2015 CYCLING INFRASTRUCURE REPORT

UNIVERSITY OF SASKATCHEWAN | sustainability.usask.ca

EXECUTIVE SUMMARY

This report summarizes the recommendations for improving cycling infrastructure at the University of Saskatchewan. This report is a follow-up to the recommendations made in the 2013 Sustainability Mobility Strategic Plan.

The results were determined through consultation with various stakeholders including the Campus Cycling Club, Saskatoon Cycles, Grounds (FMD), and members of the cycling community at the University of Saskatchewan. In addition, best practices from universities from around Canada and the United State were researched to determine the best approaches.

The primary challenges identified are:

- Cyclist access to campus crossing College Drive
- Congestion in the bowl including pedestrian-cyclist conflicts
- A lack of affordable secure bike parking on campus

The final recommendations are:

- Install additional bicycle racks near the Arts building, Geology building, and College Quarter
- Purchase bicycle cages to satisfy the demand for affordable secure bicycle parking
- Install signs in high-traffic area to reduce pedestrian/cycling conflicts
- Install a dedicated bicycle path on Cumberland Avenue

TABLE OF CONTENTS

The 2015 Cycling Infrastructure Report was prepared by the University of Saskatchewan Office of Sustainability

We thank the campus community who provided input for this report.

1.0 INTRODUCTION

The University of Saskatchewan has made a commitment in the Sustainability Mobility Strategic Plan[1] to increase the modal share of sustainable transportation. Sustainable transportation is defined as non-single occupancy vehicle transportation. In 2013 73.7% of the University of Saskatchewan population commuted to campus in a sustainable manner. The University has committed to increase that figure to 78.1% in 2018. The principle goal of the Sustainable Mobility Strategic Plan is to

"Increase the quality of and use of sustainable mobility options (public transit, carpooling, cycling, and walking) for travel to, from and within the campus."

- Sustainability Mobility Strategic Plan, 2013

While the sustainable modal share for students is expected to increase, a far greater emphasis for strategies and improvements are placed on staff and faculty. Figure 1 shows the anticipated modal share change from 2013-2018.

