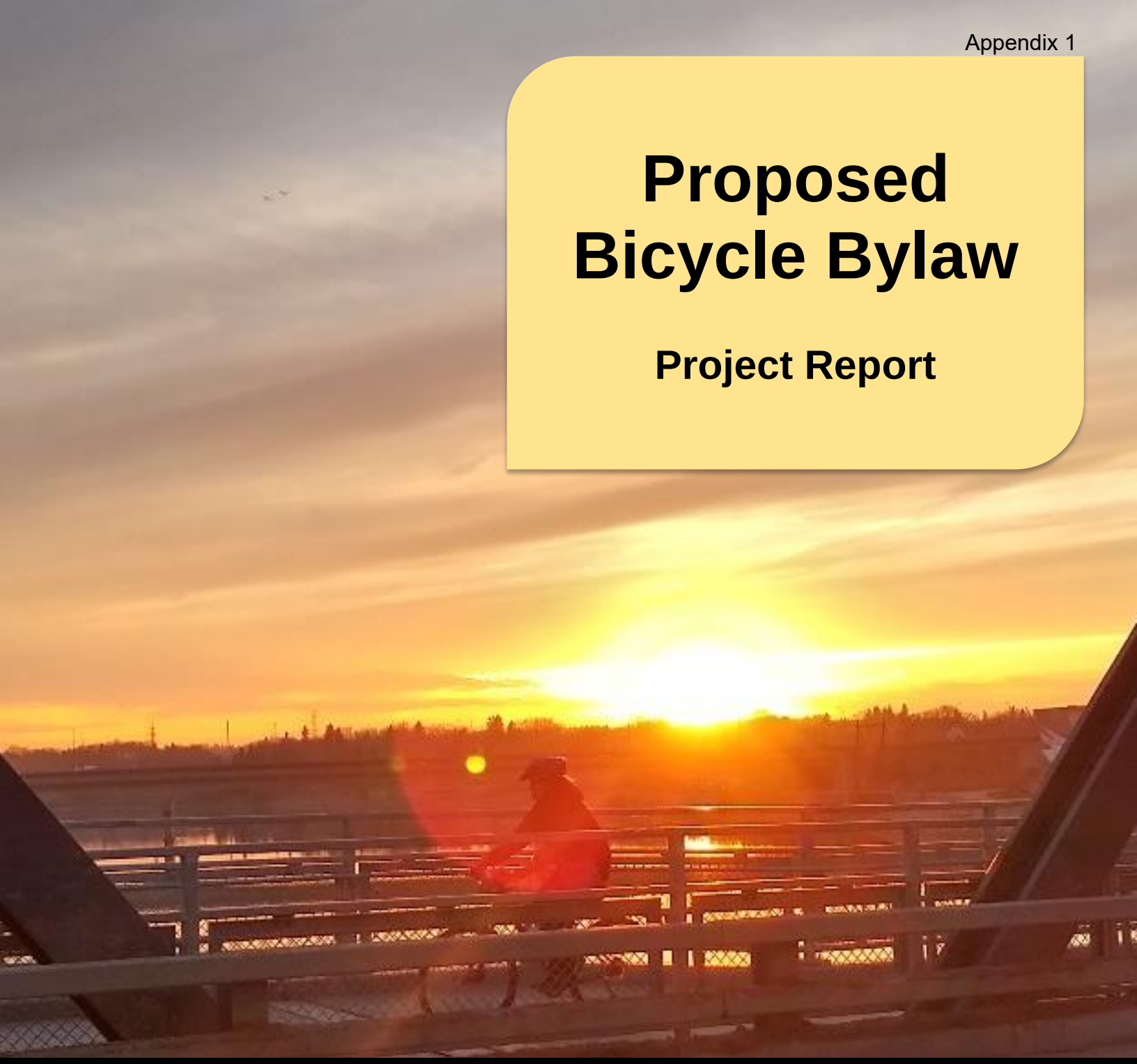

Proposed Bicycle Bylaw

Project Report

October 2019
City of Saskatoon

AUTHORIZATION

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CONTENTS

INTRODUCTION

The purpose of this attachment is to document the Administration's recommended rule change to compose a new bicycle bylaw to replace Bicycle Bylaw, No. 6884. The proposed bicycle bylaw describes the intention of a proposed rule rather than the specific text that will form the finalized bylaw. Most modifications are adapted from regulation enacted in other jurisdictions.

The purpose of this report is to document the content of a new bicycle bylaw recommended by the Administration. The report sets out proposed rules and regulations, many of which are adapted from bylaws in force in other jurisdictions, rather than the specific text that will form the finalized bylaw.

The Proposed New Bicycle Bylaw will:

- Complement the City's vision for pedestrian and bicycle mobility.
- Be easy to understand and feasible to implement.
- Provide an effective enforcement tool to complement the Traffic Bylaw, No. 7200 and provincial Traffic Safety Act.

SECTIONS

PROPOSED BYLAW
This section presents the content of the proposed new bylaw.

SIDE-BY-SIDE COMPARISON: NEW & CURRENT
This section presents the content of the proposed new bylaw alongside current Bicycle Bylaw, No. 6884.

EXPLANATION OF CHANGES
This section lists each component of the proposed bylaw and discusses the rationale for the change as well as practices from across Canada.

STAKEHOLDER ENGAGEMENT
The project engaged 15 stakeholder organizations who submitted their considerations for a new bylaw. This section summarizes their recommendations.

CONTENTS OF PROPOSED BYLAW

The following sets out proposed rules and regulations, many of which are adapted from bylaws in force in other jurisdictions, rather than the specific text that will form the finalized bylaw.

DEFINITIONS

The proposed bylaw will contain definitions to clarify the intended meaning of terms. These definitions may include some or all of the following:

"Act" means The Traffic Safety Act of the Province of Saskatchewan.

"Bridge" means a structure carrying a road, path, railroad, or canal across a river, ravine, road, railroad, or other obstacle. Interchange bridges are included in this definition.

"Bicycle" means any muscular propelled, chain-driven wheeled device in, on, or by which a person is or may be transported or drawn.

"Cycle Track" means any road, street, path or way, physically separated from motorized vehicular traffic by an open space or barrier and either within the street right-of-way or within an independent right-of-way, which in some manner is specifically designated for bicycle travel. Includes exclusive bicycle lanes.

"Electric Bicycle" or "Power Assisted Bicycle" means a bicycle that combines muscular propulsion with electric motor assistance under the Motor Vehicle Safety Regulations (Canada) (C.R.C., c. 1038).

"Exclusive Bicycle Lane" is where a street has been divided into marked lanes for traffic and one or more lanes has been designated for use by bicycles by means of a traffic control device, the lane so designated and indicated is reserved for the exclusive use of bicycles and other permitted vehicles. An exclusive bicycle lane may be physically separated from motorized vehicular traffic by an open space or barrier.

"Motor Vehicle" means a vehicle propelled or driven by any means other than by muscular power, according to Part I.2(1)(r) of the provincial Traffic Safety Act.

"Multi-Use Path" means a trail or other path, physically separated from motorized vehicular traffic by an open space or barrier, either within the street right-of-way or within an independent right-of-way, and usable for transportation purposes.

'Park" means any improved or unimproved lands owned by or subject to the direction and control of The City of Saskatoon and intended for the recreational use and enjoyment of the general public, and, without limitation, includes all those areas encompassed by what is commonly known as the Meewasin Valley Trail, and all lands and environs associated therewith.

"Overtaking" means the act of one vehicle going past another slower moving or stopped vehicle, travelling in the same direction.

"Pedestrian" means a person on foot or in a wheelchair.

“River Crossing” means a bridge crossing the South Saskatchewan River.

“Shared-Use Path” means multi-use path or sidewalk delineated by signage or pavement markings where people cycling share the facility with pedestrians.

“Sidewalk” means a separated facility at the side of a street or roadway intended for use by pedestrians.

“Street” means all or any part of a road allowance, highway, road, lane, bridge, place, alley, square, thoroughfare, or way intended for or used by the general public for the passage of vehicles or pedestrians.

“Traffic Bylaw" means Bylaw No. 7200 of The City of Saskatoon and all amendments thereto;

“Vehicle” is means a device in, on or by which a person or thing is or may be transported or drawn on a highway and includes special mobile machines and farm implements but does not include vehicles running only on rails or solely on railway company property, according to Part I.2(1)(ccc) of the provincial Traffic Safety Act.

1. OPERATION

A person riding a bicycle:

1) has the same rights and duties as a driver of a motor vehicle and is subject to the rules and regulations of the provincial Traffic Safety Act
2) shall not ride without due care and attention
3) shall not ride on a sidewalk unless permitted by signs or markings
4) shall utilize only that portion of the street as is intended for the passage of motor vehicles, except that cyclists may ride in a parking lane
5) shall keep at least one hand on the handlebars at all times
6) shall not ride other than upon or astride a regular seat of the bicycle
7) shall not use it to carry more persons at one time than the number for which it is designed and equipped
8) shall not carry any package, bundle, or article which prevents them from keeping both hands on the handlebars or obstructs their view
9) shall not ride on the left side of any two other bicycles being operated abreast on a street, except to overtake
10) shall not ride where signs and markings prohibit its use
11) shall not perform or engage in any stunt or other activity that is likely to distract, startle or interfere with other transportation network users
12) must give a signal by hand and arm prior to turning in the following manner:
    a) when making a left-hand turn, by extending the left arm horizontally.
    b) when making a right-hand turn, by extending the left arm bent vertically upwards.

2 BICYCLE EQUIPMENT

A person shall not ride a bicycle during the period from one-half hour before sunset to one-half hour after sunrise, or at any other time when conditions of poor visibility exist, unless the bicycle has the following:

1) at least one headlamp
2) at least one red rear light or red reflector

A person shall not ride a bicycle unless the bicycle has a functioning braking system adequate to control the movement of and to stop the bicycle whenever necessary.

