Narrow lots and narrow verges.

A guide to composing streetscapes

September 2013
Revision C

This document is available in alternative formats upon request.

Revisions

Revision	Revision Date	Nature of Revision.	Revised by
A	4/9/13	Draft issue for comment	Andy Jarman
B	4/9/13	Corrections to Dia. 6	Andy Jarman
C	17/09/13	Dia 2 and 4 amended	Andy Jarman

Contents

Blank Page.

1. Introduction.

The pursuit of denser population levels by the Western Australian Planning Commission's Liveable Neighbourhoods Policy has resulted in the promotion of narrower verges and lot widths.

As lot and verge widths decrease certain thresholds are reached. If these thresholds are not understood and responded to at the subdivision design stage, the inadequacies of the layout of these narrow streets and lots will lead to a great loss of amenity and utility. Fewer on street parking opportunities, the loss of half to two thirds of all shade trees, and increased conflict between street users and those responsible for the maintenance of the street can occur through adopting old practices in new circumstances.

An analysis of the functioning of the narrow street and the narrow lot front, the arrangement of underground utilities, designated crossover locations and the demands of shade tree planting is outlined in the following document.

Acceptable responses are also described to guide and assist subdivision design teams towards optimising the capacity of the City's streets.

Blank Page

2. Narrow (<5m) Verges.

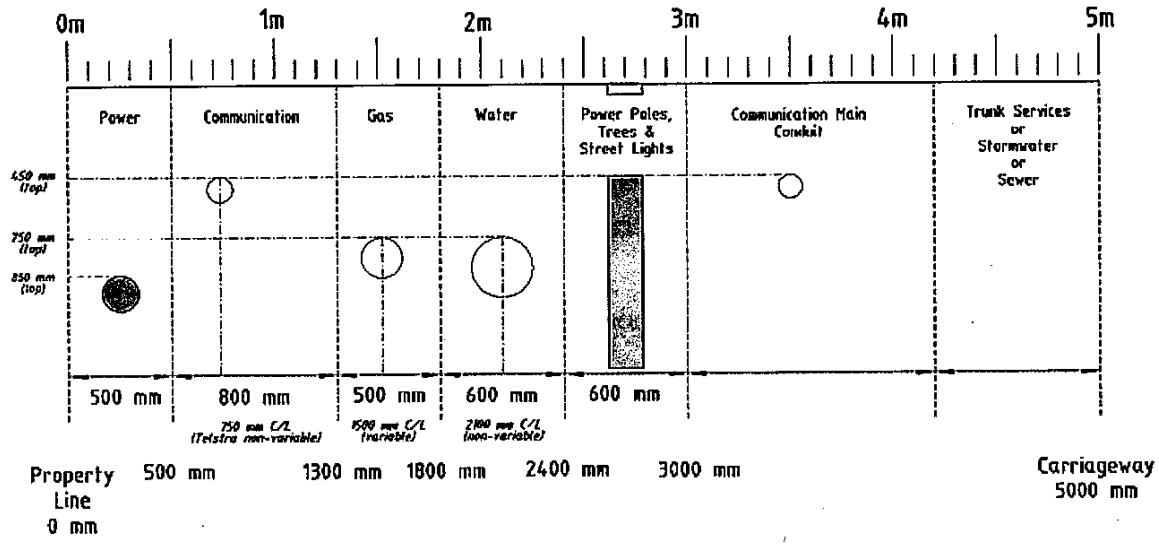

Diagram 1

The Utility Providers Code of Practice for Western Australia describes the alignment of utilities within the road verge as agreed between the state's various statutory utility providers (**Diagram 1**). The *Utility Providers Code of Practice* no longer contains provision for varying the alignment of services to accommodate the more constrained road reserves being promoted by *Liveable Neighbourhoods*.

