



## Traffic calming

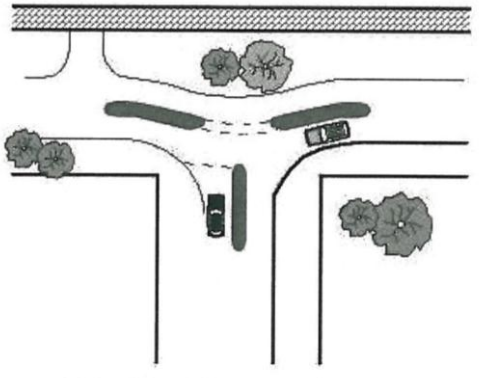
The following pages contain very short summaries of a number of potential traffic calming measures/treatments that may be suitable to manage traffic on Beulah Road. These techniques can create a calmer street from a traffic perspective and all are compatible with cycling.


During the Beulah Road Bike Route Working Group meetings Council staff will be present to guide residents through the process and explain how the measures can or should be used, what technical impediments may exist, and help explore options.





Name	Surface Treatment	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Surface Treatment \$20 - \$30k		<ul style="list-style-type: none"> <li>• Change in traffic environment (i.e. to residential areas)</li> <li>• To signify pedestrian oriented areas</li> <li>• To highlight intersections or traffic control devices</li> <li>• To highlight a hazard ahead</li> </ul>	No diversion likely	Minimal	Negligible	Can reduce (greater awareness)	Increase in noise	OK	Design to accommodate such as hotmix strip for bikes	<ul style="list-style-type: none"> <li>• Poor design can lead to stability problems for cyclist</li> </ul>


Name	Raised Intersection	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Raised intersection \$20,000 – \$40,000		<ul style="list-style-type: none"> <li>• Low speed environments</li> <li>• Commercial areas</li> <li>• Pedestrian crossing areas</li> <li>• As part of a series</li> </ul>	Minimal diversion likely unless very high volumes exist	Some except in that local area	Negligible unless there are high volumes already	Negligible effect	Some negative impact except in that area	OK but not preferred	Minimal impact	<ul style="list-style-type: none"> <li>• Expensive for what it delivers</li> <li>• Effective at reducing speeds in that area.</li> <li>• Needs street lights</li> <li>• Best with other treatments</li> </ul>

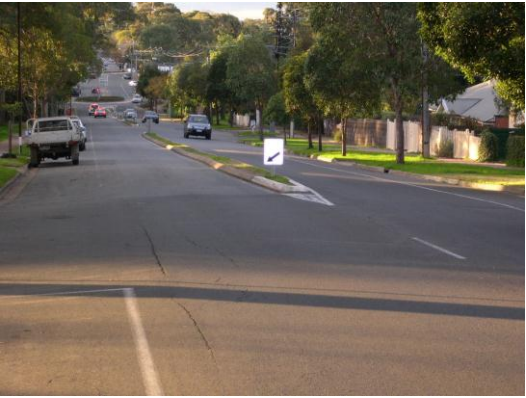
Name	<b>Modified T-intersection</b>	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Modified T-intersection \$35,000 - \$65,000		<ul style="list-style-type: none"> <li>• Moderate speeds without diverting traffic</li> <li>• Addresses right angled crash history</li> <li>• Ease congestion</li> </ul>	Not likely	moderate	Nil to Minimal	Can reduce right angle and speed related crashes	Minor	OK	OK but not good – can also design to accommodate	<ul style="list-style-type: none"> <li>• Loss of parking</li> <li>• May have some landscape maintenance needs</li> </ul>


Name	<b>Driveway Links</b>	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Driveway Links \$30,000 - \$50,000		<ul style="list-style-type: none"> <li>• Strong reduction in through traffic</li> <li>• Desire a significant change in the traffic environment</li> <li>• Aesthetically pleasing</li> <li>• Speeds less than 60km/h</li> <li>• Only suitable for resulting traffic volume of less than 1000 veh/day</li> </ul>	Some diversion likely	Effective	May divert traffic	Overall reduces risk but some slow Right of way conflicts may arise	Increase in noise and fumes on exit	Not suitable	Not desirable (Pinch point) unless carefully designed (with bypass?)	<ul style="list-style-type: none"> <li>• Minor restriction on Emergency and commercial vehicles</li> <li>• Loss of parking spaces</li> <li>• May reduce sight distance too much</li> <li>• Not entirely suitable for Collector Roads</li> <li>• Difficult for bicycles</li> </ul>