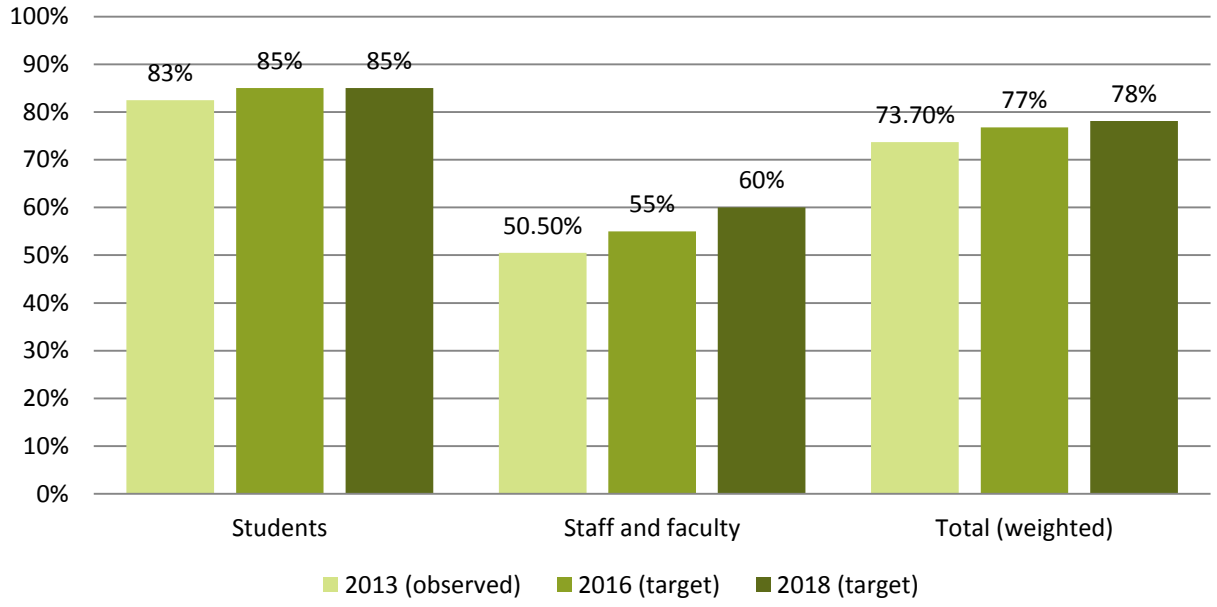


Figure 1 Modal Share of Sustainable Travel To/From Campus

Cycling is an important part of sustainable transportation and cycling infrastructure can help promote cycling. This report looks at improvements to campus cycling infrastructure that will addresses the current issues with campus cycling and increase the cycling modal share.

This report summarizes the recommendations, made by the Office of Sustainability for improving cycling infrastructure at the University of Saskatchewan.

[1] Sustainability Mobility Strategic Plan, 2013

2.0 State of Campus Cycling

The Sustainability Mobility Strategic Plan states that 1.5% of students and 3.5% of staff cycle to campus.

2.1 Bike to Work Day Survey

On June 24th 2015, the cycling community of Saskatoon ran their third annual Bike to Work Day. This event intended to encourage cycling in the Saskatoon community. Snacks, coffee, educational tools, and prizes were offered at fifteen stations throughout the City. 330 cyclists past by the station located on the north-west corner of Wiggins Avenue and College Drive, which served as the University of Saskatchewan station. This is an increase over the estimated 120 cyclists the previous year.

As part of the festivities, a survey was conducted asking cyclists about their experiences and opinions on cycling to and around the University of Saskatchewan. Eighteen individuals participated in the survey, though many of the participants did not answer every question.

The most common comments from people include:

- There is lots of congestion in the Bowl and cyclist/pedestrian conflict. Cyclists request signage so everyone is aware that the paths in the Bowl are a shared space.
- It difficult to cycle to campus and crossing College Drive is difficult enough to dissuade people from cycling. Many asked for separated bicycle lanes leading to campus.
- There is a lack of bicycle racks on campus, particularly secure bicycle parking. The area in front of Arts/Thorvaldsen and Geology/Biology have the greatest need for more bike parking.

2.2 Consultation with Campus Cycling Club

The Campus Cycling Club was consulted to better understand the group's opinion on ways to improve cycling infrastructure.

The key comments include:

- Number one concern amongst students is availability of cheap and secure bicycle parking. There is a lack of available secure bicycle parking on campus as there are only twenty bike lockers. The Agriculture and Health Science secure parking are not in a location that allows easy access.

- College Drive is a barrier to entry and crossing University Bridge is prohibitively difficult. It discourages unexperienced riders from cycling to campus.
- Wiggins Avenue is the ideal location for a bike lane due to its low speed (it contains two school zones) and proximity to Nutana. However, it is a narrow road and there is not enough room to add lanes. Cumberland Avenue is a great area for bike lane due to connection to 14th Street path and proximity of College Quarter. There is ample room for a bike lane.
- Signage on campus that reiterates paths are shared space to reduce bicycle/pedestrian collisions.

2.3 Consultation with Saskatoon Cycles

Saskatoon Cycles was consulted about improving campus cycling infrastructure.

The key comments are:

- There is poor access to campus from all directions. Preston Avenue, College Drive, and the Saskatchewan River are all difficult to cross to make it to the University of Saskatchewan.
- It is essential that bicycle infrastructure be maintained. The Preston Avenue bike lane is consistently filled with dust and it discourages cycling.
- College Drive needs improvement. Along with University Bridge, they are the biggest issues in Saskatoon for cycling.
- Cumberland Avenue would be a great addition and could dramatically improve cycling rates to campus, but the intersection with College Drive needs to be addressed. It is currently unsafe due to the high speed vehicles are travelling coming from the east.

