.

Requirement: Raised pavement markers pose a tripping hazard and shall not be used to delineate parking bays.

2.1.9 Driveways

Design: Conform to *MIS 07 Driveways*.

Requirement: Where gravel surfaces have been endorsed by TCCS or are located within a car park on a private lease, all driveways from the road to the property boundary shall be sealed.

2.1.10 Street lighting

Requirement: Provide street lighting where required by the Development Approval. Conform to the lighting category within the relevant codes in the *Territory Plan* as a minimum.

Minimum offset: Provide minimum 1m clear width from back of kerb.

Absolute minimum offset: TCCS will consider up to 0.6m clear width from back of kerb in specific circumstances. Where approved for use, bollards or equivalent forms of protection will be required.

General Codes: Conform to the following:

- > Minimum luminance: *Parking and vehicular access general code*.
- > Lighting categories: *Crime prevention through environmental design general code* and *Bicycle parking general code*.

Standard: To *AS 5100.2*, *AS 1158*, *AS 1798*, *AS 4282* and *MIS 14 Public lighting*.

Final design drawing: Show details of lighting poles and support details.

2.1.11 Car park furniture

Design Standard: To *MIS 20 Street and park furniture*.

Requirement: Locate car park furniture as required by the site, including consideration for the following:

- > Allow for vehicle overhang and door opening adjacent to spaces.
- > Pedestrian travel paths, queuing areas (for ticket machines) and accessibility.
- > Do not restrict site distances.

2.1.12 Disabled parking

Design: To *AS 2890.6*, *AS 1742* and *MIS 13 Traffic Control Devices*. Provide a bollard within the shared zone in accordance with *MIS 10 Fences, guardrails and barriers* and as detailed in the Australian Standards.

Provision: To the *Parking and Vehicular Access General Code*.

Requirement: Kerb ramps shall conform to *AS 1428.1*.

Surfacing: All disabled parking bays shall be provided on sealed surfaces.

Angle of parking: All new disabled parking bays shall be provided at 90° or parallel to the kerb.

2.1.13 Landscaping to car parks

Design: Conform to the *Parking and Vehicular Access General Code*, *MIS 24 Soft landscape design* and *MIS 25 Plant species for urban landscape projects*.

General: Maximise shading with tree planting where possible. Consider the following:

- > Provision for drainage, including porous surfacing surrounding the root zone that is appropriate to the tree species; refer to *MIS 25 Plant species for urban landscape projects*.
- > A suitable growing medium to allow for air and water movement to the root zone.
- > Appropriate offsets for vehicle overhang from mature trunk locations to avoid damage to vehicles and trees.
- > Appropriate offsets to street lighting such that mature canopies will not obscure lighting.

Minimum offset: 0.8m clear distance between vehicle and mature tree trunk location.

2.1.14 Parking provision for other road users

2.1.14.1 Motorcycles and motor scooters

Design: To *AS 2890.1*.

Provision: To the *Parking and Vehicular Access General Code*.

Security rails: Consider providing locations for affixing motorcycle locks where appropriate.

Line marking: Do not line mark motorcycle spaces, refer to *MIS 13 Traffic Control Devices*.

2.1.14.2 Bicycles

Design: To *AS 2890.3* and *MIS 05 Active travel facilities design*.

Provision: To *Bicycle Parking General Code*.

2.1.15 Trolley return bays

Design: Conform to *AS 2890.1* and *MIS 20 Street and park furniture*.

3 DOCUMENTATION

Requirements: Comply with *Reference document 6 Design Acceptance submissions*.



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