BICYCLING INFRASTRUCTURE CLASSIFICATION

Summary

This document describes the different types of bicycling infrastructure that exist in Greater Melbourne. Each infrastructure class has a corresponding OpenStreetMap (OSM) pseudocode that can be used to extract, classify or map that specific bicycling infrastructure class.

Types of bicycling infrastructure

- Dedicated bike path
- Shared bike path
- Pedestrian path/street with cycling allowed
- Protected bike lane
- Buffered bike lane (kerb-side)
- Buffered bike lane (road-side)
- Buffered bike lane (both sides)

- Painted bike lane
- Painted bike lane (single-side)
- Advisory bike lane
- Advisory bike lane (single-side)
- Peak hour painted bike lane
- Peak hour painted bike lane (single-side)
- Peak hour advisory bike lane

- Peak hour advisory bike lane (single-side)
- Sharrow
- Shared zone
- Bus lane with cycling allowed
- Mixed traffic
- Bicyclists dismount
- Pedestrian path/street with cycling not allowed

Note

OSM is volunteered geographic information (VGI) and is therefore prone to tagging errors, which may lead to misclassification on rare occasions. OSM tagging varies geographically, meaning anyone using the pseudocodes verbatim for places outside Australia may need to make modifications to calibrate to local infrastructure.

Authors

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Details

Superclass	Class	Description	OSM extract code	Example
Dedicated bike path	Dedicated bike path	Off-road paths dedicated for bicyclists	'highway' IS IN ['cycleway'] AND 'foot' IS IN ['no'] OR 'highway' IS IN ['path'] AND 'bicycle' IS IN ['yes','designated'] AND 'foot' IS IN ['no']	 https://carryononly.org/cycling-the-upfield-bike-path-in-melbourne-australia/
Shared bike path	Shared bike path	Off-road paths that are shared by bicyclists and pedestrians alike	'highway' IS IN ['cycleway'] AND 'foot' NOT IN ['no']	 https://en.wikipedia.org/wiki/Capital_City_Trail

Pedestrian path/street with cycling allowed	Pedestrian path/street with cycling allowed	Footways and pedestrian streets where bicycling is allowed	'highway' IS IN ['footway','pedestrian'] AND 'bicycle' IS IN ['yes','designated']	 https://www.vicroads.vic.gov.au/safety-and-road-rules/pedestrian-safety/using-shared-paths
Protected bike lane	Protected bike lane	On-road bike lanes that are physically separated and thus protected from motorised traffic via a physical barrier	'highway' NOT IN ['cycleway'] AND ('cycleway' IS IN (['track','opposite_track']) OR 'cycleway:left' IS IN ['track'] OR 'cycleway:right' IS IN ['track'] OR ['cycleway:both'] IS IN ['track'])	 https://twitter.com/MelbourneWay/status/1339795291755610114

Buffered bike lane	Buffered bike lane (road-side)	A buffered bike lane (road-side) is separated from the car lanes with extra space and hashed white paint on the side of the road.	'cycleway:both' IS IN ['lane'] AND ('cycleway:both:lane' IS IN ['exclusive'] OR 'cycleway:left:lane' IS IN ['exclusive']) AND ('cycleway:left:buffer:right' EXISTS OR 'cycleway:both:buffer:right' EXISTS) AND NOT ('cycleway:left:buffer:left' EXISTS OR 'cycleway:both:buffer:left' EXISTS) OR 'cycleway:left' IS IN ['lane'] AND 'cycleway:left:lane' IS IN ['exclusive'] AND 'cycleway:left:buffer:right' EXISTS AND 'cycleway:left:buffer:left' NOT EXISTS	 https://www.melbourne.vic.gov.au/sitecollectiondocuments/bike-lane-design-guidelines.pdf
	Buffered bike lane (kerb-side)	A buffered bike lane (kerb-side) is separated from the car lanes with extra space and hashed white paint on the side of the kerb.	'cycleway:both' IS IN ['lane'] AND ('cycleway:both:lane' IS IN ['exclusive'] OR 'cycleway:left:lane' IS IN ['exclusive']) AND ('cycleway:left:buffer:left' EXISTS OR 'cycleway:both:buffer:left' EXISTS) AND NOT ('cycleway:left:buffer:right' EXISTS OR 'cycleway:both:buffer:right' EXISTS) OR 'cycleway:left' IS IN ['lane'] AND 'cycleway:left:lane' IS IN ['exclusive'] AND 'cycleway:left:buffer:left' EXISTS AND 'cycleway:left:buffer:right' NOT EXISTS	 https://www.melbourne.vic.gov.au/sitecollectiondocuments/bike-lane-design-guidelines.pdf

	Buffered bike lane (both sides)	A buffered bike lane (both sides) is separated from the car lanes and possibly parking spots with extra space and hashed white paint on both sides.	'cycleway:both' IS IN ['lane'] AND ('cycleway:both:lane' IS IN ['exclusive'] OR 'cycleway:left:lane' IS IN ['exclusive']) AND (('cycleway:left:buffer:both' EXISTS OR 'cycleway:both:buffer:both' EXISTS) OR ('cycleway:left:buffer:left' EXISTS OR 'cycleway:left:buffer:right' EXISTS) OR 'cycleway:both:buffer:left' EXISTS OR 'cycleway:both:buffer:right' EXISTS) OR 'cycleway:left' IS IN ['lane'] AND 'cycleway:left:lane' IS IN ['exclusive'] AND (('cycleway:left:buffer:left' EXISTS AND 'cycleway:left:buffer:right' EXISTS) OR 'cycleway:left:buffer:both' EXISTS)	 https://www.flickr.com/photos/philipmallis/49732619551/
Painted bike lane	Painted bike lane	On-road bike lanes that are separated from motorized traffic by a solid white painted line with the lane painted green on occasion. This lane strictly segregates and is reserved exclusively for cyclists.	'highway' NOT IN ['cycleway'] AND ('cycleway' IS IN ['lane','opposite_lane'] OR 'cycleway:left' IS IN ['lane'] OR 'cycleway:right' IS IN ['lane'] OR 'cycleway:both' IS IN ['lane'])	 https://www.carsguide.com.au/car-news/cyclists-should-be-blameless-in-car-accidents-report-33376
	Painted bike lane (single side)	Painted bike lanes on only one side of the road.	'highway' NOT IN ['cycleway'] AND ('cycleway' IS IN ['lane','opposite_lane'] OR 'cycleway:left' IS IN ['lane'] OR 'cycleway:right' IS IN ['lane'] OR 'cycleway:both' IS IN ['lane'])	As above

