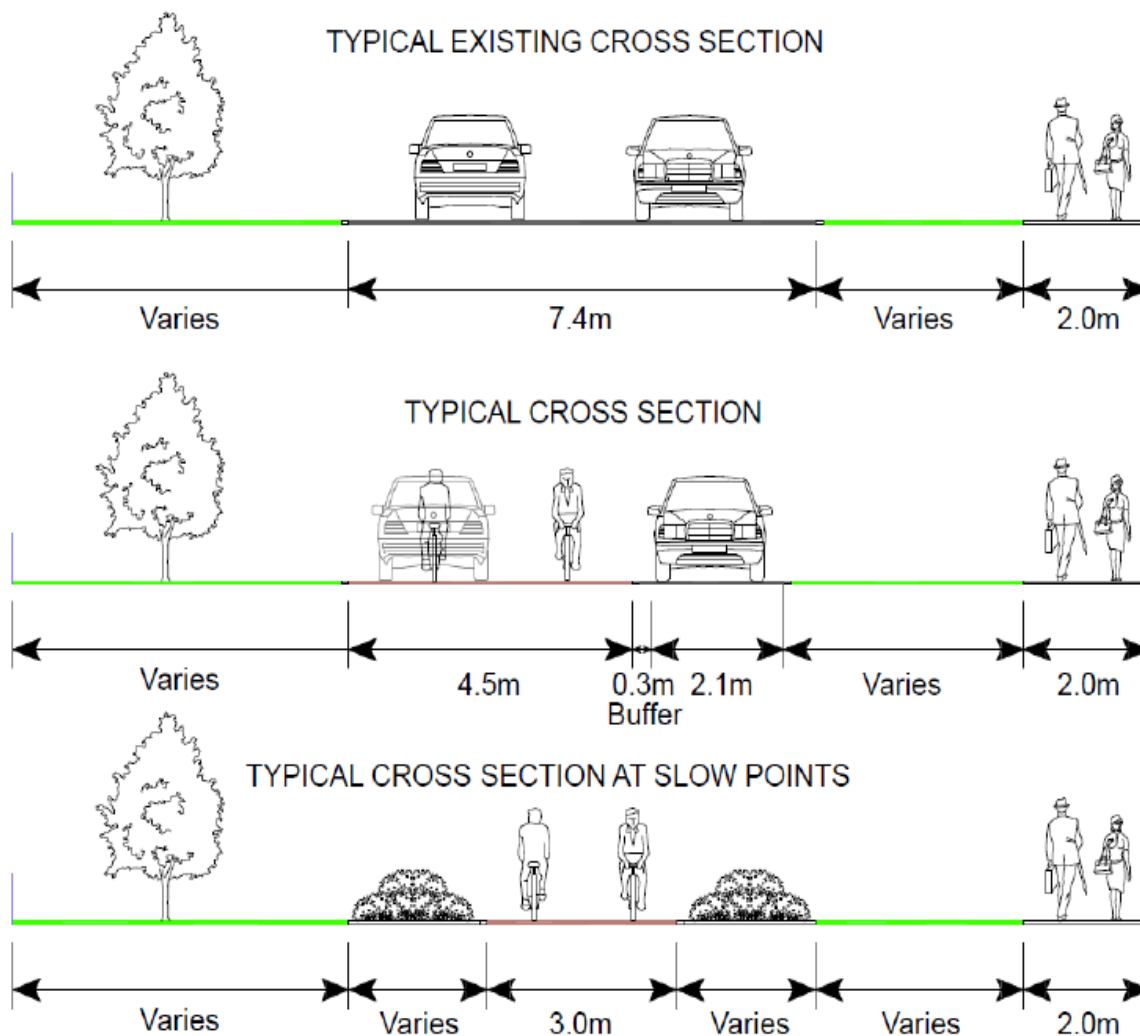


# SAS Treatment Options

The purpose of a safe active street is to establish a safer, quieter, and more attractive road environment that encourages people of all ages and abilities to choose cycling or walking over the private car. Safe active streets help to create communities where active transport is more convenient, easy, and sociable.

Located primarily on local streets, safe active streets fill missing links in the larger strategic bike network by using traffic reduction and calming measures to reduce traffic volumes, lower vehicle speeds to 30km/h, and improve neighbourhood amenity.