Name	Gateway or Entry Treatment	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Gateway Treatment \$5,000 – \$15,000		<ul style="list-style-type: none"> <li>To emphasise change of traffic condition into a local street from a road of higher place in the hierarchy</li> <li></li> </ul>	No diversion likely	Moderate	Minimal	Can reduce due to change of traffic environment	None	OK	Design to accommodate such as hotmix strip for bikes	<ul style="list-style-type: none"> <li>Only suitable for local road</li> <li></li> </ul>


Name	Blister Island	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Centre Blister Island \$35 – \$65k		<ul style="list-style-type: none"> <li>Where speeds are less than 60km/h.</li> <li>To break long straight lines of sight</li> <li>Acceptable for commercial vehicles</li> <li>Used on wide streets</li> <li>Can provide pedestrian crossing refuge</li> </ul>	No diversion likely unless several in series	Effective	Negligible diversion	No change	Minor increase in noise and fumes on exit	OK	Short restriction, may be problematic	<ul style="list-style-type: none"> <li>Loss of parking spaces</li> <li>Driveway location critical</li> <li>Expensive and difficult on narrow streets</li> </ul>

Name	Slow points	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Slow points \$15,000 - \$30,000		<ul style="list-style-type: none"> <li>• Angled kerb extensions to deflect traffic</li> <li>• Speed control</li> <li>• Reduces pedestrian conflicts</li> <li>• High proportion of through traffic</li> <li>• Lower speed volumes (1000 vpd)</li> <li>• Single and two direction</li> <li>• Design for 20km/h</li> </ul>	Diversion likely	Effective (depending on design)	Can divert traffic	May increase [high (>1000 vpd) volume roads]	Increase in noise and fumes on exit	Not suitable	Not desirable (Pinch point) unless carefully designed (with bypass?)	<ul style="list-style-type: none"> <li>• Minor restriction on Emergency and commercial vehicles</li> <li>• Loss of parking spaces</li> <li>• May reduce sight distance too much</li> <li>• Not appropriate for Collector Roads</li> <li>•</li> </ul>

Name	Mid –block Median Treatment	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Mid –block Median Treatment \$2,000 – 10,000		<ul style="list-style-type: none"> <li>• Suitable for wide streets where the pavement width permits</li> <li>• Provision of a refuge for pedestrians and cyclists crossing the street</li> <li>• May enhance the streetscape through landscaping</li> </ul>	No diversion likely	Moderate	Nil	Can reduce due to change of traffic environment	None	OK	Design to accommodate but this may lessen impact	<ul style="list-style-type: none"> <li>• Not suitable for narrow two-lane streets</li> <li>• Not appropriate where property access will be severely restricted</li> </ul>

Name	<b>Roundabout</b>	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
Roundabout \$75 – \$100k		<ul style="list-style-type: none"> <li>• Where vehicle priority from all approaches should be equal</li> <li>• Where there is a high crash rate</li> <li>• Some diversion can occur especially when in series</li> </ul>	No diversion likely unless several in series	Effective	Minimal diversion for single installation.	Reduces right angle but may increase slow speed rear ends	Increase in noise and fumes	Road width dependant	Not endorsed – high incidence of crashes	<ul style="list-style-type: none"> <li>• Large road reserve required</li> <li>• Smaller versions not OK for buses</li> <li>• Intersections only</li> <li>• Uneven traffic flows</li> <li>• Series can cause diversion</li> <li>• Not bike friendly itself but may contribute to lower speeds</li> </ul>

Name	<b>Kerb Protuberances</b>	Appropriate Applications	Divert traffic	Speed Impact	Volume Impact	Crash Impact	Noise Fumes	Bus Impact	Bicyclist Impact	Comments
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<p>Kerb extensions \$2,000 – \$10,000</p>		<ul style="list-style-type: none"> <li>• Low speed environments</li> <li>• Commercial areas</li> <li>• Pedestrian crossing areas (reduce distance)</li> <li>•</li> </ul>	<p>No diversion likely unless very high volumes</p>	<p>Some except in high traffic areas</p>	<p>Negligible</p>	<p>Minor increase</p>	<p>Minor except in high traffic areas</p>	<p>OK</p>	<p>Should be designed to not pinch</p>	<ul style="list-style-type: none"> <li>• Needs good sight distance</li> <li>• Loss of parking spaces</li> <li>• Less effective in reducing speeds</li> <li>• Needs street lights</li> <li>• Best with other treatments</li> <li>• Does not affect emergency vehicles</li> </ul>
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