

5.5 RAILWAY CROSSINGS

Railway crossings present risks for pedestrians and cyclists. Therefore, extra caution should be applied to assure their safe operation. In addition to standard pavement markings, rubber track guards are also recommended to improve friction between bike and wheelchair tires and the pavement, and also to narrow the rail gaps. Pavement crossing surfaces should be paved, and inspected regularly during road inspections for signs of deterioration around the tracks. Pavement deterioration adjacent to railway tracks can be a potential hazard, especially to those using mobility aids or devices, pushing strollers, or on bike, since wheels could get caught in the rails.

Details of requirements for barriers and gates for at-grade crossings can be found in Transport Canada's *Grade Crossings Regulations* and *Grade Crossings Standards*.

Crossings of railways should be designed close to right angles, both to enhance visibility and to prevent wheels getting caught in rails. In many situations, achieving this design may require widening in advance of the crossing, thereby allowing cyclists and pedestrians to reduce their speed and position themselves for crossing at right angles. Note that for extremely skewed rail crossings, it may be impractical to achieve a 90° crossing, and doing so may have unintended consequences as the reversing curves may be too sharp. In these instances, widening to 60° is sufficient.

The following series of exhibits illustrate jughandle design concepts for a widening to permit crossing at right angles for the following facilities:

- Dedicated Bikeway with Sidewalk
- Separated Bikeway with Sidewalk
- Multi-use Facility

Where the crossing is oriented such that a jughandle is not needed, similar pavement markings as shown in these examples will apply, save for markings and signage that are specific to the jughandle itself.



Jughandle Design at Rail Crossing – Dedicated Bikeway with Sidewalk

Minimum	Preferred
<p>1 'Railway Crossing Ahead' signage (Wc-4 – OTM) should be applied upstream of the crossing in accordance with OTM Book 6 requirements</p>	<p>A AODA – compliant ramps and tactile plates can be placed in advance of the crossings (1.8 m – light rail; 3.9 m – freight rail; measured to centerline of nearest rail). Although the use of tactile warning plates at rail crossings is not specifically referenced in current AODA standards, best practices in pedestrian safety for at-grade rail crossing suggest that they are an important element for accessibility. It is preferred to include a 1200 mm level area adjacent the tactile plate.</p>
<p>2 'Automobiles and Motorcycles Prohibited Sign' (RB-89 - TAC) should be applied at the beginning of the jughandle.</p>	<p>B Railing for channelizing pedestrians to prevent unauthorized crossing, as needed</p>
<p>3 'X' Crossing pavement marking for cyclists, with its centre 9 m downstream of the railway crossing sign</p>	
<p>4 Double stop bar for cyclists set back 4.5 m from the centerline of the nearest rail</p>	
<p>5 Gore area should be marked per OTM Book 11, with 45-60 cm white chevrons spaced at 3-6 m (p. 129)</p>	
<p>6 Rail crossing sign or warning device as required by Transport Canada regulations. A sidewalk, path or trail with a centre line more than 3.6 m from the centre of a vehicular warning device must have separate warning devices for each direction of travel for new crossings (refer to Transport Canada Grade Crossings Standards for details.)</p>	
<p>7 Rubber (or similar) crossing pad to improve crossing surface extended 0.5 m or more beyond facility</p>	