## Cross Section



NOTE: Carriageway widths need to be restricted to 4.5m of usable space or 4.8m if the site is constrained between kerbs that create a physical barrier.

## Speed Limits

Safe Active Streets posted speed limit in 30km/h. The start of the SAS corridor at either end of the route will include a Double 30km/h regulatory signs.



The intersecting roads to the SAS corridor will also have pavement markings indicating the controlled 30km/h speed of the SAS.



SAS Patches will also be installed at the start and end of the route and following any intersections where the priority is not given to the SAS. These are on-street markings that indicate to users that they are entering a lower speed safe street environment.



In addition, on-street bike symbol markings will be used on both sides of each intersection along the SAS corridor to indicate to users of the street that bike movements are to be expected.



## Raised Intersection Treatments

These treatments tend to serve as a Threshold Treatment/Entry Statement to the Safe Active Street raising awareness of a change in environment/conditions.



Raised intersection treatments introduce a vertical deflection that slows vehicle speeds on the approach to the intersection. These treatments can be installed in a variety of form which create less impact on the existing drainage systems.

Raised plateaus are a more cost-effective way to accomplish the same effect with minimal disruption to the intersection.



The corner radius can be tightened at the intersection to lower vehicle cornering speed. Tightening of the corner radius also reduces the crossing distance for bike riders and pedestrians crossing at these prime crossing locations from footpath to footpath, thus ensuring a smoother transition at the crossing points as road surface treatment is almost level with the footpath.



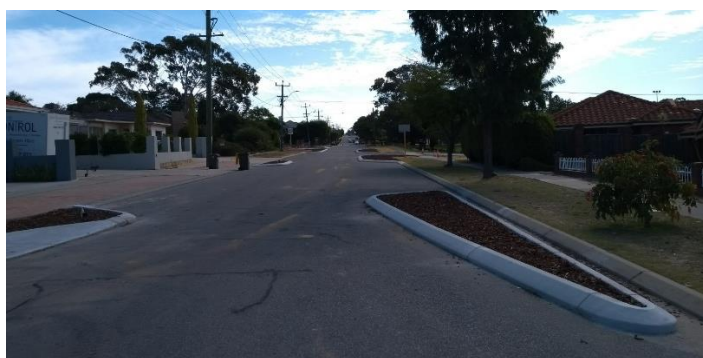
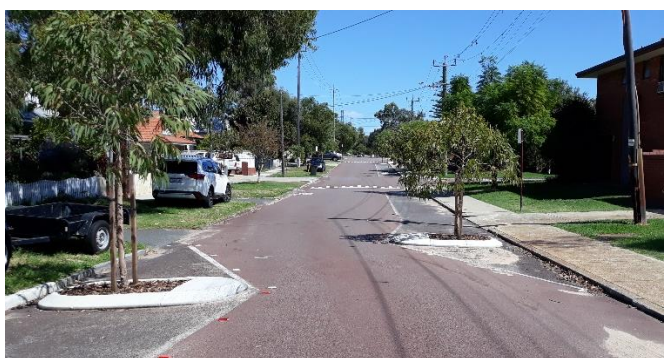
Tightening of the corner radius also creates additional space on the footpaths at the intersections providing an opportunity to introduce transition ramps between the road and the footpath to create alternative crossing options for less confident riders.

## Slow Points

Traffic calming devices that reduce the road width to assist with the slowing of vehicle speeds, these treatments are typically installed at approximately 70m-80m along the route. Slow points obstruct forward visibility and provide an opportunity to incorporate street planting into the design and create shade.



The placement and frequency of the slow points is largely guided by existing constraints such as driveway locations, sight lines and road width. The WA approach has been the use 3m wide single lanes, slow points can either single lane or double lane.



Slow points on a SAS are intentionally left without “Give Way” signs and stopping lines to create a self-explaining road that avoids street sign clutter, treatments are highlighted using Raised Reflective Pavement Markings (RRPMs) and lining to ensure that they are visible to vehicle and riders.

Where constraints prohibit the use of slow points, road humps can be used to slow traffic speeds.

**Slow Points (Straight)** - Reduces the road width on both sides to slow the vehicle speed, forces vehicles to yield to other users and restricts vehicles for overtaking manoeuvres on bike riders due to the limited space.