Advisory bike lane	Advisory bike lane	On-road bike lanes that are separated from motorized traffic by a dashed white painted line. This lane softly segregates and is reserved exclusively for cyclists, so motor vehicles are allowed to use the bike lane.	Infrastructure classified as Painted bike lane OR Painted bike lane (single side) AND ('cycleway:both' IS IN ['lane'] AND ['cycleway:both:lane'] IS IN ['advisory'] OR ['cycleway:left:lane'] IS IN ['advisory']) OR 'cycleway:left' IS IN ['lane'] AND 'cycleway:left:lane' IS IN ['advisory'])	 https://tinyurl.com/4ubv64dh
	Advisory bike lane (single side)	Advisory bike lanes on only one side of the road.	Infrastructure classified as Advisory bike lane AND 'cycleway:left' IS IN ['lane'] AND 'cycleway:right' IS IN ['no'] AND 'cycleway:left:lane' IS IN ['advisory']	As above
Peak hour bike lane	Peak hour painted bike lane	Lanes which are exclusive bike lanes during peak hours.	Infrastructure classified as Painted bike lane AND ('cycleway:both:conditional' EXISTS OR 'cycleway:left:conditional' EXISTS OR 'cycleway:both:lane:conditional' EXISTS OR 'cycleway:left:lane:conditional' EXISTS)	

	Peak hour painted bike lane (single-side)	Peak hour painted bike lane on only one side of the road.	Infrastructure classified as Painted bike lane (single side) AND ('cycleway:both:conditional' EXISTS OR 'cycleway:left:conditional' EXISTS OR 'cycleway:both:lane:conditional' EXISTS OR 'cycleway:left:lane:conditional' EXISTS)	As above
	Peak hour advisory bike lane	Lanes which are advisory bike lanes during peak hours.	Infrastructure classified as Advisory bike lane AND ('cycleway:both:conditional' EXISTS OR 'cycleway:left:conditional' EXISTS OR 'cycleway:both:lane:conditional' EXISTS OR 'cycleway:left:lane:conditional' EXISTS)	
	Peak hour advisory bike lane (single-side)	Peak hour advisory bike lane on only one side of the road.	Infrastructure classified as Advisory bike lane (single side) AND ('cycleway:both:conditional' EXISTS OR 'cycleway:left:conditional' EXISTS OR 'cycleway:both:lane:conditional' EXISTS OR 'cycleway:left:lane:conditional' EXISTS)	As above

Sharrow	Sharrow	Streets without a specific bicycle lane but with sharrows indicating priority to cyclists. Cyclists share a lane with motor vehicles, and there are markings indicating that motorists and cyclists should share this lane.	'highway' NOT IN ['cycleway'] AND 'cycleway' IS IN ['shared_lane'] OR 'cycleway:both' IS IN ['shared_lane'] AND ('cycleway:both:lane' IS IN ['pictogram'] OR 'cycleway:left:lane' IS IN ['pictogram']) OR 'cycleway:left' IS IN ['shared_lane'] AND 'cycleway:left:lane' IS IN ['pictogram'] OR 'cycleway:right' IS IN ['shared_lane'] AND 'cycleway:left' IS IN ['no']	
Shared zone	Shared zone	Shared spaces (usually urban laneways or on major pedestrian shopping roads) with lower speed limits and priority to cyclists and pedestrians.	'highway' IS IN ['living_street'']	 https://www.flickr.com/photos/philipmallis/50591884281

Bus lane with cycling allowed	Bus lane with cycling allowed	Bike lanes taking the form of bus lanes that are also designated for use by cyclists.	'cycleway:both' IS IN ['share_busway','opposite_share_busway'] OR 'cycleway:left' IS IN ['share_busway','opposite_share_busway']	 https://tinyurl.com/2phu8ftv
Shoulder cyclable	Shoulder cyclable	Road shoulders which act as bike lanes	'cycleway:both' IS IN ['shoulder'] OR 'cycleway:left IS IN ['shoulder']	 https://tinyurl.com/z9v63k4a

Bicycling not allowed	Bicyclists dismount	Pedestrian paths or streets where bicyclists cannot ride but have to dismount and walk their bikes.	'bicycle' IS IN ['dismount']	https://www.portplaces.com/riding-in-the-city/
	Pedestrian path/street with cycling not allowed	Pedestrian paths or streets where bicycling is not allowed (most footpaths/sidepaths). Similar to 'bicyclists dismount', however, may not have explicit signage (e.g. most footpaths)	'highway' IS IN ['footway','pedestrian','path'] AND 'bicycle' NOT IN ['yes','designated']	

Mixed traffic	Mixed traffic	Roads without any bicycling infrastructure but cyclists are allowed to ride on.	All links that remain unclassified	https://tinyurl.com/5bc27cv7