A person shall not ride a bicycle unless the bicycle is equipped with a horn or bell capable of emitting sound audible under normal conditions for a distance of not less than thirty-five (35) metres.

3 SIDEWALKS

No person, over the age of 14, shall drive a bicycle upon a sidewalk unless:

1) the sidewalk is delineated as a Shared-Use Path by signage or pavement markings and they are operating at a moderate rate of speed, or so not to startle, endanger, or interfere with any other person, or
2) they are entering upon or leaving land adjacent to a street.

4 SHARED-USE PATHS

On any river crossing, bridge, multi-use path, park trail, or sidewalk designated as a Shared-Use Path, every person operating a bicycle shall:

1) comply with traffic signals, signs and markings
2) proceed with due care and attention and with reasonable consideration for all pedestrians and path users
3) yield the right of way to all pedestrians, at all times
4) operate the bicycle to the right of the center of any such sidewalk, trail, or path, except when overtaking and passing a pedestrian or a bicyclist in the same direction
5) alert anyone about to be overtaken by sounding a horn or a bell a reasonable amount of time before overtaking
6) operate at a moderate rate of speed, or so not to startle, endanger, or interfere with any other person.

5 BRIDGES

In traversing any bridge or river crossing, a person operating a bicycle may:

1) use that portion of the bridge or river crossing as is intended for the passage of motor vehicles; or,
2) use the sidewalk portion of any bridge or river crossing as a Shared-Use Path.

6 CYCLE TRACKS

A person riding a bicycle in a cycle track shall travel only in the direction designated for that lane.

Vehicles other than bicycles may not drive, stand, stop or park in an exclusive bicycle lane or cycle track except:

1) where the bicycle lane marking is dashed, motor vehicles may, when safe to do so, merge into the bicycle lane to make a turn.
2) where the bicycle lane is located between the travel lane and the parking lane, motor vehicles may, when safe to do so, cross the bicycle lane for parking the vehicle.

7 MOTORIST OVERTAKING A PERSON RIDING A BICYCLE

Every person in charge of a motor vehicle who is overtaking a person travelling on a bicycle on a street with one traffic lane in the direction of travel, shall, as nearly as may be practicable, leave a distance of not less than one meter between the bicycle and the motor vehicle and shall maintain that distance until safely past the bicycle. The one-meter distance required refers to the distance between the extreme right side of the motor vehicle and the extreme left side of the bicycle, including all projections and attachments.

8 FREEWAYS

No person shall operate a bicycle upon any of those streets set forth in Schedule "A", except upon that portion of any such street as is clearly set aside and designated for the passage of bicycles.

9 PENALTIES

The penalty for breach of any of the provisions of this Bylaw shall be as set forth in Schedule "B" hereto.

Every person who breaches any of the provisions of this Bylaw is guilty of an offense and liable on summary conviction to a fine of ($50.00) Dollars, hereinafter referred to as the stipulated penalty.

SCHEDULE A

1. Idylwyld Drive from 20th Street south to Circle Drive;
2. Circle Drive South from Idylwyld Drive east to Highway No. 11;
3. Circle Drive North from Millar Avenue east and south to College Drive;
4. Attridge Drive from Circle Drive to Central Avenue;
5. Circle Drive west from Idylwyld Drive South to Airport Drive

SIDE-BY-SIDE COMPARISON: NEW & CURRENT

Draft Proposed Bylaw	Current Bicycle Bylaw, No. 6884
1. OPERATION	
A person riding a bicycle:	
1) has the same rights and duties as a driver of a motor vehicle and is subject to the rules and regulations of the provincial Traffic Safety Act	**10. Stunting** Every person operating a bicycle shall have at least one hand on the handle bars at all times, and no person operating a bicycle shall perform or engage in any acrobatic or other stunt**.**
2) shall not ride without due care and attention	**15. Due Care and Attention** Every person operating a bicycle in a park shall do so with due care and attention and with reasonable consideration for other persons in such park.
3) shall not ride on a sidewalk unless permitted by signs or markings	
4) shall utilize only that portion of the street as is intended for the passage of motor vehicles, except that cyclists may ride in a parking lane	**8. Position on Street** Every person operating a bicycle shall utilize only that portion of the street as is intended for the passage of motor vehicles and shall be so positioned thereon as to be as close as is reasonably practicable to the right hand curb, except that any such person operating a bicycle may leave the proximity of the right hand curb when approaching an intersection and indicating an intention to turn by giving the required signal to that effect.
5) shall keep at least one hand on the handlebars at all times	
6) shall not ride other than upon or astride a regular seat of the bicycle	
7) shall not use it to carry more persons at one time than the number for which it is designed and equipped	**11. Passengers** No person shall operate a bicycle while carrying thereon any other person, except that such person may carry one passenger where the bicycle is equipped with a properly constructed pillion seat securely fastened over the rear wheel thereof.

Draft Proposed Bylaw	Current Bicycle Bylaw, No. 6884
8) shall not carry any package, bundle, or article which prevents the bicyclist from keeping both hands on the handlebars or obstructs their view	**12. Loads** No person shall operate a bicycle while carrying thereon any load in excess of twenty-five (25) kilograms, nor shall such load extend to a greater width that forty-five (45) centimetres on either side of the center line of the bicycle, nor to such a height as would obstruct the clear vision in all directions of the person operating the bicycle while seated on the seat thereof.
9) shall not ride on the left side of any two other bicycles being operated abreast on a street, except to pass	**9. Two Abreast** Except as is necessary for the purpose of passing, no person shall operate a bicycle on the left side of any two other bicycles being operated abreast.
10) shall not ride where signs and markings prohibit its use	
11) shall not perform or engage in any stunt or other activity that is likely to distract, startle or interfere with other transportation network users	**10. Stunting** Every person operating a bicycle shall have at least one hand on the handle bars at all times, and no person operating a bicycle shall perform or engage in any acrobatic or other stunt
12) must give a signal by hand and arm prior to turning in the following manner: a) when making a left-hand turn, by extending the left arm horizontally. b) when making a right-hand turn, by extending the left arm bent vertically upwards.	

Draft Proposed Bylaw	Current Bicycle Bylaw, No. 6884
2 BICYCLE EQUIPMENT	**EQUIPMENT**
A person shall not ride a bicycle during the period from one-half hour before sunset to one-half hour after sunrise, or at any other time when conditions of poor visibility exist, unless the bicycle has the following: 1) at least one headlamp 2) at least one red rear light or red reflector	**7. Lights and Reflective Devices** No person shall operate a bicycle during the period from one-half hour after sunset to onehalf hour before sunrise, or at any other time when conditions of poor visibility exist, unless such bicycle is equipped
A person shall not ride a bicycle unless the bicycle has a functioning braking system adequate to control the movement of and to stop the bicycle whenever necessary.	**5. Brakes** No person shall operate a bicycle unless such bicycle is equipped with a braking mechanism adequate to control the movement of and to stop the bicycle whenever necessary. All such braking mechanisms shall be maintained in efficient working condition at all times.
A person shall not ride a bicycle unless the bicycle is equipped with a horn or bell capable of emitting sound audible under normal conditions for a distance of not less than thirty-five (35) metres.	**6. Horn or Bell** No person shall operate a bicycle unless such bicycle is equipped with a horn or bell capable of emitting sound audible under normal conditions for a distance of not less than thirty-five (35) metres.
3 SIDEWALKS	
No person, over the age of 14, shall drive a bicycle upon a sidewalk unless: 1) the sidewalk is delineated as a Shared-Use Path by signage or pavement markings and they are operating at a moderate rate of speed, or so not to startle, endanger, or interfere with any other person, or 2) they are entering upon or leaving land adjacent to a street.	

Draft Proposed Bylaw	Current Bicycle Bylaw, No. 6884
4 SHARED-USE PATHS	
On any river crossing, bridge, multi-use path, park trail, or sidewalk designated as a Shared-Use Path, every person operating a bicycle shall:	
1) comply with traffic signals, signs and markings	**14. Comply with Traffic Signs** Every person operating a bicycle in a park shall comply with the directions or regulations contained on any traffic sign in such park.
2) proceed with due care and attention and with reasonable consideration for all pedestrians and path users	**15. Due Care and Attention** Every person operating a bicycle in a park shall do so with due care and attention and with reasonable consideration for other persons in such park.
3) yield the right of way to all pedestrians, at all times	**16. Yield Right of Way** Every person operating a bicycle in a park shall yield the right of way to any pedestrian therein.
4) operate the bicycle to the right of the center of any such sidewalk, trail, or path, except when overtaking and passing a pedestrian or a bicyclist in the same direction	**17. Operating on Left Prohibited** Every person operating a bicycle upon any sidewalk, trail, or path in a park shall, except when overtaking and passing a pedestrian or bicyclist proceeding in the same direction, operate the bicycle to the right of the center of any such sidewalk, trail, or path.
5) alert anyone about to be overtaken by sounding a horn or a bell a reasonable amount of time before overtaking	**18. Passing and Overtaking** Every person operating a bicycle upon any sidewalk, trail, or path in a park shall sound a horn or bell prior to overtaking and passing any pedestrian or bicyclist proceeding in the same direction upon any such sidewalk, trail, or path.
6) operate at a moderate rate of speed, or so not to startle, endanger, or interfere with any other person.	**19. Rate of Speed** No person shall operate a bicycle in a park at an immoderate rate of speed, or so as to startle, endanger, or interfere with any other person in such park.

