



CROSSOVER GUIDELINES

TABLE OF CONTENTS

INTRODUCTION	3
CROSSOVER REQUIREMENTS	3
RESIDENTIAL CROSSOVERS.....	3
COMMERCIAL/INDUSTRIAL CROSSOVERS	5
SPLAY DIMENSIONS	5
RESIDENTIAL SPLAYS.....	5
COMMERCIAL/INDUSTRIAL SPLAYS	6
CROSSOVER MATERIALS.....	6
RESIDENTIAL CROSSOVER MATERIALS.....	6
COMMERCIAL/INDUSTRIAL CROSSOVER MATERIAL.....	6
CROSSOVER DEPTHS.....	6
BLOCK PAVEMENT STRUCTURES	6
EXISTING INFRASTRUCTURE.....	7
FOOTPATH AND KERBING INFRASTRUCTURE.....	7
OTHER INFRASTRUCTURE	8
STREET TREES.....	8
LEVELS AND GRADES	8
CULVERTS	8
REDUNDANT CROSSOVERS.....	8
RESPONSIBILITIES AND LIABILITY	8
CONTRACTOR RESPONSIBILITIES	8
CONTRIBUTIONS.....	9
FURTHER INFORMATION	9
REFERENCES.....	9

INTRODUCTION

A crossover is the extension of a driveway from the edge of the property boundary to the edge of the road. Its primary function is to provide access for vehicles across the verge which forms part of the road reserve.

The purpose of these Guidelines is to provide information to residents in relation to the design and construction of a crossover. These guidelines have been developed by the Shire to ensure that each crossover:

- is of a uniform standard;
- ensures a safe entrance and exit to the property;
- reduces stormwater entering private property;
- provides a safe and even surface for pedestrians;
- reduces any negative impact on other infrastructure in the road reserve or surrounding area; and
- maintains and/or improves the streetscape.

CROSSOVER REQUIREMENTS

As driveways and crossovers are connected, both are subject to the requirements of the *Residential Design Codes of Western Australia* (R-Codes) which form part of the *Shire of Dandaragan Local Planning Scheme No.7*.

Where a driveway and associated crossover does not comply with these requirements, a Development Application is required for the non-compliant crossover.

RESIDENTIAL CROSSOVERS

- No closer than 0.5m from a side lot boundary.
- No closer than 6.0m to a street corner or the point at which the kerb line begins to curve as seen in Figure 1.
- Crossovers and splays are not permitted within the truncation hatched area shown in Figure 1.
- Aligned perpendicular to the street.
- Located to avoid street trees. Where unavoidable contact the Shire for guidance or to seek approval for relocation or removal of trees.
- Located at a minimum distance of 1.0m from stormwater drainage pits, service utility boxes, street lights/power poles, kerb ramps.
- Crossovers are to be positioned such that sight lines between path users and vehicles are unobstructed by permanent fixtures (fences, trees, etc). A sight triangle of 1.5m by 1.5m at the property boundary is required to be constructed and all fixtures are to be truncated or reduced to no higher than 600mm as shown in Figure 2.
- The minimum width of a single crossover is 3.0m and the maximum width is 6.0m. Two crossovers are permitted on the basis that the combined width of both crossovers is no wider than 9.0m.
- For Beachridge Estate properties, crossovers are to be located where designated at the subdivision stage unless written Shire approval is obtained for an alternative location.