The local government authority's liability for damage to underground services by tree roots will increase as the City approves shade tree planting outside of the alignment allotted the tree in the *Utility Providers Code of Practice.*

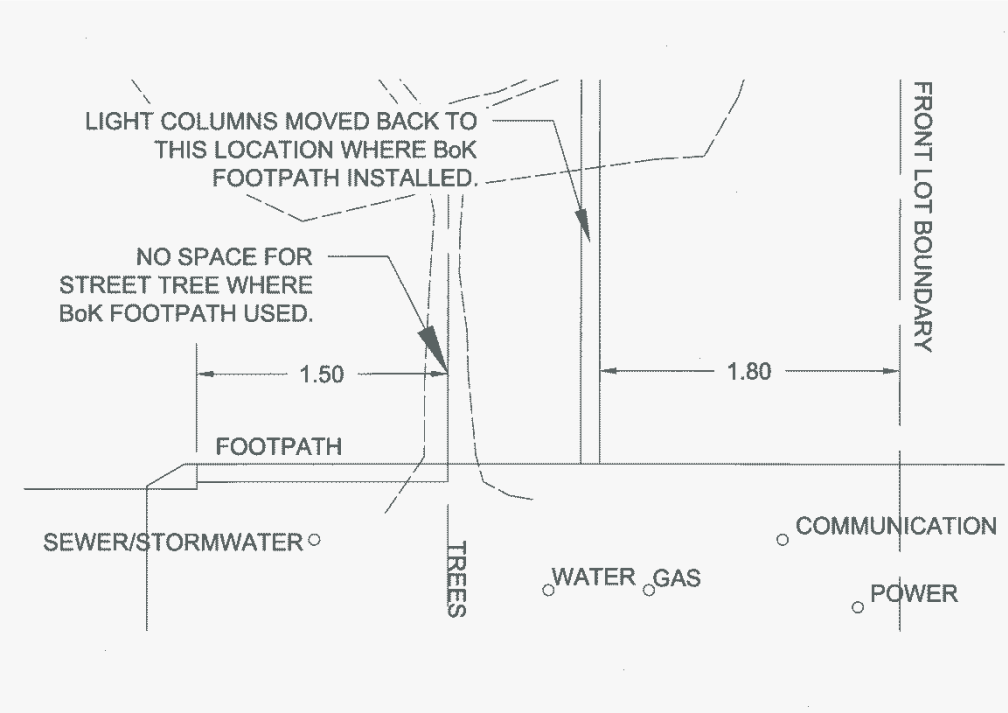

Diagram 2

Diagram 2 illustrates that as a consequence of the ridged application of the alignments given in *The Utility Providers Code of Practice* the City cannot accept tree planting AND footpaths on the same side of the road where 4.5m wide verges are adopted. This has halved the number of street trees able to be accommodated in narrow streets, where all shade tree planting must occur on the 'non-footpath' side of the road.

The City has investigated a number of solutions aimed at ensuring newer, more densely developed streets do not suffer from a lack of shade or amenity.