Draft Proposed Bylaw	Current Bicycle Bylaw, No. 6884
5 BRIDGES	**BRIDGES**
In traversing any bridge or river crossing, a person operating a bicycle may: 1) use that portion of the bridge or river crossing as is intended for the passage of motor vehicles; or,	**20.** In traversing any bridge or river crossing a person operating a bicycle may: (a) subject to Section 22, utilize that portion of the bridge or river crossing as is intended for the passage of motor vehicles; or, (b) notwithstanding any other provision hereof, utilize the sidewalk portion of any bridge or river crossing.
2) use the sidewalk portion of any bridge or river crossing as a Shared-Use Path.	**21. Crossing on Sidewalk** In traversing any bridge or river crossing upon the sidewalk as provided in Section 20(b), every person operating a bicycle shall: (a) proceed with due care and attention and with reasonable consideration for all pedestrians; and, (b) yield the right of way to all pedestrians; and, (c) dismount and walk the bicycle when passing a pedestrian proceeding in the same direction upon such sidewalk.
6 CYCLE TRACKS	**BICYCLE LANES**
A person riding a bicycle in a cycle track shall travel only in the direction designated for that lane. Vehicles other than bicycles may not drive, stand, stop or park in an exclusive bicycle lane or cycle track except: 1) where the bicycle lane marking is dashed, motor vehicles may, when safe to do so, merge into the bicycle lane to make a turn. 2) where the bicycle lane is located between the travel lane and the parking lane, motor vehicles may, when safe to do so, cross the bicycle lane for parking the vehicle.	**13.** In any location where an exclusive lane for the passage of bicycles has been established and is so designated by traffic signs and pavement markings, every person operating a bicycle shall utilize such lane only, except that any such person may depart from the exclusive bicycle lane when approaching an intersection and indicating an intention to turn by giving the required signal to that effect.

Draft Proposed Bylaw	Current Bicycle Bylaw, No. 6884
7 MOTORIST OVERTAKING A PERSON RIDING A BICYCLE	
Every person in charge of a motor vehicle who is overtaking a person travelling on a bicycle on a street with one traffic lane in the direction of travel, shall, as nearly as may be practicable, leave a distance of not less than one meter between the bicycle and the motor vehicle and shall maintain that distance until safely past the bicycle. The one-meter distance required refers to the distance between the extreme right side of the motor vehicle and the extreme left side of the bicycle, including all projections and attachments.	
8 FREEWAYS	**FREEWAY SYSTEM**
No person shall operate a bicycle upon any of those streets set forth in Schedule "A", except upon that portion of any such street as is clearly set aside and designated for the passage of bicycles. 1. Idylwyld Drive from 20th Street south to Circle Drive; 2. Circle Drive South from Idylwyld Drive east to Highway No. 11; 3. Circle Drive North from Millar Avenue east and south to College Drive; 4. Attridge Drive from Circle Drive to Central Avenue; 5. Circle Drive west from Idylwyld Drive South to Airport Drive	**22. Freeways** No person shall operate a bicycle upon any of those streets set forth in Schedule "A" hereto, except upon that portion of any such street as is clearly set aside and designated for the passage of bicycles. 1. Idylwyld Drive from 20th Street south to Circle Drive; 2. Circle Drive South from Idylwyld Drive east to Highway No. 11; 3. Circle Drive North from Millar Avenue east and south to College Drive; 4. Attridge Drive from Circle Drive to Central Avenue; 5. Circle Drive between 33rd Street and Airport Drive.
9 PENALTIES	**PENALTIES**
The penalty for breach of any of the provisions of this Bylaw shall be as set forth in Schedule "B" hereto. Every person who breaches any of the provisions of this Bylaw is guilty of an offense and liable on summary conviction to a fine of ($50.00) Dollars, hereinafter referred to as the stipulated penalty.	**23.** The penalty for breach of any of the provisions of this Bylaw shall be as set forth in Schedule "B" hereto. Every person who breaches any of the provisions of this Bylaw is guilty of an offense and liable on summary conviction to a fine of Fifty ($50.00) Dollars, hereinafter referred to as the stipulated penalty.

EXPLANATION OF CHANGES

1 OPERATION

Proposed Bylaw:

A person riding a bicycle:

1) **has the same rights and duties as a driver of a motor vehicle and is subject to the rules and regulations of the provincial Traffic Safety Act**
2) **shall not ride without due care and attention**
3) **shall not ride on a sidewalk unless permitted by signs or markings**
4) **shall utilize only that portion of the street as is intended for the passage of motor vehicles, except that cyclists may ride in a parking lane**
5) **shall keep at least one hand on the handlebars at all times**
6) **shall not ride other than upon or astride a regular seat of the bicycle**
7) **shall not use it to carry more persons at one time than the number for which it is designed and equipped**
8) **shall not carry any package, bundle, or article which prevents them from keeping both hands on the handlebars or obstructs their view**
9) **shall not ride on the left side of any two other bicycles being operated abreast on a street, except to overtake**
10) **shall not ride where signs and markings prohibit its use**
11) **shall not perform or engage in any stunt or other activity that is likely to distract, startle or interfere with other transportation network users**
12) **must give a signal by hand and arm prior to turning in the following manner:**
    a) **when making a left-hand turn, by extending the left arm horizontally.**
    b) **when making a right-hand turn, by extending the left arm bent vertically upwards.**

Changes:

- Removed requirement for people cycling to ride as close to curb as practicable.
- Added hand signaling requirement.
- Clarified the number of passengers allowed.
- Clarified allowable loads.

1.1 REMOVED REQUIREMENT FOR PEOPLE CYCLING TO RIDE AS CLOSE TO CURB AS PRACTICABLE

Former Bylaw

Every person operating a bicycle shall utilize only that portion of the street as is intended for the passage of motor vehicles and shall be so positioned thereon as to be as close as is reasonably practicable to the right hand curb, except that any such person operating a bicycle may leave the proximity of the right hand curb when approaching an intersection and indicating an intention to turn by giving the required signal to that effect.

Discussion

Best practice is for cyclists is to ride in the middle of the right-hand lane to emphasise their presence in the road to drivers behind, or to stop them overtaking where it is not safe. It is not safe to ride too close to the curb because of the presence of the gutter as well as the 'door zone' close to parked cars.

1.2 ADDED HAND SIGNALING REQUIREMENT

Former Bylaw
Did not address hand signalling but alluded to it in Section 8, *"…indicating an intention to turn by giving the required signal to that effect."*

Discussion
A key strategy for people riding bicycles on streets is to be as visible and as predictable as possible. Hand signalling by people riding bicycles lets other street users know what the cyclist is intending to do. A person operating a bicycle should signal when turning left and right or when changing lanes.

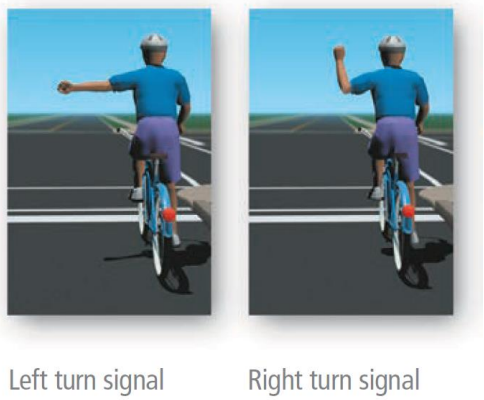

Figure 1 - Hand Signals (Nova Scotia's Driver Handbook 2013, p. 72)

1.3 CLARIFIED THE NUMBER OF PASSENGERS ALLOWED

Former Bylaw
No person shall operate a bicycle while carrying thereon any other person, except that such person may carry one passenger where the bicycle is equipped with a properly constructed pillion seat securely fastened over the rear wheel thereof.

Discussion
Bicycles are built for many purposes – some of which have been constructed expressly to transport multiple children. The proposed bylaw clarifies that a person riding a bicycle shall not use it to carry more persons at one time than the number for which it is designed and equipped.

1.4 CLARIFIED ALLOWABLE LOADS

Former Bylaw

No person shall operate a bicycle while carrying thereon any load in excess of twenty-five (25) kilograms, nor shall such load extend to a greater width that forty-five (45) centimetres on either side of the center line of the bicycle, nor to such a height as would obstruct the clear vision in all directions of the person operating the bicycle while seated on the seat thereof.

Discussion

The restriction of load size and weight is prohibitive to those who use their bike to travel carrying luggage or cargo, such as groceries. Quite often, people have bicycles built specifically for larger loads. Thus, the new bylaw simply restricts any load that could prevent the bicyclist from maintain control of their bicycle by keeping both hands on the handlebars. As well, any load that obstructs the view of the cyclist is to be avoided.

2 BICYCLE EQUIPMENT

Proposed Bylaw:

A person shall not ride a bicycle during the period from one-half hour before sunset to one-half hour after sunrise, or at any other time when conditions of poor visibility exist, unless the bicycle has the following:

1) **at least one headlamp**
2) **at least one red rear light or red reflector**

A person shall not ride a bicycle unless the bicycle has a functioning braking system adequate to control the movement of and to stop the bicycle whenever necessary.

A person shall not ride a bicycle unless the bicycle is equipped with a horn or bell capable of emitting sound audible under normal conditions for a distance of not less than thirty-five (35) metres.

Change:

- Added that a red rear reflector may be used instead of a light.

3 SIDEWALKS

Proposed Bylaw:

No person, over the age of 14, shall drive a bicycle upon a sidewalk unless:

1) **the sidewalk is delineated as a Shared-Use Path by signage or pavement markings and they are operating at a moderate rate of speed, or so not to startle, endanger, or interfere with any other person, or**
2) **they are entering upon or leaving land adjacent to a street.**

Changes:

- Reiterated sidewalk riding prohibition.
- Added allowance for children under 14.

