Photomapping Winter Cyclists' Experiences to Improve Winnipeg's Bikeable Infrastructure

Master of City Planning Capstone 2025 **Max Neustaedter, BEnvSt (Hons)** Instructor: Dr. Rae Bridgman Internal Advisor: Dr. Orly Linovski External Advisor: Anders Swanson

University of Manitoba | Faculty of Architecture, Department of City Planning

INTRODUCTION

This research sought to understand the perspectives of winter cyclists in Winnipeg by engaging participants in photography, to capture their positive and negative perceptions of what it is like to cycle during winter in Winnipeg. Based on discussions with eight winter cyclists, this capstone presents strategies and recommendations to mitigate challenges that winter cyclists experience in Winnipeg.

PARTICIPATORY PHOTO MAPPING

This research has the potential to inform policy makers and decision makers by sharing the experiences of winter cyclists. By using a bottom-up approach to inform infrastructure policy, the intent is for this capstone to keep the wheels rolling on the importance of planning for types of transportation besides cars, and to encourage Winnipeggers to live an active lifestyle year-round. Eight winter cyclists were recruited to take photographs of their experiences winter cycling. These images were then mapped on the Participant Photo Map, spatially showing examples of where challenges exist. This attempts to inspire infrastructure change using the voices of people who are committed to using Winnipeg's cycling infrastructure year-round.

PARTICIPANTS

Experience ranges from 2 to 20 years of winter cycling. Cyclists bike 2.5-6 times a week during the winter. 7/8 cyclists' main purpose is commuting. 3/8 cyclists are female, 5/8 are male. All cyclists are of European origin. 5/8 cyclists have a household income of 100,000+. 6/8 cyclists are employed full time.

RESEARCH QUESTIONS

The following questions were used to guide this research:

1. *How can the experiences of winter cyclists in Winnipeg contribute to the Improvement of cycling infrastructure for winter use?*
2. *To what extent do winter cyclists' suggestions for improving Winnipeg's winter cycling infrastructure align with previously published recommendations?*
3. *Where could the participants' suggestions be implemented in Winnipeg?*

METHODS

Eight cyclists were recruited to do participatory photo mapping, a research method that engages members of the public by asking them to take photographs in response to a prompt. Participants were asked to take ten to twenty photos during a bike ride in January 2025 in response to this prompt: ***"Pause to take photographs during a winter bike ride: take photos of high-quality and low-quality aspects of the places that you bike during winter."*** Photos taken were then used in semi-structured interviews to discuss the positive and negative experiences that participants have had winter cycling in Winnipeg. Inductive coding was used to develop categories describing the rides and the positives and negatives, informing the findings. In context with winter cycling literature, best practices, and guided by the desires of participants, four recommendations were developed addressing how and where winter cycling in Winnipeg could be improved.

KEY FINDINGS

CONTEXT FOR PARTICIPANTS' RIDES:

6/8 cyclists said their ride was typical. 3/8 cyclists bike because it is better than owning another vehicle. 3/8 cyclists described that they enjoy biking and experiencing nature. 4/8 cyclists said it helps them be active. Cyclists identified that photos represent challenges well, but some aspects of the challenges faced cannot be captured in photos alone.

HIGH-QUALITY ASPECTS:

8/8 cyclists emphasized at least one positive aspect of their ride. For example:

- C1/C4 – rapid transit multi-use path.
- C3 – separated cycling infrastructure.
- C2/C5 – cycling near rivers.
- C7/C8 – great commuting route.
- C6 – park bike indoors at work.

LOW-QUALITY ASPECTS:

8/8 cyclists mentioned low-quality aspects of their experiences winter cycling in Winnipeg. Through analysis, these challenges led to the identification of three strategies to improve winter cycling infrastructure. They are 1. Reducing conflicts by increasing user equity on roads, 2. Improving snow clearing, and 3. Increasing access to the cycling network.

ⓘ CONFLICTS WITH MOTORISTS

- Cyclists and motorists consider "share the road" differently.
- 5/8 cyclists said motorists often do not give adequate space while passing. 3/8 cyclists discussed concerns about speed of traffic.
- 6/8 cyclists expressed that navigating intersections is harder in winter.
- Three main issues: illegal driving habits, entering intersections, merging into traffic to avoid snow.