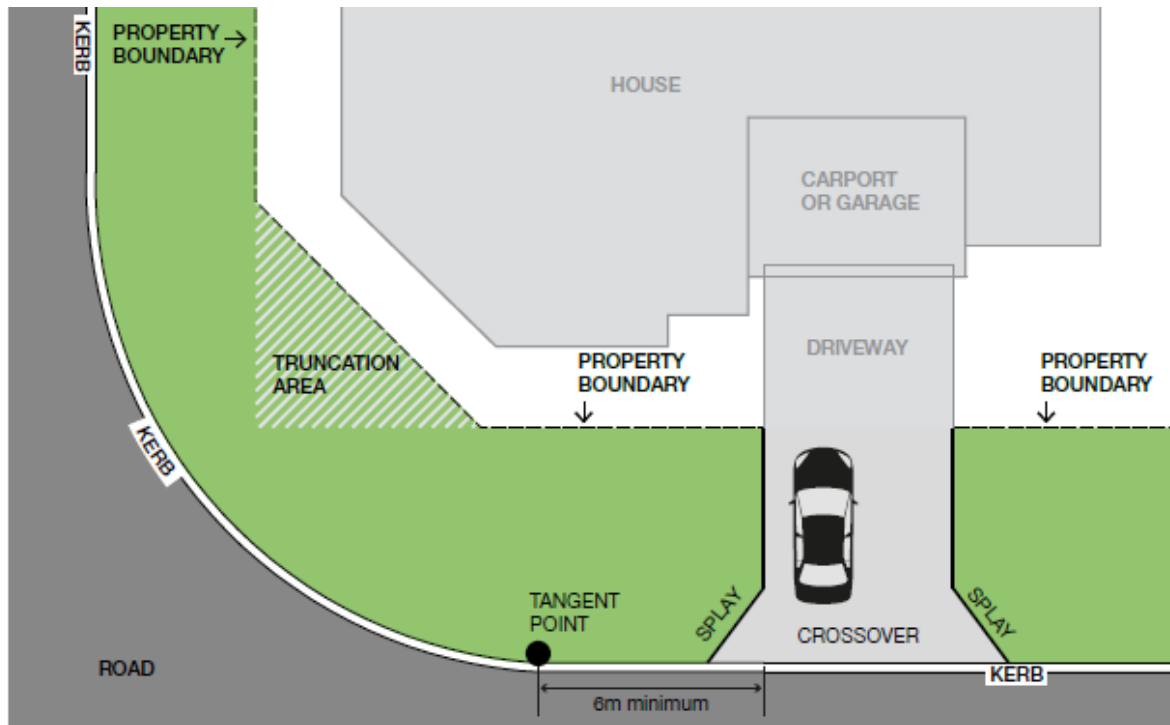


Figure 1: Permitted area of crossover

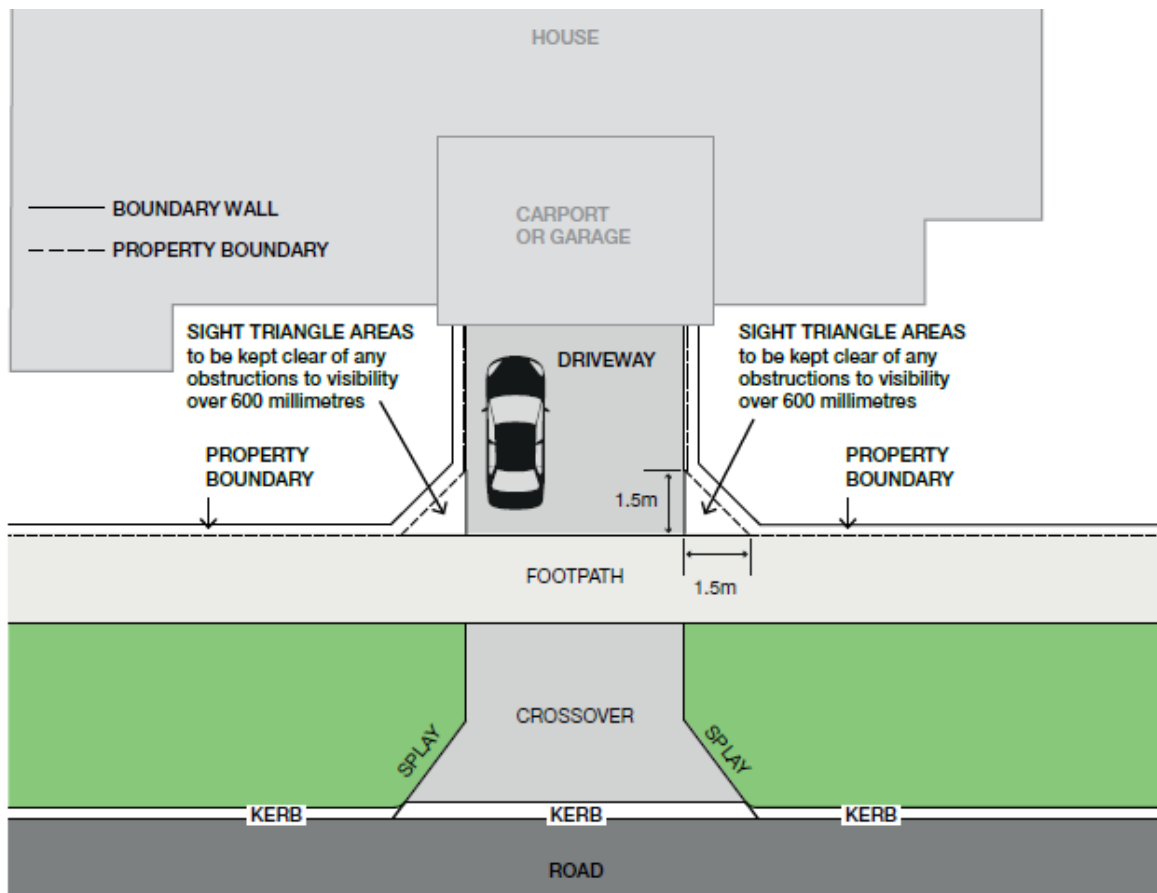


Figure 2: Sight triangle at the intersection of the crossover and footpath

COMMERCIAL/INDUSTRIAL CROSSOVERS

- No closer than 1.0m from a side lot boundary.
- Be no closer than 25.0m to the side truncated area, contact the Shire for guidance if minimum offset cannot be achieved.
- Aligned perpendicular to the street.
- Located to avoid street trees. Where unavoidable contact the Shire for guidance or to seek approval for relocation or removal of trees.
- Located at a minimum distance of 1.0m from stormwater drainage pits, service utility boxes, street lights/power poles, kerb ramps, street trees.
- Between 6.0m and 10.0m in width.

SPLAY DIMENSIONS

RESIDENTIAL SPLAYS

Residential splay dimensions are as the below table:

Crossover Width	3.0m	3.0m - 4.0m	4.0m - 5.0m	6.0m
Splay Length	3.0m	2.5m	2.0m	1.5m
Splay Width	2.0m	2.0m	1.5m	1.0m

Please note: For crossovers 6.0m wide, splays are not required for residential properties. Splay widths must not encroach into the adjacent property verge area and dimensions in Table 1 can be reduced to fit the available space.

Figure 3 provides an example of splay dimensions.