3.1 REITERATED SIDEWALK RIDING PROHIBITION

Former Bylaw

Every person operating a bicycle shall utilize only that portion of the street as is intended for the passage of motor vehicles…

Discussion

Cyclists should be discouraged from riding on sidewalks where motorized traffic may turn across their paths, unless cyclists proceed at speeds not exceeding pedestrian traffic. By extension, crosswalk riding should also be prohibited except where shared-use crossings are indicated by signage and pavement markings. Many cities restrict riding on sidewalks except when designated as a "Shared-Use Path" where people cycling are to yield the right of way to people walking and to reduce operating speeds.

Figure 2 - Cross-ride example

Adequate sight distance for the exit maneuver from the driveway is one of the most critical elements for restricting cycling on sidewalks. Sight distance is determined in consideration of the design speed of the intersection roadway and sight triangle requirements. It is often difficult to provide the desired sight distance due to restrictions created by parked cars, fencing and vegetation. Reduced sight distances are generally tolerable in situations due to the low operating speeds and caution exercised by drivers (TAC, 2017). Limited visibility does not afford the time for a motorist to perceive an approaching cyclist who is travelling faster than a pedestrian and closer to the motorist.

Cyclists who ride on the sidewalk face higher risks of collisions with motor vehicles at driveways, lanes and intersections. Aultman-Hall and Adams (1998) concluded through empirical evaluation that overall, travel on roads has the lowest injury and fall rates, followed by off-road paths and then sidewalks. Sidewalk cyclists incurred higher accident rates than road cyclists on both roads and paths and attributed

this to their being less skilled. The authors recommended that sidewalk cyclists need to be trained rather than being told merely to cease cycling on sidewalks.

3.2 ADDED ALLOWANCE FOR CHILDREN UNDER 14

Former Bylaw
Did not specify a maximum allowable age for sidewalk riding.

Discussion
The previous bylaw did not indicate a maximum age allowable because the Summary Offences Procedure Act indicates that no person under the age of 12 years is liable to be convicted of an offence under any Act, regulation or bylaw. Thus, notices of violation are not issued to a person who is under 12 years of age. Many jurisdictions follow this reasoning and do not specify a maximum allowable age in their regulations.

The revised bylaw clarifies that sidewalk riding is allowed for children under the age of 14. Some jurisdictions specify a maximum allowable age of 14 or specify a maximum wheel diameter. At 14 years of age, children are high-school aged and on the cusp of receiving driver's learner permits. At this age, young adults should be confident and capable to ride on the street.

Regulations that specifying the maximum wheel diameter focuses on the equipment rather than age or ability. The figure below shows the relative differences in wheel diameters for typical bicycles. A wheel diameter specification considers the ability of the person cycling rather than an absolute age. Adult bicycles usually have wheel diameters in excess of 50cm, except for increasingly popular folding bicycles. Enforcement in the field, conversely, is more difficult.

40cm | 50cm | 66cm (26 inches) | 74 cm (700cc or 29 inches)

Figure 3- Comparison of wheel diameters

Table 1 - Comparison of Jurisdictions: Age and wheel diameter stipulations

	Ages allowed on sidewalk	Wheel Diameter	Bicycle Type
Calgary	14		
Edmonton	not specified	Less than 50 cm	
Kelowna	12		Non-chain driven 3 or 4 wheeled cycle
Manitoba	not specified	Less than 41cm	
Ottawa	not specified		
Vancouver	16		

4 SHARED-USE PATHS

Proposed Bylaw:

On any river crossing, bridge, multi-use path, park trail, or sidewalk designated as a Shared-Use Path, every person operating a bicycle shall:

1) **comply with traffic signals, signs and markings**
2) **proceed with due care and attention and with reasonable consideration for all pedestrians and path users**
3) **yield the right of way to all pedestrians, at all times**
4) **operate the bicycle to the right of the center of any such sidewalk, trail, or path, except when overtaking and passing a pedestrian or a bicyclist in the same direction**
5) **alert anyone about to be overtaken by sounding a horn or a bell a reasonable amount of time before overtaking**
6) **operate at a moderate rate of speed, or so not to startle, endanger, or interfere with any other person.**

Changes:

- Clarified Shared Use designation.
- Applied rules for park trails to all shared-use facilities.

4.1 CLARIFIED SHARED USE DESIGNATION

Former Bylaw
Did not address Shared Use Path designations.

Discussion
Shared-Use Paths are a significant part of Saskatoon's All Ages and Abilities cycling system and pedestrian network. They are not restricted to park settings but comprise river crossings, bridges, multi-use paths, park trails, and designated sidewalks. As defined earlier, a Shared Use Path means multi-use path or sidewalk delineated by signage or pavement markings where people cycling share the facility with pedestrians. Stakeholders noted that any Shared Use path should be wider than 1.5 meters.

Figure 4 - Shared Use pathway sign

Figure 5 - Multi-Use Pathway (may or may not be signed as Shared Use)

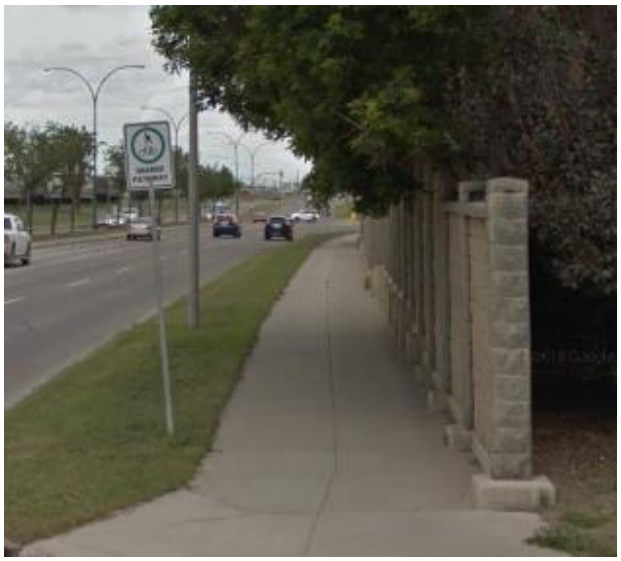

Figure 6 - Sidewalk signed as Shared Use Path

4.2 APPLIED RULES FOR PARK TRAILS TO ALL SHARED-USE FACILITIES

Former Bylaw

Rules for sign compliance, sidewalk riding, due care and attention, passing pedestrians, and rates of speed applied only to park facilities.

Discussion

Shared-Use Paths are not restricted to park settings.

5 BRIDGES

Proposed Bylaw:

In traversing any bridge or river crossing, a person operating a bicycle may:

1) **use that portion of the bridge or river crossing as is intended for the passage of motor vehicles; or,**
2) **use the sidewalk portion of any bridge or river crossing as a Shared-Use Path.**

Change:

- Removed requirement for people cycling to dismount.

5.1 REMOVED REQUIREMENT FOR PEOPLE CYCLING TO DISMOUNT

Former Bylaw

In traversing any bridge or river crossing upon the sidewalk as provided in Section 20(b), every person operating a bicycle shall:

(a) proceed with due care and attention and with reasonable consideration for all pedestrians; and,

(b) yield the right of way to all pedestrians; and,

(c) dismount and walk the bicycle when passing a pedestrian proceeding in the same direction upon such sidewalk.

Discussion

The sidewalks on and approaching bridges and river crossings are designated as Shared-Use Paths and are a significant part of Saskatoon's all Ages and Abilities cycling system and pedestrian network. Many have steep grades that a new or nervous cyclist would not be able to comfortably cross. Therefore, people riding bicycles have the option of using the street or sidewalk. Note that cyclists are not to ride on freeways as per Section 8.

6 CYCLE TRACKS

Proposed Bylaw:

A person riding a bicycle in a cycle track shall travel only in the direction designated for that lane.

Vehicles other than bicycles may not drive, stand, stop or park in an exclusive bicycle lane or cycle track except:

1) **where the bicycle lane marking is dashed, motor vehicles may, when safe to do so, merge into the bicycle lane to make a turn.**
2) **where the bicycle lane is located between the travel lane and the parking lane, motor vehicles may, when safe to do so, cross the bicycle lane for parking the vehicle.**

Changes

- Added requirement for people cycling to ride in the direction of traffic.
- Removed requirement for people riding bicycles to use only exclusive bicycle lanes if present.

6.1 ADDED REQUIREMENT FOR PEOPLE CYCLING TO RIDE IN THE DIRECTION OF TRAFFIC

Former Bylaw

Did not specify direction of travel for cycle tracks or exclusive bicycle lanes.

Discussion

People must bike with the direction of traffic on a cycle track including an exclusive bicycle lane, unless otherwise signed. People riding bicycles are to be as visible and as predictable as possible, especially at conflict points with people driving, such as intersections and exiting driveways. Motorists naturally expect traffic nearest to them to be approaching from the left. A person riding a bike approaching on the right is counter to a turning motorist's expectations.

6.2 REMOVED REQUIREMENT FOR PEOPLE RIDING BICYCLES TO USE ONLY EXCLUSIVE BICYCLE LANES

Former Bylaw

In any location where an exclusive lane for the passage of bicycles has been established and is so designated by traffic signs and pavement markings, every person operating a bicycle shall utilize such lane only, except that any such person may depart from the exclusive bicycle lane when approaching an intersection and indicating an intention to turn by giving the required signal to that effect.

Discussion

Protected bike lanes, raised cycle track and shared paths are all considered part of Saskatoon's All Ages and Abilities (AAA) cycling network. AAA facilities provide separation between people driving and people cycling to ensure safety and comfort for both. AAA facilities provide a level of protection from motor vehicles that is welcoming to cyclists of all skill levels. Nevertheless, people cycling who are

comfortable riding with traffic and are able to sustain higher travel speeds may choose to ride in the traffic lanes with motor vehicles. For this reason, it is current practice not to legislate that cyclists use exclusive bike lanes only. Of cities studied, only Kelowna specifies that a person riding a bicycle must ride on a bicycle path or exclusive bike lane if one is available.