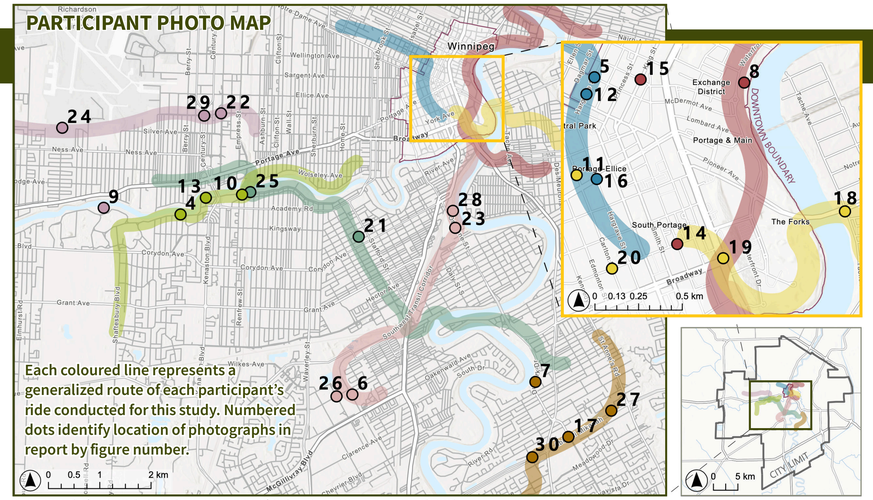
✳ LACK OF SNOW CLEARING

- 6/8 cyclists directly expressed concern over snow clearing.
- 6/8 cyclists described the challenge of navigating "*snirt*."
- 4/8 cyclists said their path is often blocked by a large snow drift.
- 8/8 cyclists desire for snow clearing to be more effective in Winnipeg, as current methods leave cyclists with uncertainty.

≠ NETWORK ISSUES AMPLIFIED BY WINTER

- 6/8 cyclists commented on the lack of a complete network.
- 4/8 cyclists shared how there are sections of the cycling network that end abruptly and do not have adequate signage.
- 2/8 cyclists noted that there are sections that are too dark at night to feel comfortable using.

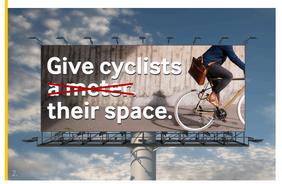
Snirt: a highly unstable combination of snow and dirt (figure 20).



RECOMMENDATIONS

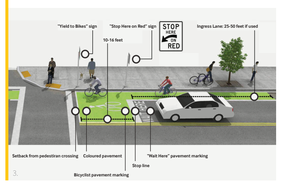
ADAPT EDUCATION

Across the city, education can be adapted to change the perception of motorists towards winter cyclists. This could be done through promotional signage, and adapting the content for Driver's Education in Manitoba.



IMPLEMENT BIKE BOXES

Bike boxes with an advance green light can be introduced ***downtown*** to increase safety for cyclists by reducing conflict with traffic. This allows cyclists to be visible and have a head start accelerating on slippery surfaces.

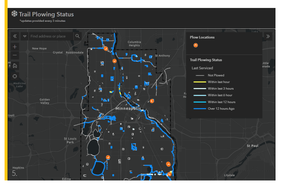


UPDATE ROAD SIGNAGE

Road signage can be updated on ***commuter routes***, permitting full lane use, solidifying cyclists' right to ride in the cleared tire track left by vehicles. Updating signage helps show that cyclists are an equal user of the road.

IMPROVE COMMUNICATION

The City can provide an ***online*** live snow clearing map of the cycling network. This could decrease the uncertainty that winter cyclists have in the City's snow clearing capabilities and make route planning easier.



CONCLUSION

As participants described challenges related to safety, snow, infrastructure, and the cycling network, the majority of barriers identified in the literature were found to be true. The cyclists' suggested solutions include many components that align with previously published recommendations for winter cycling. The recommendations identify possible areas for change in Winnipeg to improve bikeable infrastructure.

To see change, Winnipeg must experience a societal shift, moved forward through infrastructure design, and rooted in education and political advocacy.

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Presented April 23, 2025

1. SportsCover Direct (2025). *Dangers of road biking in winter.* Starpeak Insurance Solutions Limited. https://www.sportscoverdirect.com/acd-blog/road-biking-in-winter/
2. PowerPoint (2025). Stock images.
3. National Association of City Transportation Officials (2014). *Urban Bikeway Design Guide* (1st ed. 2014). Island Press/Center for Resource Economics. https://doi.org/10.5822/978-1-61091- 582-3
4. Coalition of Arizona Bicyclists. (2015). *Overtaking Bicycles and Arizona's Three Foot Law.* Coalition of Arizona Bicyclists. Accessed February 24, 20205, from https://www.cazbike.org/overtaking-bicycles-and-arizonas-three-foot-law/
5. Minneapolis Park and Recreation Board. (2025). *Winter Maintenance.* Minneapolis Park and Recreation Board. Accessed March 16, 2025, from https://www.minneapolisparks.org/park- care-improvements/maintenance/winter_maintenance/