2.4 Edwards School of Business Cycling Surveys

Dr. Maureen Bourassa's Commerce 357 class in spring 2015 conducted several surveys for both the Bridge City Bike Co-Op and the Campus Cycling Club to assess cycling behavior, attitudes, barriers, and infrastructure.

The key findings are:

- The largest impediments are lack of bike infrastructure and weather. Many users do not feel comfortable cycling in the same lane as motor vehicles and crossing intersections is prohibitively difficult. Winter conditions greatly reduce the ability of people to cycle.
- 70% of non-cyclists claimed they would become cyclists if there were more convenient bicycle infrastructure.

- Better connections to downtown, Broadway, and the University of Saskatchewan were listed as needed to improve cycling.
- Safety is a major concern for potential cyclists and separated bike lines was cited as the best way to improve safety.

2.5 Bicycle Parking Surveys

On June 9th, 2015, the Office of Sustainability conducted a bicycle rack inventory at the University of Saskatchewan. This provided information on the quantity of bike parking spots on campus and how utilized they are. The results are included below.

- There are 253 bicycle racks on campus with 111 being in the main campus, as being defined as within Campus Drive, 41 are located outside of Campus Drive, and 101 being in College Quarter. This translates to roughly 2700 bike parking spots.
- College Quarter uses a different bicycle rack design. Despite having 101 bicycle racks, there is only capacity for roughly 480 bikes. This compares to a capacity of roughly 620 north of Campus Drive, and roughly 1630 on the main campus.
- Over 95% of racks had at least one bike, but most bike racks were underutilized. Only 39.8% of the total available spots were used.

Note: Innovation Place and the Fieldhouse were not included in the bicycle count, as the University of Saskatchewan does not administer them.

2.6 Consultation With Grounds (FMD)

The Grounds Department was consulted as bike racks are under the responsibility of Grounds. The importance of placing bike racks in locations that are conducive to snow clearance was emphasised.

Rotating bike racks 90° so they are not leaning against a wall was identified as a potential solution. This ensures access from both sides and can increase the capacity of bike racks for free.

3.0 Recommendations

The recommendation list includes three minor recommendations and one major recommendation. These recommendations attempt to relieve the concerns addressed by the stakeholders and students to improve cycling rate at the University of Saskatchewan.

3.1 Minor Recommendations

All minor recommendations are intended to have a far lower capital cost than the major recommendation. All recommendations come to a price under $10,000 individually.

3.1.1 Increase Standard Bike Racks

Three areas are under capacity for bicycle parking: east of the Arts building, south of the Geology building, and College Quarter.

It is recommended that the Office of Sustainability collaborate with Grounds and Parking Services to purchase five new bicycle racks. Placing one standard bicycle rack south of Geology, two east of Arts, and two in College Quarter should alleviate the bicycle parking constraints.

Figure 2 Standard Bike Racks

These bicycle racks can be moved by Grounds as needed for snow clearance.

It is recommended that bike-parking levels be monitored and bike racks can be moved as required.

Bike racks cost $760 individually, or $3800 for five racks.

3.1.2 Bicycle Cages

One of the most requested changes to parking services is to increase secure bicycle parking. The University of Saskatchewan currently offers two forms of secure bicycle parking on campus; individual bike lockers, and storage in both the Agriculture and Health Science parkades.

There are currently twenty bike lockers on campus with a long waiting list. Parking Services quotes the price of a new bike locker at $1200 per unit. To increase the capacity for secure bicycle parking using bike lockers would be cost-prohibitive.