Table 2 - Comparison of Jurisdictions: Must only use exclusive bike lanes	
Calgary	No
Edmonton	No
Kelowna	Must, ride as near as practical to the right side of a highway, within a bicycle path if available
Ottawa	No
Regina	No
Toronto	No
Vancouver	No
Victoria	No
Winnipeg	No

7 MOTORIST OVERTAKING A PERSON RIDING A BICYCLE

Proposed Bylaw:

Every person in charge of a motor vehicle who is overtaking a person travelling on a bicycle on a street with one traffic lane in the direction of travel, shall, as nearly as may be practicable, leave a distance of not less than one meter (or three feet) between the bicycle and the motor vehicle and shall maintain that distance until safely past the bicycle. The one-meter distance required refers to the distance between the extreme right side of the motor vehicle and the extreme left side of the bicycle, including all projections and attachments.

Change:

- Added one-meter passing rule for two-way, single-lane streets.

7.1 ADDED ONE-METER PASSING RULE FOR TWO-WAY, SINGLE-LANE STREETS.

Former Bylaw
Did not address motorists overtaking cyclists.

Discussion
The Cities Act authorizes the City to pass bylaws regulating vehicles and pedestrians on the street as long as they do not conflict with The Traffic Safety Act (TSA) or other provincial legislation. The TSA sets out the basic rules of the road. The City is not able to modify the rules of the road. If the TSA provisions are followed, either the person riding a bicycle or the motor vehicle driver must move into a different lane to pass the person on a bicycle. Section 220 of the TSA indicates that no vehicle shall pass another vehicle unless it is safe to do so. However, the passing rule in the revised bylaw applies to when the traffic lane is reasonably and practicably wide enough for the motor vehicle to pass within the lane providing one-metre of clearance.

Section 228(1) of the provincial Traffic Safety Act addresses the rules of the road regarding traffic lanes:

> 228(1) If a highway is divided into traffic lanes, the following rules apply:
> (a) no driver of a vehicle shall fail to drive as nearly as is practicable entirely within one lane or shall drive from that lane to another unless it is safe to do so;
> (b) no driver of a vehicle shall drive from one traffic lane to another if a solid line exists between lanes except:
> (i) if solid and broken lines exist together, in which case the driver may cross the solid line from a lane in which the broken line exists; or
> (ii) if the lane is designated by signs as a two-way left turn lane;
> (c) no driver of a vehicle shall drive to the left of the centre of the highway where a solid line exists in the right-hand lane near the centre of the highway;
> (d) a driver of a vehicle may drive from one traffic lane to another if broken lines exist between lanes;

(e) no driver of a motorcycle shall drive so that more than two motorcycles move abreast in a traffic lane at any time;
(f) no driver of a motorcycle shall drive beside any other vehicle in the same traffic lane, unless that other vehicle is a motorcycle.

The TSA stipulates that vehicles, especially motor vehicles, are not supposed to "pass" another vehicle, including, a person on a bicycle, within the traffic lane. Either the person riding the bicycle has to move into another lane or the motor vehicle has to move into another lane (usually the left lane). Therefore, according to the TSA, no vehicle other than a motorcycle-sized vehicle can pass another motorcycle-sized vehicle in the same traffic lane.

Table 3 - Comparison of Jurisdictions: One-meter passing rules	
Alberta	Nearing implementation
Newfoundland & Labrador	Yes
Nova Scotia	Yes
Ontario	Yes

8 FREEWAYS

Proposed Bylaw:

No person shall operate a bicycle upon any of those streets set forth in Schedule "A" hereto, except upon that portion of any such street as is clearly set aside and designated for the passage of bicycles.

Change:

- Update of Schedule A: City of Saskatoon Freeway System to include Circle Drive South.

8.1 UPDATED SCHEDULE A: FREEWAY SYSTEM

Former Bylaw

1. Idylwyld Drive from 20th Street south to Circle Drive;
2. Circle Drive South from Idylwyld Drive east to Highway No. 11;
3. Circle Drive North from Millar Avenue east and south to College Drive;
4. Attridge Drive from Circle Drive to Central Avenue;
5. Circle Drive between 33rd Street and Airport Drive.

Discussion

The bylaw has not yet been updated to include Circle Drive South. Therefore, Schedule A, item 5, will be updated to read: "Circle Drive west from Idylwyld Drive South to Airport Drive."

9 PENALTIES

Proposed Bylaw:

The penalty for breach of any of the provisions of this Bylaw shall be as set forth in Schedule "B" hereto.

Every person who breaches any of the provisions of this Bylaw is guilty of an offense and liable on summary conviction to a fine of ($50.00) Dollars, hereinafter referred to as the stipulated penalty.

Change:

- None.

10 ELECTRIC OR POWER ASSISTED BICYCLES

Proposed Bylaw:

"Electric Bicycle" or "Power Assisted Bicycle" means a bicycle that combines muscular power propulsion with electric motor assistance as defined under the Motor Vehicle Safety Regulations (Canada) (C.R.C., c. 1038).

Change:

- Definition of electric bicycle.

10.1 DEFINITION OF ELECTRIC BICYCLE

Former Bylaw
Did not address electric bicycles.

Discussion
Power-assisted bicycles, or 'e-bikes', are becoming more prevalent as they combine muscular power propulsion with power assistance. No additional legislation is recommended at this time.

Under the Motor Vehicle Safety Regulations (Canada) (C.R.C., c. 1038), Section 2(1), provides nationwide parameters:

2 (1) **power-assisted bicycle** means a vehicle that:
(a) has steering handlebars and is equipped with pedals,
(b) is designed to travel on not more than three wheels in contact with the ground,
(c) is capable of being propelled by muscular power,
(d) has one or more electric motors that have, singly or in combination, the following characteristics:
(i) it has a total continuous power output rating, measured at the shaft of each motor, of 500 W or less,
(ii) if it is engaged by the use of muscular power, power assistance immediately ceases when the muscular power ceases,
(iii) if it is engaged by the use of an accelerator controller, power assistance immediately ceases when the brakes are applied, and
(iv) it is incapable of providing further assistance when the bicycle attains a speed of 32 km/h on level ground,
(e) bears a label that is permanently affixed by the manufacturer and appears in a conspicuous location stating, in both official languages, that the vehicle is a power-assisted bicycle as defined in this subsection, and
(f) has one of the following safety features,
(i) an enabling mechanism to turn the electric motor on and off that is separate from the accelerator controller and fitted in such a manner that it is operable by the driver, or

(ii) a mechanism that prevents the motor from being engaged before the bicycle attains a speed of 3 km/h;

Section 247 of the provincial Traffic Safety Act addresses the rules regarding power assisted bicycles:

247(1) No person shall drive a power-assisted bicycle on a highway unless:
(a) that person is 14 years of age or older;
(b) that person and any passenger are wearing, in the prescribed manner, a helmet that meets the prescribed specifications; and
(c) the power-assisted bicycle meets the prescribed equipment and safety standards required for the operation of that power-assisted bicycle.

10.2 FUTURE DIRECTION

Industry and jurisdiction governance is becoming more of an issue across Canada. WSP produced a primer and state of practice review in 2019 titled *Leading the Charge on Canadian E-bike Integration.* Pertinent discussion and recommendations for e-bikes ensue for the sake of discussion.

Bicycle-Style E-Bikes (BSEB): BSEB models have a similar physical appearance to non-motorized or conventional bicycles. In Canada, they are capped at 500 watts of power and a speed of 32km/h. They are also known across the globe as pedal-assist bicycles (PABs), pedelecs, and low-speed electric bicycles (MacArther & Kobel). There are two key typologies within the BSEB category: pedal-assist and throttle-assist. With pedal-assist models, the motor only runs when the rider is pedalling, relieving excess physical strain and expanding the bicycling range. They are most commonly known as pedelecs and PABs.

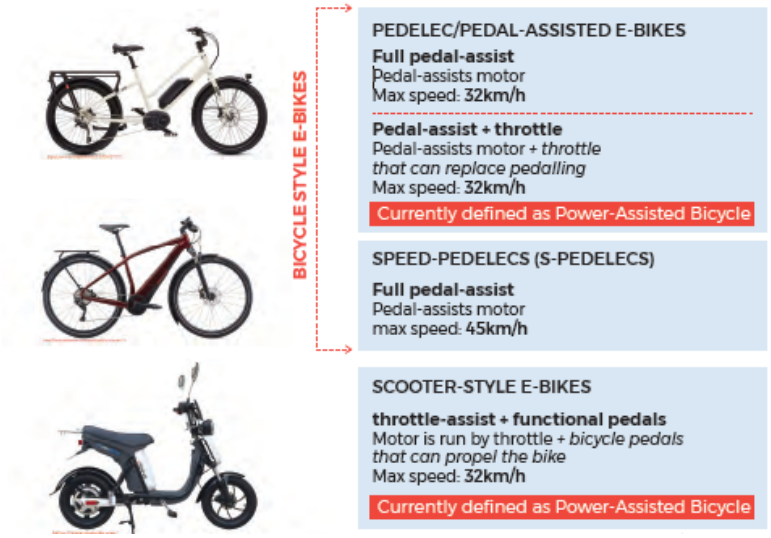

Figure 7- Comparison of e-bikes (WSP, 2019, p. 48)

More powerful speed pedelecs are known as s-pedelecs, and operate at a higher maximum speed of 45km/h. Some pedelecs/PAB models offer a start-up aid, which allows the motor to run briefly (at a maximum speed of 6km/h) to help the rider start after a stop. A start-up aid is not the same functionality as a throttle. Models with start-up aids are still considered pedal-assisted. In contrast, throttle-assist models still operate the motor as the rider pedals, but can also run the motor independently from pedalling through a throttle - normally located on the handlebars. These models are known as throttle-assisted PABs.