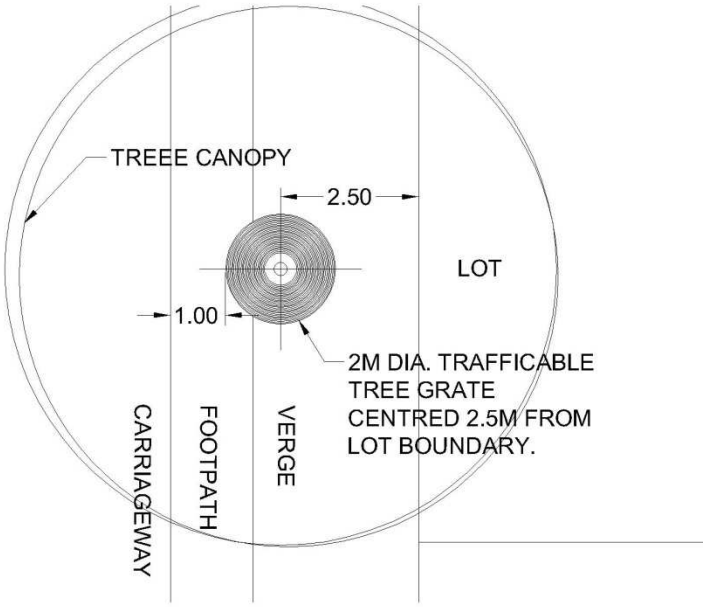

Diagram 3

Diagram 3 indicates how a footpath may be located at the back of the kerb line and a shade tree may still be established in the allotted alignment by inserting a trafficable tree grate and guard into the edge of the footpath. This requires the use of the permissible 2.5m (from front lot boundary) alignment, not the optimum 2.7m alignment for street tree positioning.

This response is advantageous because shade trees are often destroyed by tradesmen during the development of the private lot. The presence of a tree grate (and tree guard) cast into the edge of the footpath is clear evidence that the tree has been removed/destroyed. Identifying breaches of shade tree security bond conditions by property owners is made simpler for the City's compliance officer to administer.

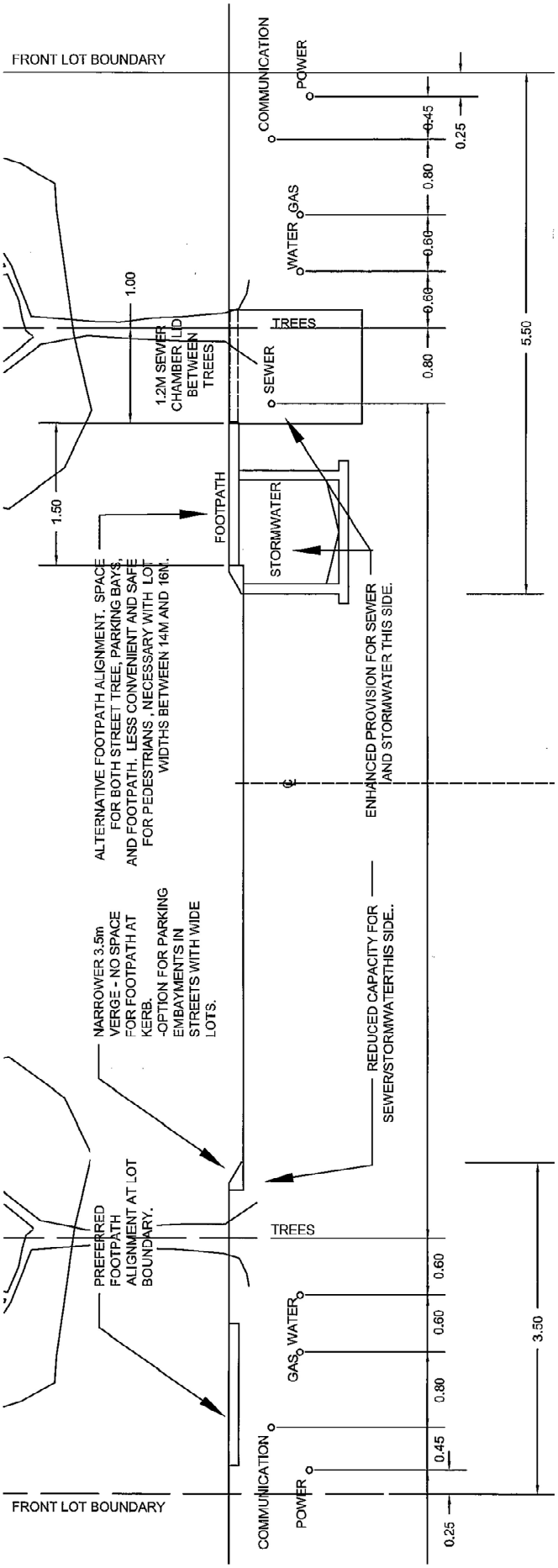

Diagram 4

Diagram 4 indicates the 6m wide carriageway within the 15m wide road reserve aligned asymmetrically with a verge 5.5m wide on the side of the road with the footpath. This provides for locating both the footpath and street tree on either side of the road.