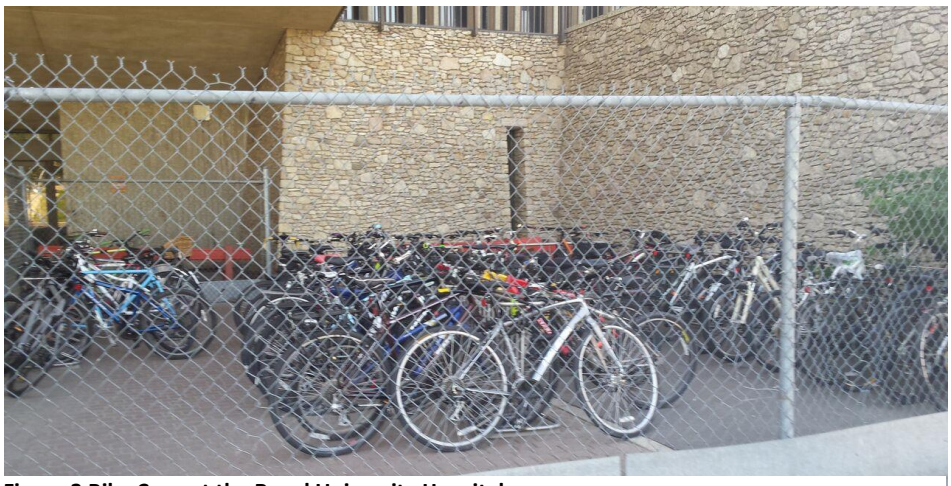


Figure 3 Bike Cage at the Royal University Hospital

The Agriculture and Health Science secure bicycle parking facilities are underutilized. This is largely due to their distance away from the centre of campus and difficulty of physically reaching the facilities.

A compromise between the standard bike rack which offers low security at a low cost and the bike lockers that offers high security at a high cost is a bike cage. Bike cages are enclosed fencing around standard bike racks that are opened via key. This reduces the risk of threat greatly as only those with a key can access the cage. Users would still lock their bike to the bike rack as normal.

There is currently a bike cage in place at the Royal University Hospital.

It is recommended that a pilot project bike cage be installed at the south-west side of the Murray Library. It would involve enclosing two bicycle racks with a chain-link fence.

The estimated cost of the project is $8100.[2] This results in $270 per secure bike parking space in comparison to $1200 per secure bike parking space currently required for a bike locker.