Scooter-Style E-bikes (SSEB): SSEB models resemble mopeds in their frame and operate the motor independently from pedalling, via a throttle. However, to comply with the legal definition of an e-bike, SSEB models mandate pedals that could be operated by human-power. As such, SSEB models straddle the definition of electric bicycles; although their pedals are mandated, they are rarely functional. In Canada, they are capped at 500 watts of power and a speed of 32km/h. They are known as e-bikes, electric scooters and electric mopeds.

For the rest of this text, “e-bike” refers to a bicycle-style pedelec type e-bike, unless BSEB or SSEB is used to delineate one from the other.

Table 4 - Comparison of BSEBs and SSEBs

	Bicycle-Style E-Bike	**Scooter-Style E-Bike**
POWER MODE To legally comply with the definition of an e-bike, each model must have pedals that could be operated by human power.	Motor assists pedaling (with the optional throttle)	Motor runs independently from pedaling (with optional pedaling)
BATTERY RANGE For both models, battery life is commonly influenced by the quality of the manufacturer and the frequency of use.	30-70 km on average	~100 km on average
WEIGHT Generally, BSEB models are lighter than SSEB models.	Approximately 22-30 kg	Approximately 75-100 kg
MOTOR LOCATION Depending on the model and location, the location of the motor can vary.	Front-wheel, rear-wheel or hub options	Front-wheel, rear-wheel or hub options
LEGAL CLASSIFICATION Legal classifications vary depending on the region.	Legally classified as a bicycle in Canada	Legally classified as a bicycle in Canada

(Adapted from WSP, 2019, p. 7)

Regulation

Pedelecs and throttle-assisted pedal-assist bicycles are already regulated as bicycles, but are grouped together with Scooter Style E-Bikes (SSEBs). To maximize the potential of pedelecs/PABs as an integrated mobility option, they should be categorized separately from other e-bike models, and from each other. WSP recommends the following:

- Classify full-pedal assist bicycles a Type A-1 and throttle-assisted pedal-assist bicycles Type A-2 with the following stipulations.
    - Permit pedelecs and Permit Type A e-bikes similar to conventional bicycles.
    - Maintain the maximum speed of 32km/h
    - Maintain all other existing requirements of power-assisted bicycles
    - Require a speedometer on Type A e-bikes.
    - Require that the motor cease when human propulsion ceases for pedelecs, and that the motor ceases when brakes are applied for Type A-2.

Currently, s-pedelecs, Type B, are not permitted within the power-assisted bicycle definition as they exceed the maximum 32 km/h speed. The Bicycle Product Suppliers Association permits s-pedelecs as bicycles in their classification model given that the U.S. does not explicitly prohibit e-bikes that can travel at a speed higher than 32 km/h. Currently, Canada does not have a definition for s-pedelecs. Based on the lessons learned from the EU, it is recommended that s-pedelecs be clearly defined in provincial legislation as a type of moped with required licensing that would recognize their pedal-assist nature, but also recognize their increased speed to reduce potential injuries and mode conflicts. WSP recommends the following:

- Define Type B e-bikes as licensed motor vehicles.
- Indicate a unique definition for Type B e-bikes within the existing moped definition

With the above recommendations, SSEBs, classified as Type C, would still exist within the e-bike classification, as they functionally match the legal description of power-assisted bicycles. However, SSEB can be regulated via weight, wheel diameter requirements or specific pedal functionality. In the proposed bylaw, the person riding an e-bike must "pedal for propulsion" thus requiring functioning pedals. WSP recommends the following:

- Define a functional difference between Type A-2 and Type C through regulation requiring human-propulsion, maximum wheel size and maximum weight (similar to Ontario's regulation)
- Require a speedometer on Type C e-bikes
- Prohibit Type C on multi-use trails and other off-road facilities
- Require Type C E-bikes to operate in motor vehicle travel lanes, similar to motor vehicles.

Table 5 – Recommended Regulatory Framework for BSEBs and SSEBs			
Bicycle Style E-Bikes	**PEDELEC/PEDAL-ASSISTED E-BIKES**		**Type A**
	1) Full pedal-assist Pedal-assists motor Max speed: 32km/h	**2) Pedal-assist + throttle** Pedal-assists motor + throttle that can replace pedaling Max speed: 32km/h	
	SPEED-PEDELECS (S-PEDELECS)		**Type B**
	Full pedal-assist Pedal-assists motor Max speed: 45km/h Treated as a motor vehicle. Not allowable under Canada's Motor Vehicle Safety Regulations		
	SCOOTER-STYLE E-BIKES		**Type C**
	Throttle-assist + functional pedals Motor is run by throttle + bicycle pedals that can propel the bike Max speed: 32km/h Delineate from Type A-2 by weight and human propulsion Treated as a motor vehicle.		

Table 6 – Comparison of Jurisdictions: Power-Assisted Bicycles					
	Min. Age	**Helmet required**	**Weight limit (kg)**	**Min. Wheel size**	**Other**
Alberta	12	Yes			
British Columbia	16	Yes			
Manitoba	14	Yes			
Newfoundland & Labrador		Yes			
Ontario	16	Y	120	35mm/350 mm	
Toronto			40		
Ottawa			55		No hand or foot clutch
Saskatchewan	14	Yes			

Other provinces add no other requirements or reference Government of Canada's Motor Vehicle Safety Regulations.

11 HELMETS

Proposed Bylaw:

- None, but the City will continue to recommend helmet use by all cyclists and passengers and encourage provincial legislation for cyclists under 18 years of age.

Change:

- None.

11.1 DISCUSSION

Saskatchewan has no helmet legislation at the provincial level, yet this has not precluded cities from enacting rules regarding helmets. For example, both Yorkton and Moose Jaw have adopted bylaws requiring mandatory helmet use; Yorkton's law applies to all cyclists, while Moose Jaw's applies to cyclists under 18 years of age.

Helmet use while cycling is regulated in seven provinces. Helmets are mandatory for all ages in British Columbia, New Brunswick, Newfoundland & Labrador, Nova Scotia and Ontario. Helmets are mandatory for those under 18 in Alberta and Manitoba.

Notwithstanding regulation, opponents to helmet regulation cite that the expense of helmets is a barrier to increasing cycling mode share and that motorists take greater risks when approaching cyclist wearing helmets.

The Administration will continue to recommend helmet use by all cyclists and passengers and encourage provincial legislation for cyclists under 18.

Table 7 – Comparison of Jurisdictions: Helmets Required

	Status
Alberta	Under 18
British Columbia	All Ages
Manitoba	Under 18
New Brunswick	All Ages
Newfoundland & Labrador	All Ages
Northwest Territories	None
Nova Scotia	All Ages
Nunavut	None
Ontario	All Ages
Prince Edward Island	None
Quebec	None
Saskatchewan	None
Yukon	None

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REGULATIONS REVIEWED

SASKATCHEWAN	The Traffic Safety Act, Chapter T-18.1
Regina	Bylaw No. 9900
ALBERTA	Traffic Safety Act
Edmonton	Bylaw 5590 - Traffic Bylaw
Edmonton	Bylaw 2202 - Parkland Bylaw (Trail Use)
Calgary	Traffic Bylaw Number 26M96
Calgary	Parks and Pathways Bylaw Number 20M2003
BRITISH COLUMBIA	Motor Vehicle Act [RSBC 1996] Chapter 318
Kelowna	Consolidated Traffic Bylaw No. 8120
Victoria	Streets and Traffic Bylaw No. 09-079
Vancouver	Street and Traffic Bylaw No. 2849
MANITOBA	The Highway Traffic Act, C.C.S.M. c. H60
Winnipeg	Traffic By-Law No. 1573/77
ONTARIO	Highway Traffic Act, R.S.O. 1990, c. H.8
Toronto	Toronto Municipal Code Chapter 886, Footpaths, Pedestrian Ways, Bicycle Paths, and Cycle Tracks
Toronto	Toronto Municipal Code Chapter 950, Traffic and Parking
Ottawa	By-Law No. 2003-530
OREGON	Oregon Revised Statutes, Vol. 17
Portland	City Charter, Title 16 Vehicles and Traffic

APPENDIX A: BICYCLE BYLAW, NO. 6884

Bylaw No. 6884

A Bylaw of The City of Saskatoon to control and regulate the operation of bicycles upon and in the streets, parks, and other places in the City of Saskatoon.

Codified to Bylaw No. 8994
(December 19, 2011)

BYLAW NO. 6884

A Bylaw of The City of Saskatoon to control and regulate the operation of bicycles upon and in the streets, parks, and other places in the City of Saskatoon.

