

What will Kingston's future AT network look like?



Cycling Facility Types Matrix

This document is for information purposes only. The design of all active transportation facilities in Kingston will be confirmed at the time of implementation

least separation																	more separation																	most separation																
ON-ROAD BICYCLE FACILITIES																	OFF-ROAD BICYCLE FACILITIES																																	
Shared Roadway/ Signed Bike Route		Shared Roadway/ Signed Bike Route with Wide Travelled Lane		Signed Bike Route with Paved Shoulder		Bicycle Lane		Separated Bicycle Lane		Raised Cycle Track		Active Transportation (AT) Path			Off-Road Multi-Use Trail																																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17																																		
Signed Bike Route	Narrow Travel Lane: SLM	Wide Travelled Lane: Signed	Wide Travelled Lane: SLM	Paved Shoulder	Buffered Paved Shoulder	Conventional Bicycle Lane	Buffered Bicycle Lane	Buffered Bicycle Lane with Flex Delineators	Buffered Bicycle Lane with parking	Cycle Track: raised and curb separated	Two Way Cycle Track	One Way AT Path with sidewalk	Two Way AT Path with sidewalk	Shared Use AT Path	Two Way In-Boulevard AT Path	Off-Road Multi-Use Trail																																		
Travel Lane 3.0-4.0 m	Travel Lane 3.0-4.0 m	Travel Lane 4.0-4.5 m	Travel Lane 4.0-4.5 m	Travel Lane 3.0-3.75 m Paved Shoulder 1.2-1.5 m 0.5 m	Travel Lane 3.0-3.75 m Buffer 1.0 m Bicycle Operating Space 1.5 m 2.0 m	Travel Lane 3.0-3.75 m 1.5-1.8 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.5-1.8 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.5-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.5-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.5-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.5-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.8-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.8-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.8-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.8-2.0 m Blvd 0.3 m gutter	Travel Lane 3.0-3.75 m 1.8-2.0 m Blvd 0.3 m gutter																																		
Minimum Design Specifications	Travel lane widths (TAC Standards): o Minor arterial: 3.5 m o Collector (residential): 3.0 m o Collector (industrial/commercial): 3.7 m	Travel lane widths: Where travel lane less than 4.0 m and the posted speed limit is 50 km/h or less, the stencils should be placed in the centre of the travel lane to allow single file bicycle and vehicle operations.	Travel lane widths: o 4.0 m o greater than 3,000 ADT/lane o less than 60km/h o 6-12% trucks	Markings should be placed 1.0 m from face of curb (or shoulder edge) on streets without on-street parking.	Minimum width: 1.5 m For partially paved shoulders, the gravel portion should not be less than 0.5 m wide. If the gravel portion is less than 0.5 m wide then the entire shoulder should be paved.	Recommended width: 1.5 m 1.5 m minimum width	1.5 m minimum width 0.5 m minimum buffer zone width	1.5 m minimum width 0.5 m minimum buffer zone width	1.5 m minimum width 0.8 m minimum buffer zone width	1.5 m minimum width 2.0 m width	1.5 m minimum width 4.0 m width	3.0 m minimum width to allow for passing Striped centre line to separate traffic.	1.8 m minimum width to allow for passing Sly distance of 5.0 cm suggested between cycle track and sidewalk	3.0 m is the minimum desired standard in most situations. Should be separated from the roadway with a 1.5 m buffer or a physical barrier	3.0 m is the minimum desired standard in most situations. Should be separated from the roadway with a 1.5 m buffer or a physical barrier	3.0 m is the minimum desired standard in most situations. Should be separated from the roadway with a 1.5 m buffer or a physical barrier	3.0 m is the minimum desired standard for bi-directional travel.																																	
Preferred Design Specifications	Travel lane widths (TAC Standards): o Minor arterial: 3.7 m o Collector (residential): 3.7 m o Collector (industrial/commercial): 3.7 m	Should not be placed on roadways with a speed limit over 50 km/h for single file applications. "Shared Use Lane Single File" sign may be used in conjunction with Bike Route Sign when the travel lane is less than 4.0 m.	Travel lane widths: o 4.5 m o less than 3,000 ADT/lane o less than 6% trucks	Should not be placed on roadways with a speed limit over 60 km/h for side-by-side applications. "Share The Road" signs should be provided.	The preferred minimum width is 1.5 m wide. Increase width based on speed and vehicle composition: See option 6 if posted speed > 80 km/h at 3000 AADT	The preferred minimum width is 2.0 m wide (shoulder); 0.5 m (buffer) Increase width based on speed and vehicle composition: o 2.5m wide shoulder (1.5m bicycle operating space and 1.0m buffer) for a posted speed > 80km/h and 9000 AADT	Increase width based on speed and vehicle composition: consider options 8-10 if: o Over 6000 AADT, or if trucks > 10% of traffic volumes o Speeds > 100 km/h	Guidelines for buffer width varies: o 80 cm (London and Brussels) o 50-75 cm (CROW Guide) o 183 cm (Portland, OR)	Guidelines for buffer width varies: o 80 cm (London and Brussels) o 50-75 cm (CROW Guide) o 183 cm (Portland, OR)	Guidelines for buffer width varies: o 80 cm (London and Brussels) o 50-75 cm (CROW Guide) o 183 cm (Portland, OR)	2.0 m width Innovative bicycle-friendly design needed at intersections to reduce conflicts between turning motorists and cyclists. Pavement markings should indicate direction	4.0 m width Innovative bicycle-friendly design needed at intersections to reduce conflicts between turning motorists and cyclists.	2.0 m width Innovative bicycle-friendly design needed at intersections to reduce conflicts between turning motorists and cyclists.	4.0 m or greater - recommended for heavy use situations with high concentrations of multiple users.	4.0 m or greater - recommended for heavy use situations with high concentrations of multiple users.	4.0 m or greater is the preferred design specifications.	4.0 m or greater - recommended for heavy use situations with high concentrations of multiple users.																																	