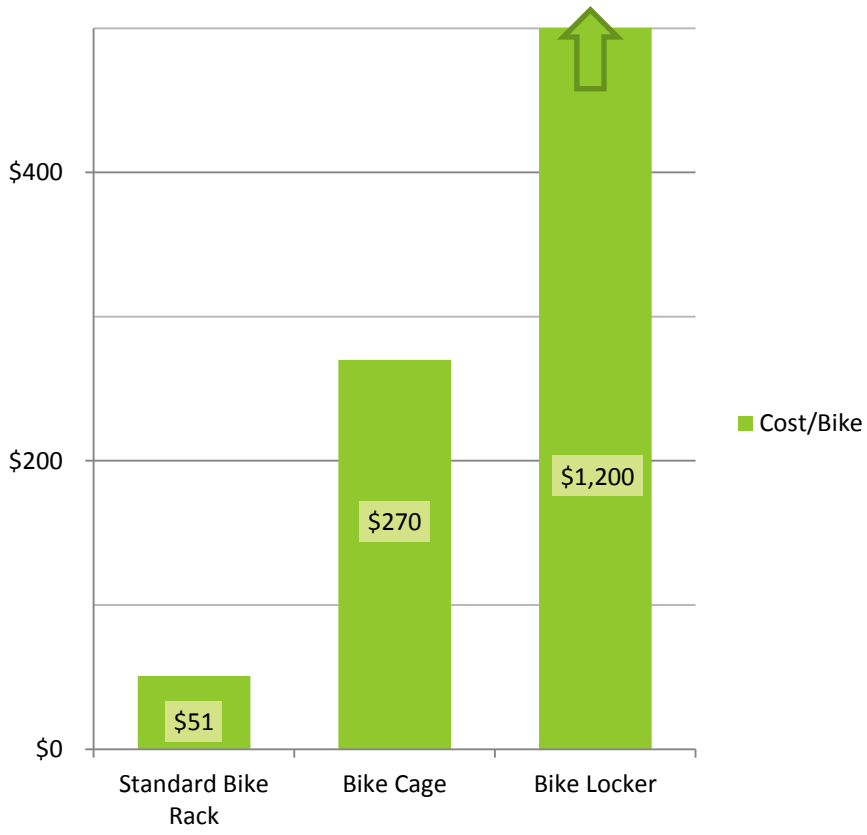


Figure 4 Cost Per Bike of Different Rack Designs

3.1.3 Signage in the Bowl

A major concern expressed by cyclists is that the high-traffic area of the Bowl results in pedestrian-cyclists conflicts. The paths are intended to be shared space, but pedestrian-cyclist conflicts still occur.

It is recommended that six signs be installed on light poles in the Bowl. These signs would alert pedestrians and cyclists that the path is a shared space and both parties should be courteous to the other.

[2] Quote from Nordic Fencing.

The cost of six signs is approximated at $1500.

3.2 Major Recommendation

3.2.1 Cumberland Bike pathway

The most significant complaint stakeholders had related to cycling at the University of Saskatchewan is that it is prohibitively difficult to cycle to campus.

The major roadway connections for cycling to campus include:

- College Drive
- Wiggins Avenue
- Preston Avenue
- 108th Street
- Cumberland Avenue

Improving the ability to cycle on any of these streets provides a connection to campus. Creating bicycle infrastructure on these streets will allow staff and students to easily commute to campus without interfering with motor vehicles or pedestrians.

College Drive is the single largest entry point to campus and Wiggins Avenue and Cumberland Avenue are its major feeders. Improving access amongst streets will greatly improve the ease, comfort, and safety of cycling to campus.

College Drive is one of the busiest streets in Saskatoon and the City of Saskatoon has long-term plans for the street that include Bus Rapid Transit (BRT) and corridor growth. As such, it is not advised to install cycling improvements on College Drive, as it would interfere with the long-term plans of the City.

Wiggins Avenue has no land owned by the University of Saskatchewan and at a width of 9.1 metres is not wide enough to support bicycle infrastructure.

Preston Avenue and 108th Street have existing dedicated cycling infrastructure.

The University of Saskatchewan owns all lands bordering the eastern edge of Cumberland Avenue from 14th Street to College Drive. Before the development of College Quarter there were plans created to install a permanent bike path that would connect the University of Saskatchewan main campus to the 14th Street multi-use path. Those plans were put on hold due to ongoing development of the College Quarter area. Now that plans are being realized for College Quarter, it is appropriate to begin implementation of the Cumberland Avenue bike path.

Cumberland Avenue is a unique opportunity to provide dedicated cycling infrastructure to staff and students. It borders Varsity View and College Quarter. Dedicated cycling infrastructure on Cumberland Avenue would provide staff and students in those neighbourhoods a safe and convenient way to cycle to campus. As College Quarter further develops and the University of Saskatchewan endowment land is developed, it will serve as the major cycling connection to the main campus.

During the regular school year there are over 2,200 students who live in the Varsity View, College Quarter, and Grosvenor Park neighbourhoods. This is large pool of students to pull from who would be able to use the Cumberland Avenue bike path.[3]

Cumberland Avenue is 11.8 metres wide, which is wide enough to support two traffic lanes and two parking lanes. It is not wide enough to support a bike lane on the street. However, there is ample room east of Cumberland Avenue to install a bicycle lane.

The proposed bike path is 3.5 metres wide and 750 metres long.