The Council of The City of Saskatoon enacts as follows:

Short Title, Interpretation and Application

Short Title

1. This Bylaw may be cited as "The Bicycle Bylaw".

Interpretation

2. In this Bylaw:

(a) "Act" means The Highway Traffic Act of the Province of Saskatchewan and all amendments thereto;

(b) "bicycle" means any muscular propelled, chain-driven wheeled device in, on, or by which a person is or may be transported or drawn;

(c) "curb" means the dividing line between that portion of any street intended for the passage of motor vehicles and that intended primarily for the use of pedestrians, whether marked with any form of curbstone or not;

(d) "License Bylaw" means Bylaw No. 6066 of The City of Saskatoon and all amendments thereto;

(e) "park" means any improved or unimproved lands owned by or subject to the direction and control of The City of Saskatoon and intended for the recreational use and enjoyment of the general public, and, without limitation, includes all those areas encompassed by what is commonly known as the Meewasin Valley Trail, and all lands and environs associated therewith;

(f) "pedestrian" means any person on foot or in a wheelchair;

(g) "sidewalk" means that portion of any street intended primarily for use by pedestrians;

(h) "street" means all or any part of a road allowance, highway, road, lane, bridge, place, alley, square, thoroughfare, or way intended for or used by the general public for the passage of vehicles or pedestrians;

(i) "Traffic Bylaw" means Bylaw No. 4284 of The City of Saskatoon and all amendments thereto;

(j) "traffic sign" means any sign, signal, marking, or other device, placed painted, or erected for the guidance, regulation, warning, direction, or prohibition of traffic;

(k) any other words shall, insofar as they are not inconsistent with this Bylaw, have the same meaning as in the Act.

3. **Application**

This Bylaw shall apply to the operation of all bicycles upon or in the streets, parks, and other public places in the City of Saskatoon.

LICENSE

4. Repealed by Bylaw No. 7387 - December 20, 1993

EQUIPMENT

5. **Brakes**

No person shall operate a bicycle unless such bicycle is equipped with a braking mechanism adequate to control the movement of and to stop the bicycle whenever necessary. All such braking mechanisms shall be maintained in efficient working condition at all times.

6. **Horn or Bell**

No person shall operate a bicycle unless such bicycle is equipped with a horn or bell capable of emitting sound audible under normal conditions for a distance of not less than thirty-five (35) metres.

7. **Lights and Reflective Devices**

No person shall operate a bicycle during the period from one-half hour after sunset to one-half hour before sunrise, or at any other time when conditions of poor visibility exist, unless such bicycle is equipped with and displays an operating headlight together with a red rear light or reflective device.

OPERATION

8. **Position on Street**

Every person operating a bicycle shall utilize only that portion of the street as is intended for the passage of motor vehicles and shall be so positioned thereon as to be as close as is reasonably practicable to the right hand curb, except that any such person operating a bicycle may leave the proximity of the right hand curb when approaching an intersection and indicating an intention to turn by giving the required signal to that effect.

9. **Two Abreast**

Except as is necessary for the purpose of passing, no person shall operate a bicycle on the left side of any two other bicycles being operated abreast.

10. **Stunting**

Every person operating a bicycle shall have at least one hand on the handle bars at all times, and no person operating a bicycle shall perform or engage in any acrobatic or other stunt.

11. **Passengers**

No person shall operate a bicycle while carrying thereon any other person, except that such person may carry one passenger where the bicycle is equipped with a properly constructed pillion seat securely fastened over the rear wheel thereof.

12. **Loads**

No person shall operate a bicycle while carrying thereon any load in excess of twenty-five (25) kilograms, nor shall such load extend to a greater width that forty-five (45) centimetres on either side of the center line of the bicycle, nor to such a height as would obstruct the clear vision in all directions of the person operating the bicycle while seated on the seat thereof.

BICYCLE LANES

13. In any location where an exclusive lane for the passage of bicycles has been established and is so designated by traffic signs and pavement markings, every person operating a bicycle shall utilize such lane only, except that any such person may depart from the exclusive bicycle lane when approaching an intersection and indicating an intention to turn by giving the required signal to that effect.

PARKS

14. **Comply with Traffic Signs**

Every person operating a bicycle in a park shall comply with the directions or regulations contained on any traffic sign in such park.

15. **Due Care and Attention**

Every person operating a bicycle in a park shall do so with due care and attention and with reasonable consideration for other persons in such park.

16. **Yield Right of Way**

Every person operating a bicycle in a park shall yield the right of way to any pedestrian therein.

17. **Operating on Left Prohibited**

Every person operating a bicycle upon any sidewalk, trail, or path in a park shall, except when overtaking and passing a pedestrian or bicyclist proceeding in the same direction, operate the bicycle to the right of the center of any such sidewalk, trail, or path.

18. **Passing and Overtaking**

Every person operating a bicycle upon any sidewalk, trail, or path in a park shall sound a horn or bell prior to overtaking and passing any pedestrian or bicyclist proceeding in the same direction upon any such sidewalk, trail, or path.

19. **Rate of Speed**

No person shall operate a bicycle in a park at an immoderate rate of speed, or so as to startle, endanger, or interfere with any other person in such park.

BRIDGES

20. In traversing any bridge or river crossing a person operating a bicycle may:

(a) subject to Section 22, utilize that portion of the bridge or river crossing as is intended for the passage of motor vehicles; or,

(b) notwithstanding any other provision hereof, utilize the sidewalk portion of any bridge or river crossing.

21. **Crossing on Sidewalk**

In traversing any bridge or river crossing upon the sidewalk as provided in Section 20(b), every person operating a bicycle shall:

(a) proceed with due care and attention and with reasonable consideration for all pedestrians; and,

(b) yield the right of way to all pedestrians; and,

(c) dismount and walk the bicycle when passing a pedestrian proceeding in the same direction upon such sidewalk.

FREEWAY SYSTEM

22. **Freeways**

No person shall operate a bicycle upon any of those streets set forth in Schedule "A" hereto, except upon that portion of any such street as is clearly set aside and designated for the passage of bicycles.

PENALTIES

23. The penalty for breach of any of the provisions of this Bylaw shall be as set forth in Schedule "B" hereto.

MISCELLANEOUS AND TRANSITION

24. **Application of Act and Traffic Bylaw**

Except to the extent that they are inconsistent herewith, the relevant provisions of both the Traffic Bylaw and the Act are applicable to the operation of bicycles in the City of Saskatoon.

25. **Paramountcy**

In the event of any conflict between the provisions of this Bylaw and those contained in Parks Bylaw No. 3187 of The City of Saskatoon, the provisions of this Bylaw shall govern and supersede such Bylaw No. 3187.

26. **Consequential Amendments**

Paragraphs 4-26, 4-27, and 10-1 through 10-9 inclusive of the Traffic Bylaw, together with the penalties applicable thereto as set forth in Schedule 12-1 of the Traffic Bylaw, are hereby repealed.

27. **Coming into Force**

This Bylaw shall come into force and take effect on the 2nd day of May, A.D. 1988.

Read a first time this 2nd day of May, A.D. 1988.
Read a second time this 2nd day of May, A.D. 1988.
Read a third time and passed this 2nd day of May, A.D. 1988.

"C. Wright"
Mayor

"Susan MacKeigan"
Acting City Clerk

(SEAL)

"APPROVED IN ACCORDANCE WITH PROVISIONS
OF THE URBAN MUNICIPALITY ACT, 1984
DATE: June 23, 1988
D. Abbey
HIGHWAY TRAFFIC BOARD"

SCHEDULE "A"

CITY OF SASKATOON FREEWAY SYSTEM

1. Idylwyld Drive from 20th Street south to Circle Drive;

2. Circle Drive South from Idylwyld Drive east to Highway No. 11;

3. Circle Drive North from Millar Avenue east and south to College Drive;

4. Attridge Drive from Circle Drive to Central Avenue;

5. Circle Drive between 33rd Street and Airport Drive.

SCHEDULE "B"

PENALTIES

1. Every person who breaches any of the provisions of this Bylaw is guilty of an offense and liable on summary conviction to a fine of Fifty ($50.00) Dollars, hereinafter referred to as the stipulated penalty.

2. The stipulated penalty shall be discounted to the amount of Twenty-five ($25.00) Dollars, hereinafter referred to as the discounted penalty, if paid or remitted on a voluntary basis in accordance with the provisions set forth hereunder:

   (a) The Police Department of The City of Saskatoon shall issue a Notice in a form approved by the Chief of such Department to every person alleged to have breached any provision of this Bylaw, requiring every such person to pay or remit unto the City Treasurer of The City of Saskatoon the discounted penalty within fourteen (14) calendar days of the date of the Notice.

   (b) The discounted penalty may be paid or remitted in any of the following manners:

      (i) in person, during regular office hours, to the cashier located at City Hall, Saskatoon, Saskatchewan; or,

      (ii) by deposit, at the depository located at the main entrance to City Hall, Saskatoon, Saskatchewan; or,

      (iii) by mail, postmarked within the prescribed fourteen (14) day period, to the Office of the City Treasurer, City Hall, Saskatoon, Saskatchewan, S7K 0J5.

      Any person requiring a receipt shall attend and pay in person as provided in sub-paragraph (i) above.

   (c) Upon payment of the discounted penalty in the manner provided herein, no person shall be liable to prosecution with respect to the circumstance described in the Notice to which such payment pertains.

3. The stipulated penalty may be paid in the manner provided herein at any time prior to the date that a person is required to appear in Court to answer a charge under this Bylaw, and, upon payment, the person shall not be liable to further prosecution with respect to such charge.

APPENDIX B: STAKEHOLDER ENGAGEMENT

STAKEHOLDER ENGAGEMENT

INITIAL ENGAGEMENT

The project invited 14 stakeholder organizations and two City of Saskatoon Advisory Committees to comment on the current bylaw and to submit considerations for a new bylaw. The engagement consisted of an initial meeting with each group to explain the goals and objectives as well as detailed explanations on the application and limitations of bylaws. Three organizations responded with detailed recommendations, seven had general comments; three had detailed comments pertaining to helmet use, and the rest declined to respond formally.