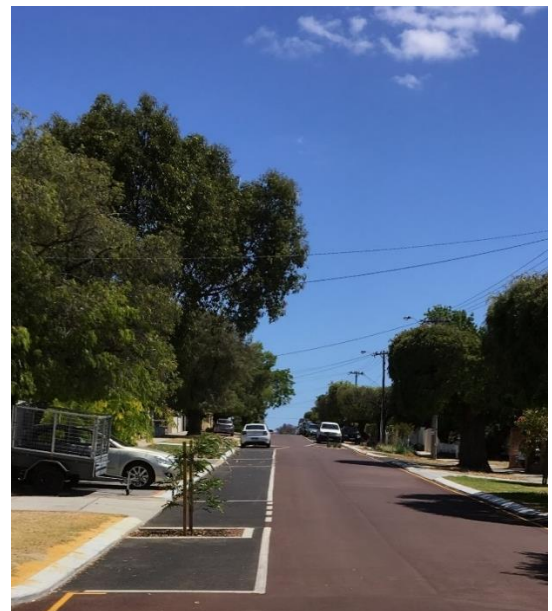


**Slow Points (Angled)** – Same as straight but it incorporates additional constraints with the use of deflection and obstructing forward visibility.



### **Parking Nibs**

Traffic calming devices that reduce the road width (similar to double slow points) to assist with the slowing of vehicle speeds, these treatments are used to create parallel parking opportunities. The nibs are typically installed at the start and end of area to formalise the parking bays, they create an opportunity for street greening and limit forward visibility creating a chicane effect.



## Median Islands

Traffic calming devices that reduce the road width to assist with the slowing of vehicle speeds, these treatments are typically installed to create a staggered crossing opportunity for pedestrians and bicycle riders, incorporating street planting into the design improves the aesthetic appeal of the area and can be used to create a shade canopy. Typically, median width should be 2.5m or greater.



## Grab Rails

Grab rails are used to assist bike riders at crossing points, it allows the rider to retain their balanced while they wait for an opportunity to cross the traffic lanes. Grab rails should never be installed in the middle of a path as they may cause a hazard for people using the path and should be installed with appropriate distance from the road to provide a safe distance from the traffic.

Medians island grab rails are recommended at medians and median islands greater than 1.2m wide and should be placed on the traffic approach side of the ramp which will be on the left-hand side.



Pedestrian grab rails (u-rails) are not required at road verge locations, however, if they are being installed, they should be mounted on the left-hand side of the path and positioned so that they do not obstruct access or restrict movement.

## Road Humps

Traffic calming devices used to slow vehicle speeds by creating a vertical deflection, these treatments should be placed at 70 - 80 metres apart depending on constraints, such as driveway locations and sight lines.

### Road Humps (Round Top)

Are used to slow vehicle speeds on the approach by creating a short vehicle deflection which is contained over a small area, these can impact noise levels if vehicle speeds are higher than advisory posted speeds.



### Road Humps (Flat Top Plateau)

Are used to slow vehicle speeds on the approach and exit by deflection, they cover a larger area and can incorporate a smooth transition crossing points for pedestrians as road surface treatment is almost level with the footpath. They can be less intrusive with a lower noise level, but this will depend on material used within the plateau.

They are also considered more appropriate on bus routes as they create a more comfortable transition for passenger comfort.



### Transition Ramps

Transition ramps are specifically designed to create a smooth carriageway to path transition for riders. These are used at non-SAS priority intersections and roundabouts allowing riders to utilise crossing points.





## Decorative Pavement Markings

Decorative pavement markings consist of differently coloured road paving materials applied to the surface of the road or footpath to simulate a coloured pavement. These have no legal status and are not intended to be used as a Traffic Management Tool, their sole intent is to be used as an aesthetic treatment. Consideration needs to be given to the design and the environment in which the treatment is being utilised to ensure that it does not confuse or distract road users.

LGA's can opt to install a variety of different coloured surface treatments, but they should be aware that they will be responsible for the installation, maintenance, and upkeep of all markings/treatments.



The recommended uses for these treatments are:

- On Local roads with minimal existing pavement markings.
- To promote a special purpose area i.e., revitalisation of activity centres.
- To provide an effective contrast with the adjacent surface.
- To replicate a recognisable colour scheme unique to the local area.
- To highlight conflict areas; or
- Entry statement / Threshold treatment