Conclusion.

Careful consideration of the alignment of both the carriageway and the footpath is required to maximise walkability of the street where verges narrower that 5m are proposed.

Trafficable tree grates protruding into the edge of back of kerb footpaths, or asymmetrical carriageway alignment must be considered at subdivision design stage.

Asymmetrical alignment of carriageways avoids the cost of installing tree grates in the footpath and provides the option of locating the footpath either at back of kerb or at the front lot boundary.

Certain circumstances require back of kerb footpaths, for example;

- the new street may need to marry in with an existing street alignment, or
- pedestrian movements may require a back of kerb footpath on the narrow verge side of the carriageway (in activity centres or outside schools for instance)

In such circumstances consideration should be given to the use of in-footpath tree grates. The minimum width of paving between the tree grate and the kerb must be 1m to ensure public access is maintained in the event of damage occurring to the tree grate over time.

3. Narrow lot fronts (<16m)

Crossovers – flared and non-flared.

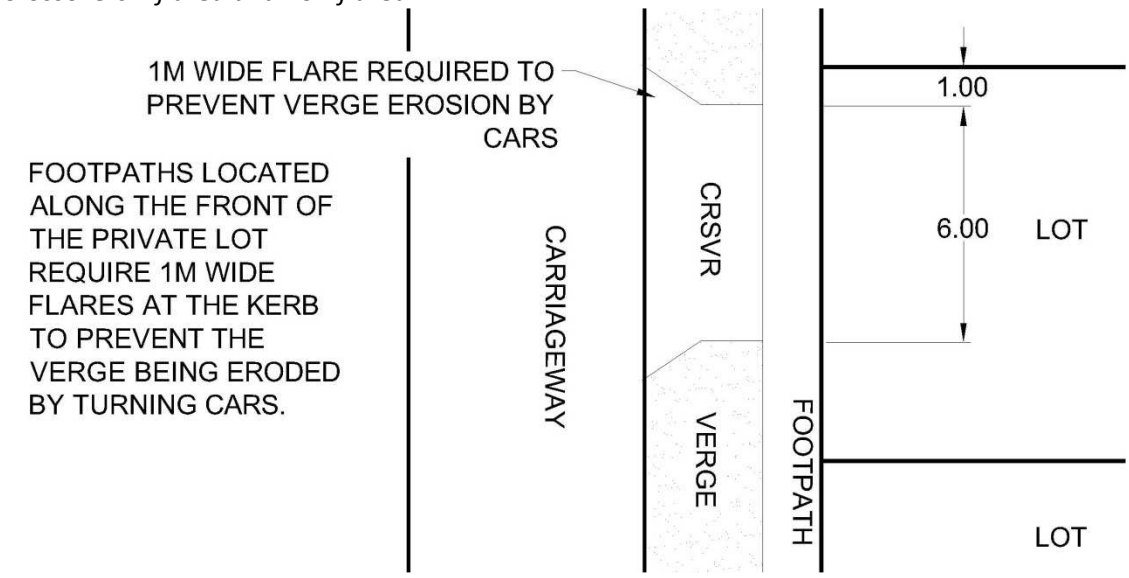

Diagram 5

The City of Cockburn provides for a 6m wide crossover. **Diagram 5** indicates how a crossover is required to be flared by 1m at the back of kerb where no footpath is provided. These flares are not required where a footpath is present at the back of the kerb (refer to Diagram 8).

Tree positioning - across the width of the lot.

