

# Bicycling Level of Traffic Stress (LTS)

Table 1: Bike LTS classification method

Bike infrastructure	Speed limit (kmph)	AADT (veh/day)	Road/Highway class	LTS
• Dedicated bike path				1
• Shared bike path				1
• Pedestrian path/street with cycling allowed				1
• Protected bike lane	0-50			1
	60			2
	60+			4
	null		Local OR Collector	2
	null		Arterial	3
<ul style="list-style-type: none"> <li>• Buffered bike lane</li> <li>• Painted bike lane</li> <li>• Advisory bike lane</li> <li>• Peak hour bike lane</li> <li>• Shoulder cyclable</li> </ul>	0-30	<=10000		1
	40-50	<=10000		2
	60	<=10000		3
	60+	<=10000		4
	0-30	null	Local OR Collector	1
	40-50	null	Local OR Collector	2
	60	null	Local OR Collector	3
	60+	null	Local OR Collector	4
	0-40	>10000		2
	50-60	>10000		3
	60+	>10000		4
	0-40	null	Arterial	2
	50-60	null	Arterial	3
	60+	null	Arterial	4
	null		Local OR Collector	3
	null		Arterial	4
<ul style="list-style-type: none"> <li>• Mixed traffic</li> <li>• Sharrow</li> <li>• Shared zone</li> <li>• Bus lane with cycling allowed</li> </ul>	0-30	<750		1
	30-50	<750		2
	60	<750		3
	60+	<750		4
	0-30	null	Local	1
	30-50	null	Local	2
	60	null	Local	3
	60+	null	Local	4
	0-30	750-2000		1
	40	750-2000		2
	50	750-2000		3
	50+	750-2000		4
	0-30	2000-3000		2
	40-50	2000-3000		3
	50+	2000-3000		4
	0-30	null	Collector	2
	40-50	null	Collector	3
	50+	null	Collector	4
	0-40	>3000		3
	40+	>3000		4
	0-40	null	Arterial	3
	40+	null	Arterial	4

<ul style="list-style-type: none"> <li>Mixed traffic</li> </ul>	<i>null</i>		Local OR Collector	3
	<i>null</i>		Arterial	4
<ul style="list-style-type: none"> <li>Sharrow</li> <li>Shared zone</li> <li>Bus lane with cycling allowed</li> </ul>	<i>null</i>		Local	2
	<i>null</i>		Arterial OR Collector	3
Any remaining links				4

Table 2: Reclassification for certain classes

Bike infrastructure	Speed limit (kmph)	Width (m)	LTS
<ul style="list-style-type: none"> <li>Painted bike lane</li> <li>Advisory bike lane</li> <li>Peak hour bike lane</li> <li>Shoulder cyclable</li> <li>Buffered bike lane (road-side)</li> </ul>	0-60	Segment width = <i>indeterminate</i>	LTS + 0
		Segment width = 4.5 – 5.49	LTS + 0
		Segment width = 4.2 – 4.49	LTS + 1
		Segment width < 4.2	LTS + 2
	60+	Segment width = <i>indeterminate</i>	LTS + 0
		Segment width = 5.3 – 5.99	LTS + 0
		Segment width = 5.1 – 5.29	LTS + 1
		Segment width < 5.1	LTS + 2
<ul style="list-style-type: none"> <li>Buffered bike lane (kerb-side)</li> <li>Buffered bike lane (both sides)</li> </ul>		Kerbside buffer width = <i>indeterminate</i>	LTS + 0
		Kerbside buffer width = 0.6 – 1.2	LTS + 0
		Kerbside buffer width <0.6	LTS + 1

#### Index:

- Speed limit – DTP + OSM data (DTP data prioritised, OSM used to fill gaps)
- AADT - Obtained from **Intelematics** data (proprietary)
- Highway class – Classification developed by SMSR using OSM highway tags (Refer to a separate document)
  - Motorway
  - Arterial
  - Collector
  - Local
  - Path
- Blue text – Introduced by SMSR, classification not present in the WSP report
- Red text - Not able to implement due to lack of data (parking width)
- Ranges include both minimum and maximum values
- null* AADT values indicate links with missing AADT values
- Segment width – Sum of bike lane/shoulder width + adjacent lane width (excl. parking lane, incl. buffer to traffic width). However, width information is only present for a small share of links. Parking lane width was absent.

#### Acknowledgment:

- The methodology for Bicycling Level of Traffic Stress classification provided in this document has been developed by Dr Debjit Bhowmick with advice from Associate Prof. Ben Beck from the Sustainable Mobility and Safety Research group at Monash University.
- The presented method is an extension of a Level of Traffic Stress tool for cycling infrastructure for Victoria, Australia originally developed by Tom Gardner, Sarah Lowe and Athol Moore of WSP.
- Information on this tool was obtained from an unpublished report submitted by WSP to the Department of Transport.