The estimated cost of installing a dedicated bike path on Cumberland is $131,250.[4]

Figure 5 Proposed Bike Path on Cumberland Avenue

[3] Saskatoon Neighbourhood Profiles
[4] Quote from Gift Marufu, Manager of Grounds Department

4.0 Research & Future Study

The recommendations included in section 3.0 are intended to be a first step in making the University of Saskatchewan a place where cycling is an integral part of transportation. There are other aspects that need to be included that are not infrastructure, but are vital to improving cycling at the University.

4.1 Bicycle Parking Counts

A bicycle parking count was conducted on Tuesday, June 9th, 2015. It was noted that roughly 40% of the total bicycle parking spots were used. The population on campus during June is substantially lower than during the regular school year. It is recommended that a bicycle parking be conducted every three months to better understand how student cycling behaviour changes at different points of the year.

It is necessary to maintain consistently for the counts. As such, the second Wednesday approximately every three months is recommended for a bicycle parking count. This correlates to the following days

- September 9th, 2015
- December 9th, 2015
- March 9th, 2016
- June 8th, 2016

These four parking counts will better inform the University of Saskatchewan where bicycle parking can be improved.

In addition, it would be beneficial to do a bicycle parking count every day of the week to better understand bicycle patterns throughout a week. It is recommended the count be conducted during the peak season of mid-September. Due to the large time commitment involved with doing a full week of counts, it is only recommended this study be done if resources permit.

4.2 College Drive and Cumberland Avenue Intersection

The intersection of College Drive and Cumberland Avenue is the busiest intersection for pedestrians and cyclists.[5] This is likely due to the large population of students at College Quarter and Cumberland Avenue acting as a major connection for residents of Varsity View and Grosvenor Park. The Cumberland Avenue bike path and continued growth of College Quarter will result in an increase in the pedestrian and cyclist use of this intersection.

[5] Sustainability Transportation Plan pg. 9

It is recommended that a design for safe crossing of bicycles and pedestrians at this intersection be created in conjunction with the City of Saskatoon. Not only will this allow for safe crossing of the current users, but is necessary for the Cumberland bike path to succeed.

4.3 Promotion of Agriculture and Health Sciences Bicycling Parking

There are currently secure bicycle parking facilities in both the Agriculture and Health Science parkades. Both are underutilized.

The Agriculture parkade offers 10 secure bike parking spots. Bikes have to be lifted and are stored on a wall. The bicycle parking count on June 9th found zero bikes parked there.

The Health Science parkade offers 92 secure bike parking spots in a bike cage. The bicycle parking count on June 9th found 11 bikes parked there.

Both locations suffer from being difficult to reach in comparison to a standard bike rack. The Health Science location cannot be reached from the east without going through the building.

It is recommended that both locations be promoted to increase their usage.

4.4 Cyclist Counts

While bicycle parking counts have been conducted, a cyclist count has not been conducted since 2012 for the 2013 Sustainable Mobility Strategic Plan.