To avoid root damage to crossovers the City requires street trees to be planted at least 1m from the crossover. The default situation is that crossovers may be installed on either side of the lot to suit the design of the house. As a consequence a common practice has developed which assumes street trees should be planted centred on the lot. On lots wider than 16m this provides verge shade tree locations which do not conflict or constrain future crossover locations.

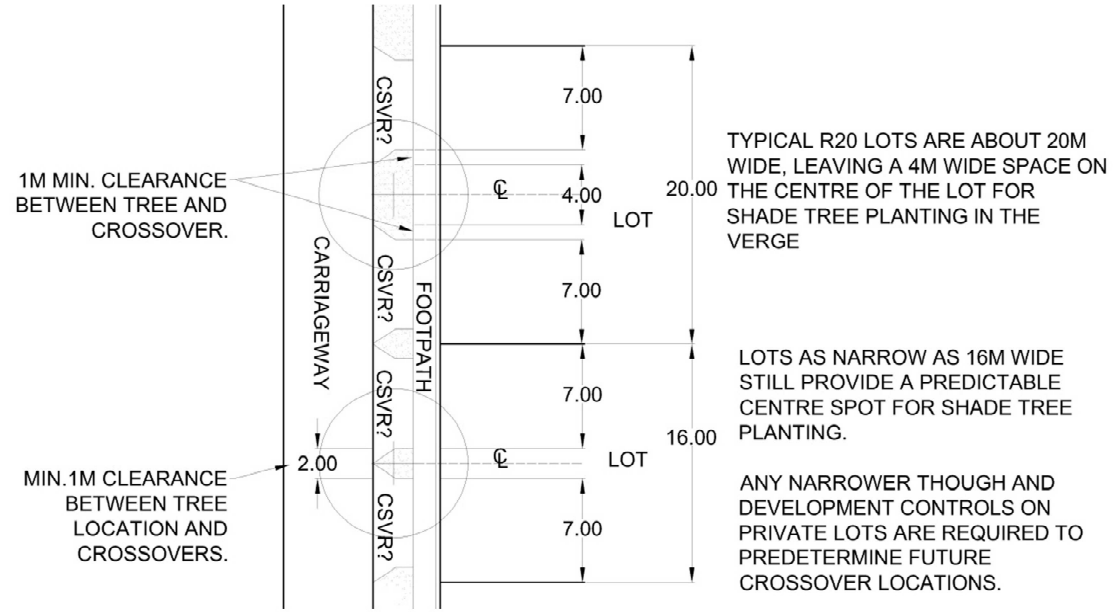

Diagram 6

Diagram 6 describes a lot 16m wide, with a footpath at the front of the lot. In verges narrower than 16m locating a tree on the centre of the lot will not ensure it doesn't conflict with future crossover requirements. A shade tree location that is sure not to conflict with future crossovers cannot be chosen without first constraining where the future crossover may go.

It should be noted here that tree planting aligned with the shared/side lot boundaries of private lots can be predicted not to conflict with future crossover positions. This position may not be available where a street light column occupies this position. A tree aligned with the side/shared lot boundary will always require proper protection with a robust visually permeable tree guard.

