

Executive Summary

Within the city of Kingston, ON, the Princess, Concession, and Bath (PBC) intersection is a high traffic intersection and an important node for both local residents and daily commuters. Prior to the 1970's, the intersection was the site of Kingston's largest traffic circle. However, the traffic circle was removed in order to increase the traffic capacity of the intersection. This report provides an analysis of the design and use of the current intersection and recommends the installation of a modern roundabout. Figure A illustrates the design of the existing intersection and the maximum diameter of a potential roundabout. Figure B illustrates the proposed design.

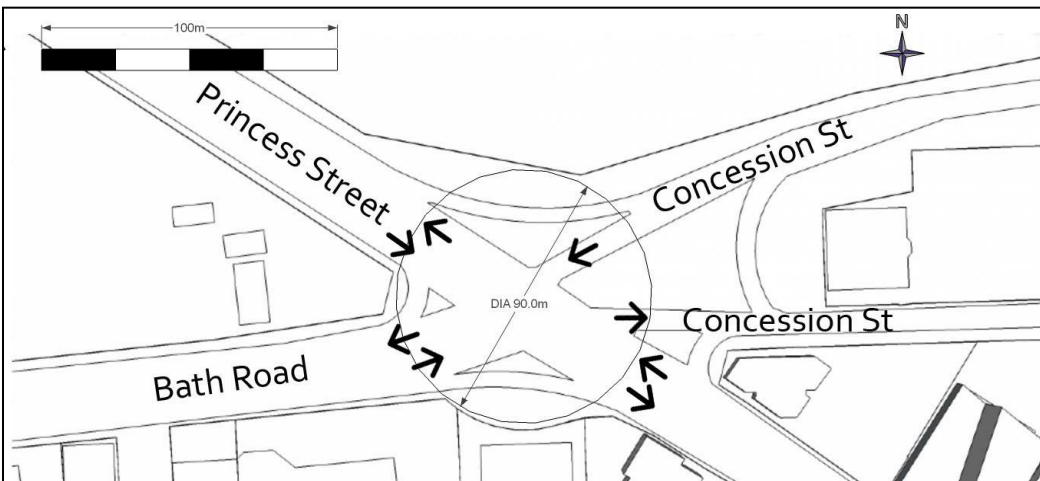


Figure A. Existing Intersection design

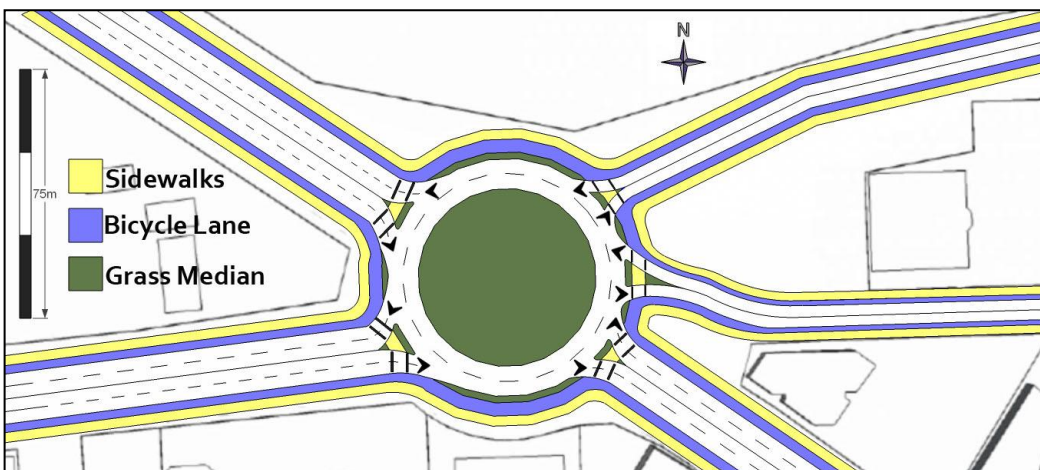


Figure B. Proposed Intersection design

This report uses a *Context Sensitive Design (CSD)* approach, a relatively new method of street design that considers the surrounding context, e.g., types of land uses, patterns of pedestrian/cyclist usage, as well as the transportation demands to determine an appropriate design. The CSD approach helped to evaluate the existing intersection and the proposed design in terms of two important areas: the ability to meet all road users' needs and the ability to meet the City's future goals. The evaluation matrix, shown in Table A, identified the proposed design as the stronger candidate of the two.

Table A. Comparative Evaluation of Existing and Proposed Designs

Road Users	Intersection Design Feature(s)	Ability to Meet User Needs		Ability to Meet City Goals	
		Existing Design	Proposed Design	Existing Design	Proposed Design
Pedestrian Accommodation	Crosswalk Length	1	2	1	2
Cyclist Accommodation	Cycling Lane	0	2	0	2
Motorist Accommodation	Quantity of Vehicle Lanes	2	1	2	2

Legend: 0 = **Inadequate**, 1 = **Somewhat Adequate**, 2 = **Adequate**

The comparative evaluation illustrated that the proposed design outperformed the existing design both in terms of its ability to meet road users’ needs and its ability to meet City goals. Table B illustrates the strengths of the proposed design as identified in the report’s Analysis Chapter.

Table B. Strengths of Proposed Roundabout Design

Ability to Meet Road Users Needs

- Shorter Crosswalks than existing design
- Presence of cycling facilities separated from vehicle traffic
- Sufficient vehicular capacity to handle existing traffic demands

Ability to Meet City Goals

- Enhances pedestrian environment through reduced vehicle speeds and shorter crossings
- Improves cycling facilities and acts as node for cycling network
- Incites fewer car trips and improves balance between vehicle, pedestrian, and cyclist traffic

The report concludes that the proposed design would be a feasible alternative to the existing intersection and provides some concrete policy recommendations for the planning of further roundabouts in the city and the installation of a roundabout at the PBC intersection.

Policy Recommendations

- 1. Include Roundabout Design Guidelines in Planning Documents, such as the Kingston Transportation Master Plan (KTMP).**
- 2. Identify other intersections within Kingston which would be good candidates for roundabout installation.**
- 3. Ensure extensive public education and consultation on roundabout usage and safety well in advance of construction.**

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