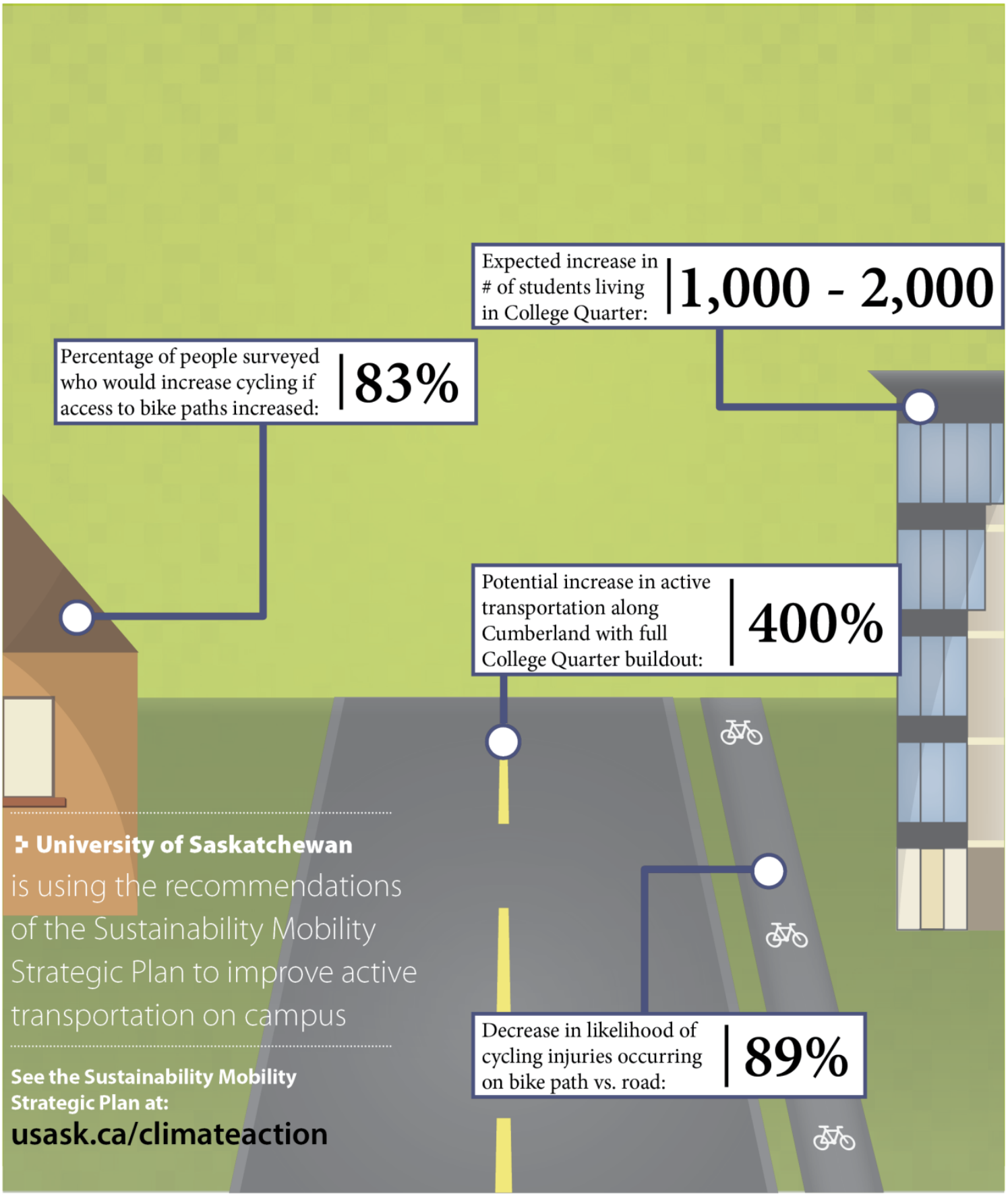
There has been considerable growth on campus since 2010 particularly in College Quarter. A renewed cyclist count would aid decision-making.

4.5 Partnering with the City of Saskatoon to Improve Cycling on College Drive

College Drive is one of the busiest streets in Saskatoon and acts as the major entry point to the University of Saskatchewan. The City of Saskatoon has major long-term plans for the street including Bus Rapid Transit (BRT) and corridor growth.

The single best way to improve cycling to campus is to make College Drive a cycling friendly street. To do so requires partnership with the City of Saskatoon to ensure that all of the changes of College Drive work in conjunction with one another.

2015 CYCLING INFRASTRUCTURE REPORT



Expected increase in # of students living in College Quarter: **1,000 - 2,000**

Percentage of people surveyed who would increase cycling if access to bike paths increased: **83%**

Potential increase in active transportation along Cumberland with full College Quarter buildout: **400%**

Decrease in likelihood of cycling injuries occurring on bike path vs. road: **89%**

University of Saskatchewan is using the recommendations of the Sustainability Mobility Strategic Plan to improve active transportation on campus

See the Sustainability Mobility Strategic Plan at:
usask.ca/climateaction