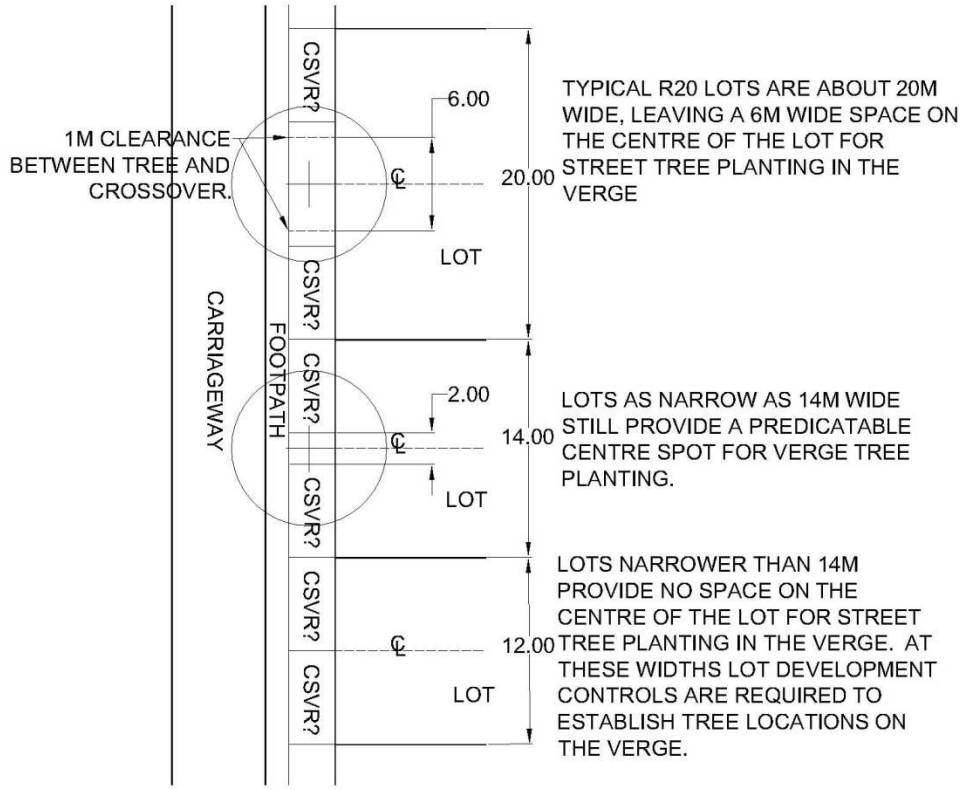

Diagram 7

Diagram 7 describes a lot narrower than 14m wide with a footpath at the back of the kerb. In this circumstance locating a tree on the centre of the lot will not ensure it doesn't conflict with future crossover requirements. A shade tree location that is sure not to conflict with future crossovers cannot be chosen without first constraining where the future crossover may go.

As per the notes pertaining to diagram 6 above, shared/side lot boundary alignment may prove to be a suitable additional/alternative location.

Conclusion.

Lots narrower than diagrams 6 and 7 require the position of the future crossover to be predetermined by planning controls such as a Detailed Area Plans (DAP) at subdivision stage.

Lots between 14 and 16metres wide may be provided with a back of kerb footpath so that a centre of lot default tree alignment is possible without the need for a DAP.

4. Predetermining crossover location by Development Control Plan.

Detailed Area Plans can predetermine where a garage is to be located on a private lot. Careful consideration of the implications of garage locations should be made to ensure optimum composition of the street is achieved. This will optimise

- on street parking,
- shade tree provision,
- walkability of the street and
- ensure maintenance responsibilities are easily defined and understood.