Typical Criteria	Travel lane minimum width: 3.0 m for low volume streets (less than 3,000 ADT) with little or no truck or bus traffic. "Share the Road" signs are recommended	These markings are often used on streets where dedicated bicycle lanes are desirable but are not possible due to physical or other constraints.	4.0-4.5 m wide lanes Lanes should be sufficiently wide to allow motor vehicles to pass cyclists without encroaching on an adjacent travel lane.	These markings are often used on streets where dedicated bicycle lanes are desirable but are not possible due to physical or other constraints. Facilities are typically used by experienced commuters rather than inexperienced riders.	Shoulder bikeways are appropriate bicycle facilities on rural roads with a large shoulder and where there is no curb and gutter. Inclusion of the buffer makes these facilities more accessible for less experienced and new riders.	Most appropriate on urban arterial and collector streets where higher traffic volumes and speeds warrant user separation.	Designed to increase the space between the bicycle lanes and the travel lane or parked cars.	Designed to increase the space between the bicycle lanes and the travel lane or parked cars.	Use along roadways with high motor vehicle volumes and/or speeds (>50 km/h). Best on streets with parking lanes with a high occupancy rate	Use along roadways with high motor vehicle volumes and/or speeds (>50 km/h). Where cyclists may enter/leave, or where motorists cross at a driveway, the curb should be rolled with a small 45 degree ramp	Desirable when there are more destinations on one side of a street or if the cycle track will connect to a shared-use path or bicycle facility on one side of the street.	Use along roadways with high motor vehicle volumes and/or speeds	Recommended for areas with high volumes of pedestrian and bicycle traffic to reduce conflict.	Ideal for families and recreational users. Suggested when on-road improvements are not feasible along roadways, and when ample ROW is available.	Ideal for families and recreational users. Suggested when on-road improvements are not feasible along roadways, and when ample ROW is available.	Ideal for families and recreational users. Suggested when on-road improvements are not feasible along roadways, and when ample ROW is available.	Ideal for families and recreational users.																																	
References	OTM Book 18: Bicycle Facilities TAC Geometric Design Guide for Canadian Roads Chapter 3: Bicycles; Section 3.4.3.1. Widths are discussed in section 3.4.6.2.	OTM Book 18: Bicycle Facilities TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings AASHTO Guide for the Development of Bicycle Facilities	OTM Book 18: Bicycle Facilities TAC Geometric Design Guide for Canadian Roads Chapter 3: Bicycles; Section 3.4.3.1. Widths are discussed in section 3.4.6.2.	OTM Book 18: Bicycle Facilities TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings NACTO Urban Bikeway Design Guide AASHTO Guide for the Development of Bicycle Facilities	OTM Book 18: Bicycle Facilities TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings AASHTO Guide for the Development of Bicycle Facilities	OTM Book 18: Bicycle Facilities TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings AASHTO Guide for the Development of Bicycle Facilities	OTM Book 18: Bicycle Facilities TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities City of Portland, OR (2010). Bicycle Master Plan for 2030. Bikeway Design Best Practices.	OTM Book 18: Bicycle Facilities City of Portland, OR (2010). Bicycle Master Plan for 2030. Bikeway Design Best Practices.	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide	OTM Book 18: Bicycle Facilities CROW Design Manual for Bicycle Traffic. NACTO Urban Bikeway Design Guide																																
In Constrained Corridors	Alert motorists to the presence of cyclists.	Encourage bicyclists to ride an appropriate distance away from the "door zone" on streets with parking.	"Share the Road" signs can be added to increase driver awareness.	Markings can be as little as added to the curb on streets without on-street parking.	If available width is less than 50% of the desirable bicycle lane width, AASHTO allows striping the shoulder in lieu of bike lanes.	In constrained corridor, see Option 5.	1.2 m acceptable where road width is limited; not suitable for roads with high ADT's and commercial vehicles.	1.2 m bike lane is acceptable (in corridors where there is no gutter).	1.2 m bike lane is acceptable (in corridors where there is no gutter).	1.5 m bike lane is acceptable.	Change in level clearly demarcates space for different users and reduces conflicts between bicyclists and pedestrians.	Parking should be banned on the side of the street with the cycle track to ensure adequate site distances for motorists crossing the path.	Change in level and planted buffer clearly demarcates space for different users and reduces conflicts between bicyclists and vehicles.	3.0 m is the minimum allowed for a two-way shared-use facility and is only recommended for low traffic situations.	3.0 m is the minimum allowed for a two-way shared-use facility and is only recommended for low traffic situations.	3.0 m is the minimum allowed for a two-way shared-use facility and is only recommended for low traffic situations.	Typically incorporated into parkland and valley land. Cyclists may choose to remain in the roadway.																																	