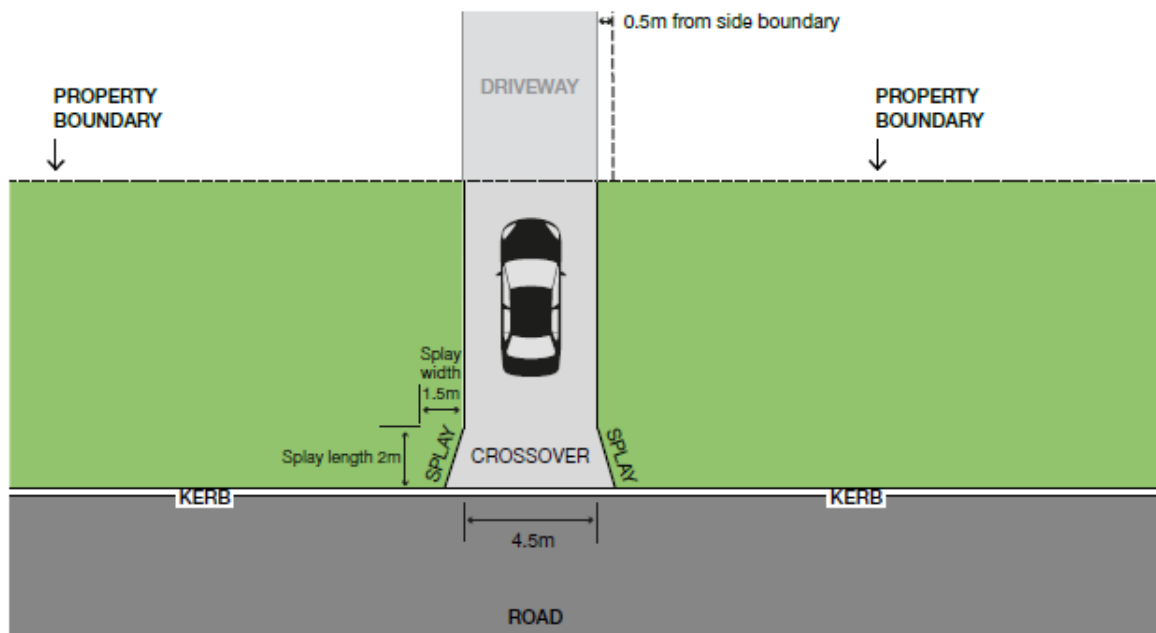


Figure 3: 4.5m wide crossover example

COMMERCIAL/INDUSTRIAL SPLAYS

Commercial/industrial crossovers are to have a splay width of 2.1m and a splay length of 2.1m.

CROSSOVER MATERIALS

RESIDENTIAL CROSSOVER MATERIALS

Crossovers may be constructed using the following materials:

- Grey pre-mix concrete
- Colour incorporated concrete such as exposed aggregate or coloured concrete surface treatments
- Segmented or square clay/concrete pavers
- Asphalt/hot mix/bitumen seal/black top
- Gravel
- Crushed bricks
- Compacted limestone
- Loose stone

COMMERCIAL/INDUSTRIAL CROSSOVER MATERIAL

Crossovers may be constructed using the following materials:

- Grey pre-mix concrete with F63 reinforcement mesh as a minimum located centrally within the depth of concrete.
- Colour incorporated concrete such as exposed aggregate or coloured concrete surface treatments with mesh requirements as above
- Segmented or square clay/concrete pavers
- Black asphalt (AC10) – or equivalent
- Gravel
- Compacted limestone
- Loose stones

CROSSOVER DEPTHS

Concrete – 100mm minimum

Bitumen/asphalt – 25mm minimum

Brick paving – paver depth to be 60mm minimum

BLOCK PAVEMENT STRUCTURES

Applicable block paving patterns for driveway crossover are stretcher bond and 45 or 90 degree herringbone pattern as shown in Figure 4 below. The most preferred pattern is 45 or 90 degree herringbone because the pattern tightly interlocks the bricks and it can handle significant weight, which is ideal for driveways.

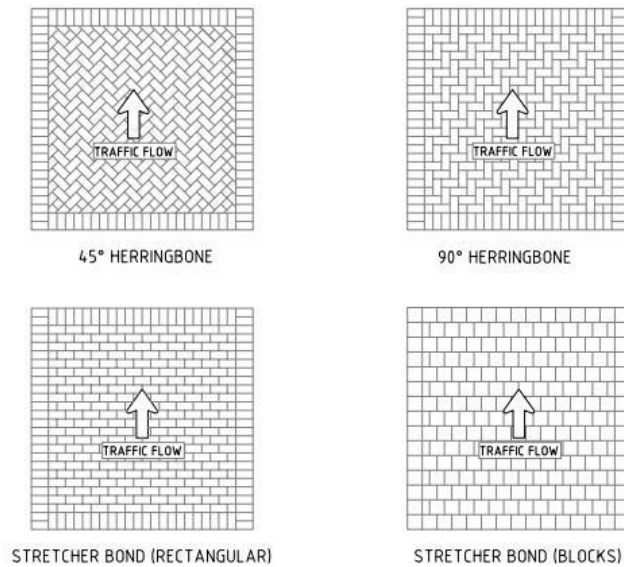


Figure 4: Block pavement crossover layouts

EXISTING INFRASTRUCTURE

FOOTPATH AND KERBING INFRASTRUCTURE

The Shire's existing footpath infrastructure must remain continuous in concrete through the crossover as shown in Figure 5. The removal of footpaths is not permitted for residential crossovers. Where an existing concrete footpath has thickness of 100mm or more, is in good condition, and adjacent to the lot boundary or kerb line, the crossover shall be constructed either side of the concrete footpath.

Crossovers are required to have mountable kerbing or apron kerbing to separate the crossover from the carriageway. Please contact the Shire for requests to modify or remove existing kerbing. In situations where the kerb profile is too high or unsuitable for vehicles to navigate, the Shire will, upon request, install a low-profile trafficable kerb at the property owners' expense. Where the existing footpath is against the back of the roadside kerb, the section of footpath that intersects with the new crossover must be reconstructed (works completed by the Shire) to incorporate the splays at the property owners' expense.