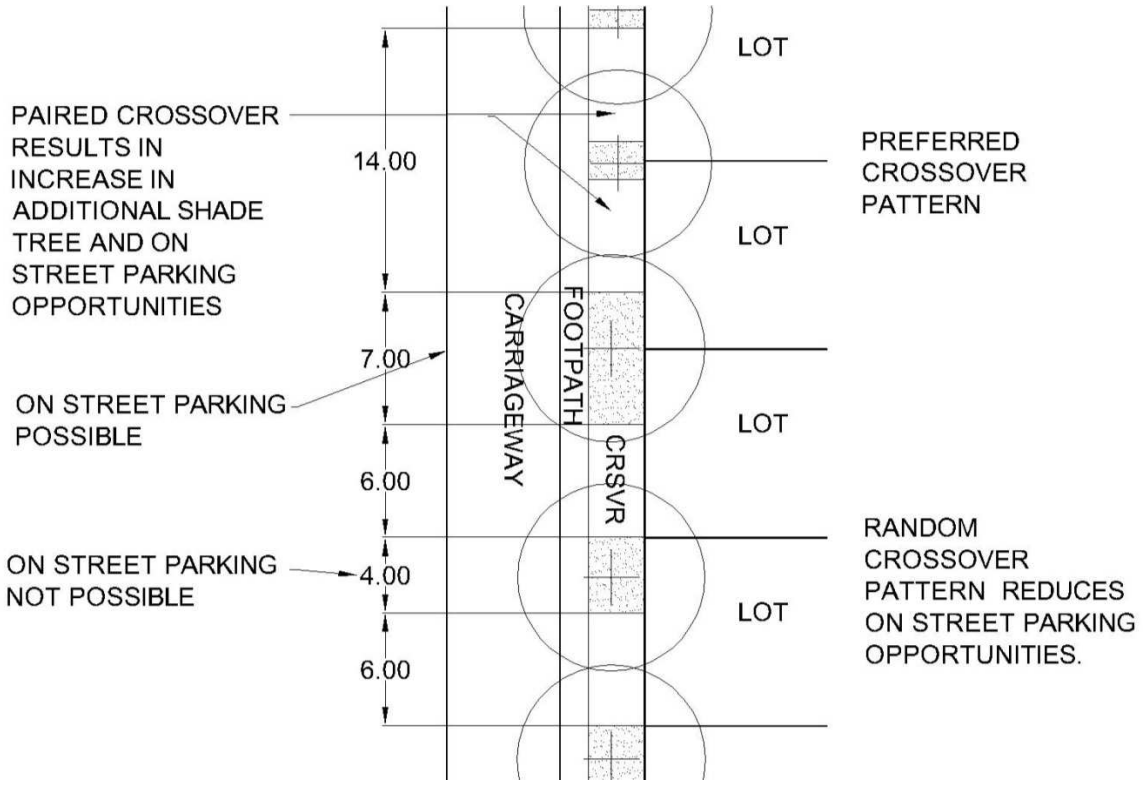

Diagram 8

Diagram 8 indicates how crossovers are best located such that they appear in pairs with long runs of uninterrupted kerb line and verge appearing between each pair.

Diagram 8 also indicates how the 2m gap between paired crossover locations may be exploited for shade tree planting in advance of lot development, before the crossovers are established.

The exploitation of the 2m gap between paired crossovers may enable two trees per lot to be established, where small building set backs are proposed this will assist in attaining an extensive shade canopy using smaller tree species.

The 2m gap between paired crossovers will occasionally be occupied by a light column, leading to the omission of a tree from this spot. Light columns are generally located at about 40m centres (every third or fourth lot).

The practice of planting between paired crossovers will require the trees to be protected during the development phase with visually permeable and robust tree guards designed to clearly demarcate the position of the *future* 2m gap between paired crossovers.

Diagrams 6 and 7 above describe how tree planting in streets with lots between 14 and 16m wide requires either

- a back of kerb footpath alignment
- a Development Control Plan and/or
- side/shared lot alignment

Lots less than 14m in width all require careful composition and control of crossover locations to maintain optimum use of the street for parking and shade provision.

In streets with lot widths less than 14m a front of lot boundary location for the footpath is preferable. Pairing of crossovers will be desirable to maximise on-street parking and provide additional opportunities for shade tree planting between crossover pairs.

In streets with lot widths less than 14m a back of kerb location for the footpath can be used but paired crossovers will need to be spaced with a 2m gap between them to prevent residents trespassing onto neighbour's crossovers. As described above, this gap is suitable as a shade tree pit location.

Development Control Plans nominating garage locations shall be required to anticipate and respond to site specific constraints.

Site specific constraints may include the lack of lot front available to corner lots where 2m of lot front either side of the corner truncation must be kept clear of crossovers, or where asymmetrical roads intersect with roundabouts and carriageways without similar asymmetrical alignments. In this latter case transition arrangements will be needed where the street composition/verge widths can move from one design response to the other.