Exhibit 5-37. Jughandle Design for a Dedicated Bikeway with Sidewalk

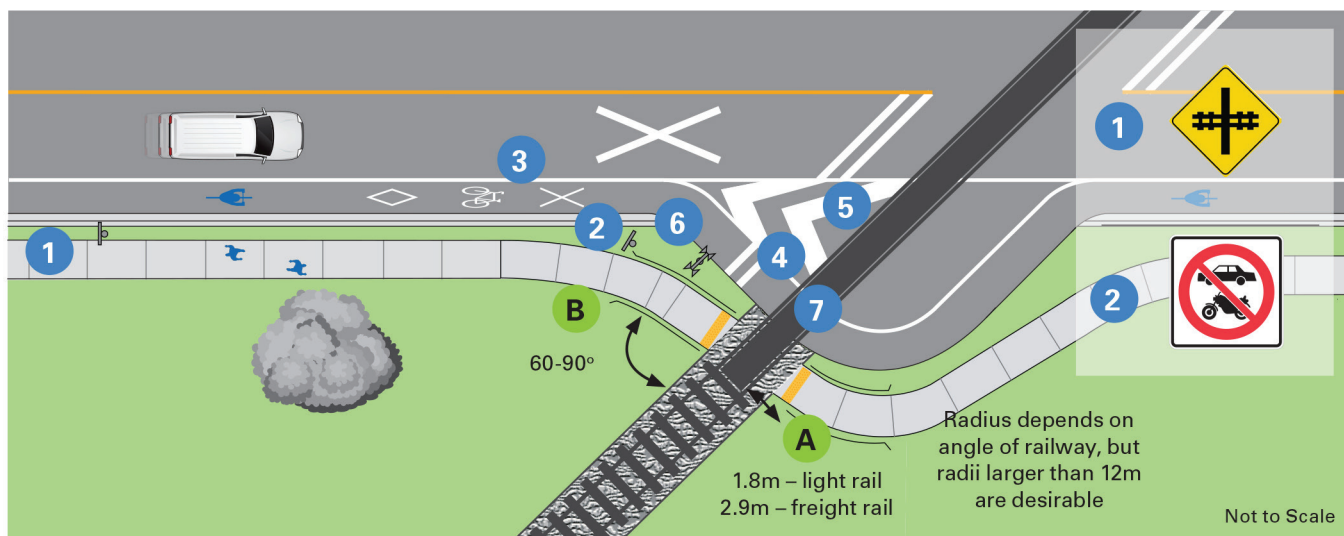


Exhibit 5-38. Jughandle Design for a Dedicated Bikeway with Sidewalk



Source: Cape Breton Regional Municipality

Jughandle Design at Rail Crossing – Separated Bikeway with Sidewalk

Minimum	Preferred
<div>1</div> <div>'Railway Crossing Ahead' signage (Wc-4 – OTM) should be applied upstream of the crossing in accordance with OTM Book 6 requirements</div>	<div>A</div> <div>AODA – compliant ramps and tactile plates can be placed in advance of the crossings (1.8 m – light rail; 3.9 m – freight rail; measured to centerline of nearest rail). Although the use of tactile warning plates at rail crossings is not specifically referenced in current AODA standards, best practices in pedestrian safety for at-grade rail crossing suggest that they are an important element for accessibility. It is preferred to include a 1200 mm level area adjacent the tactile plate.</div>
<div>2</div> <div>'X' Crossing pavement marking for cyclists, with its centre 9 m downstream of the railway crossing sign</div>	
<div>3</div> <div>Double stop bar for cyclists set back 4.5 m from the centerline of the nearest rail</div>	
<div>4</div> <div>Rail crossing sign or warning device as required by Transport Canada regulations. A sidewalk, path or trail with a centre line more than 3.6 m from the centre of a vehicular warning device must have separate warning devices for each direction of travel for new crossings (refer to Transport Canada Grade Crossings Standards for details.)</div>	<div>B</div> <div>Railing for channelizing pedestrians to prevent unauthorized crossing, as needed</div>
<div>5</div> <div>Rubber (or similar) crossing pad to improve crossing surface extended 0.5 m or more beyond facility</div>	

