

ASSESSING THE BICYCLE COMPATIBILITY OF PRINCESS STREET IN KINGSTON, ONTARIO:
EVALUATING THE PHYSICAL ENVIRONMENT AND ROADWAY CHARACTERISTICS OF THE STREET

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EXECUTIVE SUMMARY

OVERVIEW

Cycling offers a healthy, cost-effective, and equitable way to improve the sustainability of urban transportation systems and build more livable cities (Pucher & Buehler 2013). However, for a bicycle to be useful for transportation, cyclists need adequate route infrastructure and supportive amenities. In the 1890's when cycling first gained popularity, better paved roads was the chief need of cyclists (Jacobsen *et al* 2009). While pavement quality still contributes to the overall quality of a cycling facility today, it is the fast and heavy motor vehicle traffic that now primarily restricts cyclists' ability to get places safely (Jacobsen *et al* 2009). New and creative measures are now being taken to ensure that cyclists can travel without encountering conflict with motor vehicles. A crucial factor in determining whether or not to ride a bike is safety, both real and perceived.

The objective of this report is to assess the physical attributes of the street and streetscape, quality of design and the general built environment on Princess Street and how these elements contribute to making the street compatible with cycling.

METHODOLOGY

Two qualitative research methods were used to collect the information required for this study: systematic self-observation supplemented with a literature review. Princess Street was examined in two sections: 1) Upper Princess (between Bath Road/Concession Street and Division Street) and 2) Lower Princess (between Division Street and Ontario Street) using the *Bicycle Road Safety Audit Guidelines and Prompt Lists* published by the U.S. Department of Transportation Federal Highway Administration (May 2012) in order to address the objective.

CONCLUSIONS & RECOMMENDATIONS

Upper Princess Street

Generally, there may be greater opportunities to make Upper Princess Street more bicycle-friendly. This may be due in part to the wider right-of-way and relatively sparse commercial development, where the additional width provides cyclists with adequate space to share the road with vehicles. Furthermore, given that the on-street parking lane is underutilized, this provides a buffer of space between the curb and the active lane of travel where a bicycle may operate. Upper Princess Street is of level grade, aligned straight and has only one significant change in geometry at the transition area west of MacDonnell Street, where an unsignalized pedestrian crossing is located. Lastly, streetscape elements and cycling-supportive amenities are few and far between on this section of Princess Street.

RECOMMENDATIONS:

- 1) Develop a plan to install bike racks at appropriate intervals and locations.

- 2) The City of Kingston should undertake a study to investigate the feasibility of removing on street parking in order to provide bicycle lanes on Princess Street.
- 3) Install “Share the Road” signage and “sharrows” at regular intervals to remind drivers of the presence of cyclists on this route.
- 4) Ensure signal timing is aligned with cyclist movements.
- 5) Resurface Princess Street through the removal of existing asphalt and application of new paving material.
- 6) Provide a curb cut for cyclists to traverse the pedestrian crossing area west of MacDonnell Street safely.

Lower Princess Street

Generally, there may be fewer opportunities to incorporate on-road cycling infrastructure on this section of Princess Street, given the short setbacks of the commercial businesses from the street. On-street parking

for this section of the street is heavily used and the presence of parked cars can be perceived as both a benefit and a detriment to cyclists. Sections of Lower Princess Street are level, while the section between Clergy and Wellington Streets is steep in the direction of travel. The steep downward slope, combined with short blocks, may be a hazard to cyclists as signalized intersections are frequent and stopping on a hill poses difficulty to cyclists. Streetscape elements such as benches, trash receptacles and human-scale lighting are present and add to the pleasant atmosphere on the street. Finally, the City has installed post-and-ring bike racks at frequent intervals, making it easy to find bike parking.

RECOMMENDATIONS:

- 1) The City of Kingston should undertake a study to determine if on street parking on one side of the street could be removed to make way for a bike lane.
- 2) Install “Share the Road” signage and “sharrows” at regular intervals to remind drivers of the presence of cyclists on this route.
- 3) Resurfacing is required between Bagot and Wellington Streets.
- 4) Install two bike boxes at the Division Street and Princess Street intersection