Figure 5: Crossover examples where the footpath remains continuous

OTHER INFRASTRUCTURE

Other Shire infrastructure such as stormwater drainage pits and traffic median islands will not be relocated or modified. The property owner may request the Shire to modify drainage manholes so that they may become trafficable but this will be at the property owner's expense.

STREET TREES

Where the alignment of a crossover cannot avoid an existing street tree contact should be made with the Shire for replacement or relocation of such tree in an alternative verge location.

LEVELS AND GRADES

New crossover levels must follow the existing verge levels with any excavation or fill to be less than 150mm. The verge requires a two percent positive grade over a distance of two-and-a-half metres from the back of the kerb in order to:

- facilitate stormwater runoff;
- prevent water collecting on verges or handstand areas such as footpaths and crossovers;
- prevent potential safety hazards; and
- prevent water from the road reserve entering property which may lead to flooding.

Where difficulties are encountered onsite and levels or slopes cannot be achieved, the applicant should contact the Shire for further advice.

CULVERTS

Where a residential crossover traverses an open drain or swale, a culvert will be required, please contact the Shire for further technical information on this matter.

REDUNDANT CROSSOVERS

A redundant crossover is any crossover that does not provide access to a property, garage or carport.

The redundant crossover is to be removed by the property owner immediately after the new crossover comes into use. Additionally, any reinstatement works of the Shire's infrastructure such as footpaths and road kerbing is to be carried out by the Shire at the property owner's expense. The depression created on the verge by the removal of the redundant crossover is also the responsibility of the property owner or their contractor and is to be backfilled to match affect streetscape amenity.

RESPONSIBILITIES AND LIABILITY

It is the responsibility of the property owner to ensure that the works carried out by their contractor is undertaken in a manner that Shire owned infrastructure (kerbing, bitumen road surface, etc) is maintained to a good condition. Any repair works or reinstatement works to Shire owned infrastructure will be undertaken by the Shire at the property owner's cost.

CONTRACTOR RESPONSIBILITIES

- Cutting existing barrier kerbing with a concrete saw and removing the same without damage to pavement or remaining kerbing or services.
- Removal and disposal of all surplus material from the site and leaving the site in a clean and tidy condition at all times.
- Removal of all formworks without damage to concrete or pavement or existing kerbing.
- Reinstatement to kerbing, concrete or brick paving or bituminous road surfaces damaged during the course of the works.
- The identification, notification and protection of all services.
- The repair of any damage to Public Utility Service or any other thing damaged during the course of works.

- The protection of private property from damage and the new crossover surfaces from the rain damage or vandalism.
- Liaison with the ratepayer to provide for access and egress and notification of intention to commence works.
- Good public relations being retained with the Local Government and ratepayers generally.
- Cutting of all bitumen where removal is specified.
- To pay all fees charged by Waste Disposal Sites in respect of excavated material.
- Reinstatement of existing slab footpaths to abut newly constructed crossover.
- Traffic management and the safety of vehicles and pedestrians affected by the works
- Notification and compliance with all the requirements of the relevant local government or road authority.

CONTRIBUTIONS

If it is a first crossing constructed on the property, the Shire may contribute towards the cost. The Subsidy Payment form for Crossovers can be found on the Shire's website and is required to be completed once the works have been carried out. Application for a subsidy payment must be made on the prescribed form within 6 months of the date it was constructed and is to be accompanied by proof of pavement (invoice or delivery docket).

The crossover subsidy is a one-off contribution and is subject to the conditions above. The rebate payment will be provided once the application form has been approved and the crossover is deemed to be compliant.

FURTHER INFORMATION

Please contact the Shire on 9652 0800 or council@dandaragan.wa.gov.au for further information or clarification of these guidelines.

REFERENCES

This Guideline provides for crossover design that references Statutory and best-practice guidance documentation which includes the following:

- *Austrroads Guide to Road Design*
- *Australian Standards AS2890.1:Off-street parking (2004)*
- *State Planning Policy 3.1 - Residential Design Codes (R-Codes)*
- *WAPC Liveable Neighbourhoods*
- *WALGA Crossover Guidelines*