Exhibit 5-39. Jughandle Design for a Dedicated Bikeway with Sidewalk

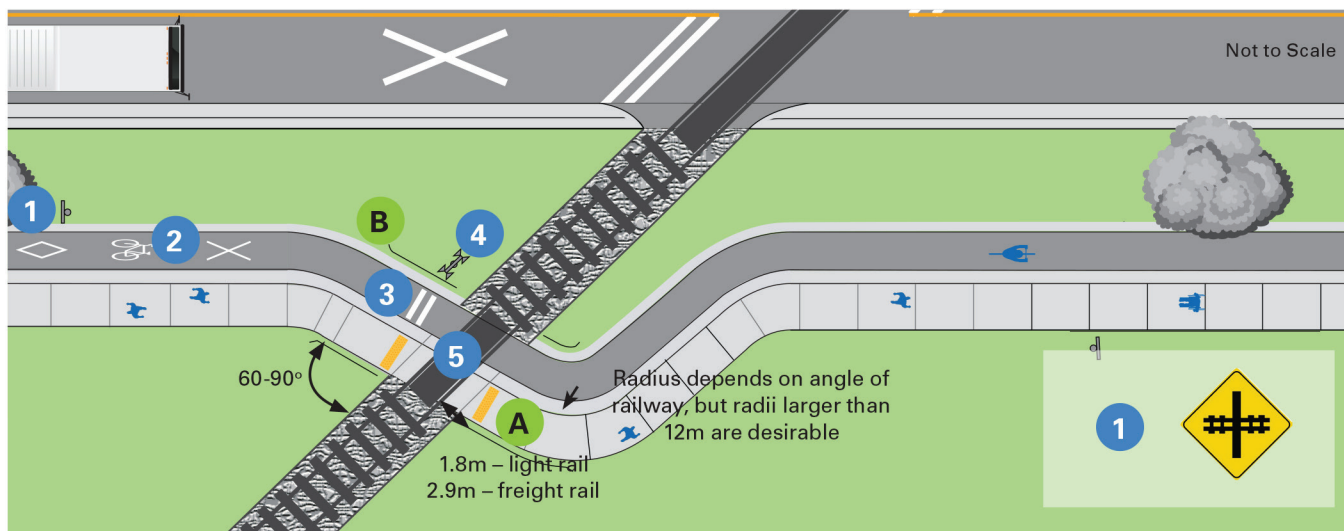
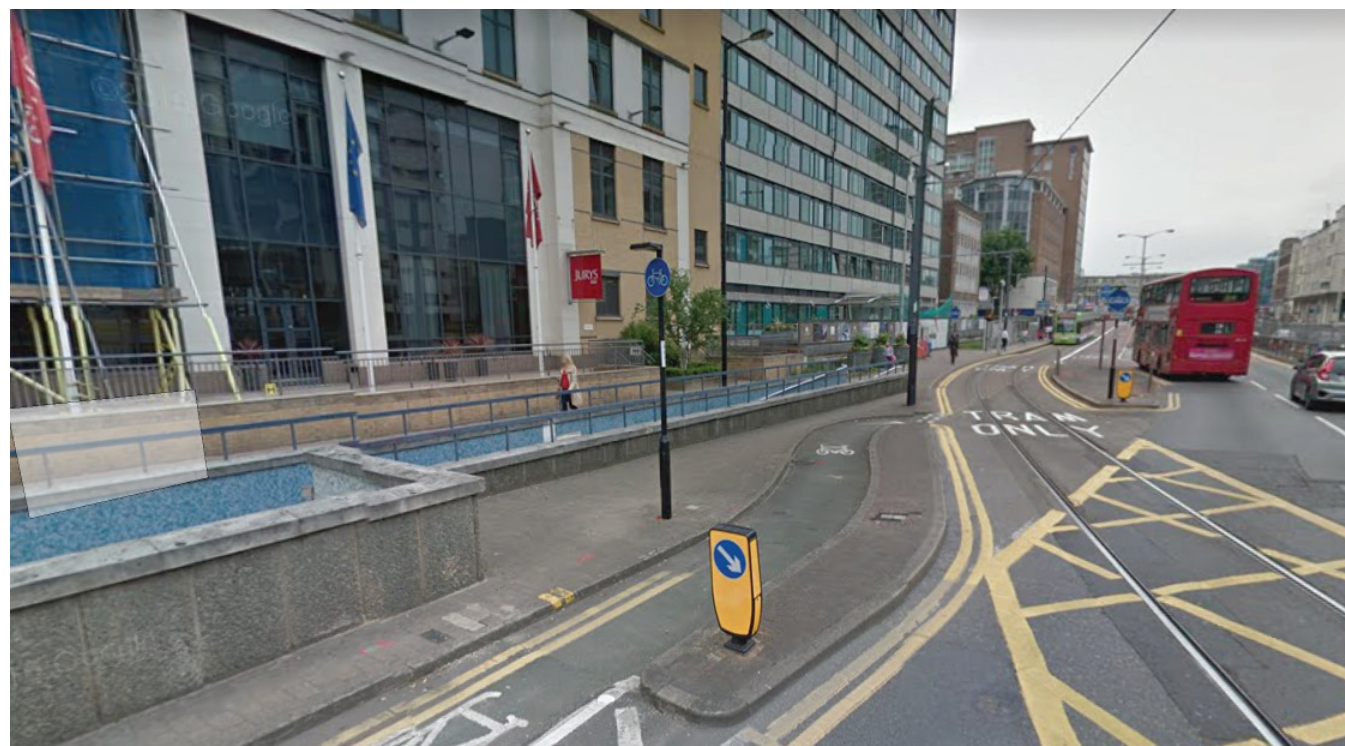


Exhibit 5-40. Jughandle Design with Separated Bikeway in London



Source: Google

Jughandle Design at Rail Crossing – Multi-use Facility

Minimum

- 1 'Railway Crossing Ahead' signage (Wc-4 – OTM) should be applied upstream of the crossing in accordance with OTM Book 6 requirements.
- 2 Rail crossing sign or warning device as required by Transport Canada regulations. A sidewalk, path or trail with a centre line more than 3.6 m from the centre of the vehicular warning device must have separate light units for each direction of travel for new crossings (refer to Transport Canada Grade Crossings Standards for details.)
- 3 A yellow dividing line should be applied to the multi-use path approaching the intersection to slow users
- 4 Rubber (or similar) crossing pad to improve crossing surface extended 0.5 m or more beyond facility

Preferred

- A** AODA – compliant ramps and tactile plates can be placed in advance of the crossings (1.8 m – light rail; 3.9 m – freight rail; measured to centerline of nearest rail). Although the use of tactile warning plates at rail crossings is not specifically referenced in current AODA standards, best practices in pedestrian safety for at-grade rail crossing suggest that they are an important element for accessibility. It is preferred to include a 1200 mm level area adjacent to the tactile plate.
- B** Railing for channelizing pedestrians can be used to prevent unauthorized crossing, as needed
- C** Optional ‘RAIL X-ING’ pavement marking can be applied to the path

Exhibit 5-41. Jughandle Design for a Multi-use Facility