Organization	**Response**
Biketrix (e-bike manufacturer)	General comments
Canadian Paediatric Society (CPS)	Recommendation pertaining to helmets
City of Saskatoon Accessibility Advisory Committee	Asked to be informed only
City of Saskatoon Traffic Safety Committee (now dissolved)	Stressed need for conformity with TSA
Greater Saskatoon Catholic Schools (GSCS)	General comments
Meewasin Valley Authority (MVA)	General comments
Saskatchewan Cycling Association (SCA)	Asked to be informed only
Saskatchewan Government Insurance (SGI)	Stressed need for conformity with TSA
Saskatchewan Health Authority (SHA)	Detailed recommendations Recommendation pertaining to helmets
Saskatchewan Prevention Institute (SPI)	Recommendation pertaining to helmets
Saskatoon and District Safety Council (SDSC)	Stressed need for conformity with TSA
Saskatoon Council on Aging	Asked to be informed only
Saskatoon Cycles (SC)	Detailed recommendations
Saskatoon Public Schools (SPS)	General comments
Walking Saskatoon (WS)	Detailed recommendations

The following table lists recommendations from stakeholders and whether the changes were included in the proposed new bylaw.

	Recommended by	**Included in proposed bylaw**
OPERATION		
Remove requirement for people cycling to ride as close to curb as practicable	SC, SHA	Yes
Removed stunting prohibition	SC	Yes
Added hand signaling requirement		
Clarified the number of passengers allowed	SC	Yes
Clarified allowable loads	SC, SHA	Yes
BICYCLE EQUIPMENT		
Remove Bell Requirement	SC	No
SIDEWALKS		
Clarified Shared Use designation	SC, SHA	Yes
Added applicability to children under 14	SC, GSCS, SPS, SHA, WS	Yes
If the street has become hazardous, allow people to ride bikes on sidewalks at pedestrian speed	SC, SHA, WS	No
SHARED-USE PATHS		
Applied rules for park trails to all shared-use facilities	WS	Yes
If a cyclist might startle due to large load or narrow passing room, shall dismount.	WS	No
INTERSECTIONS		
Crosswalks, dismount or ride at pedestrian speed	WS	No
BRIDGES		
Removed requirement for people cycling to dismount	SHA	Yes
EXCLUSIVE BICYCLE LANES		
Removed requirement for people riding bicycles to use only exclusive bicycle lanes	SC, SHA	Yes
MOTORIST OVERTAKING A PERSON RIDING A BICYCLE		
Added one-meter passing rule for two-way, single-lane streets.	SC, SHA	Yes
HELMETS		
Mandatory helmets for youth	CPS	No
Mandatory helmet use for all	SPI, SDSC	No
Encourage the use of bike helmets	SHA, SC	Yes

ROUNDTABLE MEETING

The stakeholder engagement concluded with a roundtable meeting on September 26, 2019 with all stakeholders in addition to the Active Transportation Advisory Group (ATAG). The Administration presented the proposed bicycle bylaw. Most items were accepted unanimously except the items dealing with sidewalk riding and helmet use.

Participants:	Al Reichert – Saskatoon Safety Council Cora Janzen – Population and Public Health – Saskatchewan Health Authority Curt McCoshen – Bus Riders of Saskatoon Dwight Kirkpatrick – Saskatoon Public School Division Erin Akins – University of Saskatchewan Ingrid Larson – Saskatoon Cycles Jasmine Hasselback – Population and Public Health – Saskatoon – Saskatchewan Health Authority Jeananne Klein – Saskatoon Council on Aging Joel Lloyd – Greater Saskatoon Catholic Schools Kelly Klassen – SGI Sherry Faris – SaskAbilities Paula Lichtenwald – Tourism Saskatoon Tim Brown – Member of Public Tyler Rittinger – Saskatoon Public School Division Verna Gallen – Walking Saskatoon
City of Saskatoon:	Danae Balogun – Active Transportation Manager Carly Grassing – Transportation Engineer Jay Magus – Director of Transportation Marina Melchiorre – Senior Transportation Engineer Councillor Dubois Sharon Cybulski – Assistant to Director of Transportation (recorder)
Regrets:	Alan Otterbein – Meewasin Cara Zukewich – Saskatchewan Prevention Institute Dr. Karen Leis – Canadian Paediatric Society Wayne MacDonald – Saskatoon Cycles Councillor Loewen Jordan Sherbino – Policy and Communications Advisor, Office of the Mayor

1 Introductions

Danae welcomed everyone to the meeting. Meeting started at 3:03 pm. Roundtable introductions were done.

2 Bicycle Bylaw Overview

Marina reviewed the principles of the update and timelines regarding amendments to the bike bylaw. The bylaw encompasses behaviour for others as well as cyclists.

Administration will present the draft bike bylaw report at the Standing Policy Committee on Transportation on November 4, 2019 and at City Council on November 18, 2019. City Solicitor's Office will then review wording for the bylaw. It is anticipated the bylaw would be enacted in spring 2020 followed by education and enforcement campaigns.

Participants were invited to submit written questions to Marina by October 9 so they can be incorporated into the draft bike bylaw report before it goes to Standing Policy Committee on Transportation.

Power-assisted bicycles won't be discussed today. They are controlled federally.

3 Discussion of draft modifications to bike bylaws

Helmets
City will recommend helmet use for all cyclists and recommend provincial legislation for cyclists under 18 years of age.

Comments/feedback:

- Support for mandatory use of helmets. (Saskatoon Safety Council)
- Support for promoting helmet use and not mandating as it has risks, especially for people who can't afford helmet. (Population and Public Health – Saskatchewan Health Authority)
- Helmet requirements is a barrier for bike sharing programs. (University of Saskatchewan)
- Inquiry about any data on socio-economic concerns from other provinces. (Greater Saskatoon Catholic Schools) Administration will do further investigation on what other provinces are doing in terms of socio-economic concerns regarding helmet use.
- Some research studies regarding helmet use and reducing head injuries had research methodological errors. It was noted that controlling exposure to risk for the likelihood of injury (prevention) was more effective.

There was consensus on the recommendation regarding helmets.

Motorist Overtaking a Person Riding a Bicycle (1 meter rule)
Recommendation to add one-meter passing rule for two-way, single-lane streets.

Comments/feedback:

- One meter is not very far for a bus or truck. Air around these vehicles will create difficulty for a cyclist going down the street. Important to emphasize distance of at least one meter. (Saskatoon Safety Council)
- Important to communicate how long a meter is. One meter rule is also known as the three foot rule. (Tourism Saskatoon)
- Language regarding this is confusing and is subjective to interpretation. Language needs to be strengthened.

There was consensus on the concept.

Sidewalks
No person over the age of 14 shall ride on sidewalks. Can ride on sidewalks if designated as shared-use paths.

Comments/feedback:

- Suggest designating more places like Taylor Street. Need to make transitions from street to sidewalk level easier. (Bus Riders of Saskatoon)
- More sidewalks should be designated as shared use. More bike education is needed on how to ride on a sidewalk. (Saskatoon Cycles)
- Need to do an analysis of streets where riding on sidewalks is happening most frequently. People are more likely to ride on sidewalks where they feel safer.

- It was noted there is no safe place to ride on the following streets: 22nd Street, 8th Street, Idylwyld Drive and College Drive. Other high volume streets are 54th Street and Clarence Avenue. Snow clearance is an issue for winter cyclists. More work is needed.
- Pedestrian safety as it relates to cyclists riding on sidewalks is an issue, especially on shared paths. (Walking Saskatoon) Walking Saskatoon also noted a preference for cyclists to have separate facilities.
- It was noted there are sometimes more bikes on sidewalks than pedestrians.
- Size of sidewalks is concern; not all sidewalks can accommodate shared use.
- Education is needed regarding pedestrian courtesy on designated sidewalks.

There was consensus on the concept.

Shared-Use Paths
See wording on page 20 of the draft bylaw.

Comments/feedback:

- Don't use the shared pathway on Preston Avenue from 14th Street to College Drive because you don't get any indication that a bike is coming. (Saskatoon Council on Aging)
- Shared-use paths are not ideal. The best scenario would be for each stream to have their own path.
- Biggest risks on shared-use path is to the young and elderly. (Walking Saskatoon)
- Education about shared-use path becomes primary.
- University of Saskatchewan has a traffic bylaw that applies to their grounds. Important to work together with Meewasin, University and the City to ensure interpretation of what is considered a sidewalk and shared-use path is consistent. All paths at the university are shared-use path. (University of Saskatchewan)
- Need clarity on what is meant by moderate rate of speed (walking or jogging speed). Suggest putting definition in the bylaw. (Walking Saskatoon)
- Education is needed for everyone on shared-use paths. (Saskatoon Safety Council)
- Challenges encountered include cyclists not yelling or using bell when passing pedestrians and pedestrians with headphones/earbuds not hearing what is going on around them.

There was consensus on the concept.

Bridges
Bridge is considered a street.

Comments/feedback:

- Provide clarification on what is meant by river crossing so as not to include freeways.
- Inquiry if there should be one-way cycling traffic on bridge crossing. Currently not under consideration at this time.

There was consensus on the concept.

Cycle Tracks
Designated areas for cyclists only. Replaces exclusive bike lane in the bylaw.

They are adjacent to the driving lane on College Drive, Warman Road and Preston Avenue. People could be ticketed for parking in bike lanes.

Comments/feedback:

- Written feedback received from Saskatoon Safety Council.

There was consensus on the concept.

Operation

Follow the same rules in *The Traffic Safety Act*.

Comments/feedback:

- Inquiry about impairment. This is covered under *The Traffic Safety Act* as well as cell phone use.

There was consensus on the concept.

Bicycle Equipment

Comments/feedback:

- Requirement to have lights would be a barrier to low income people; lights are expensive and there is a risk they could be stolen.
- Keep red reflectors in the bylaw.

There was general consensus on the concept.

Freeways

No cycling on freeways. Update to include Circle Drive South.

Comments/feedback:

- Need to clearly identify prohibition for cycling on freeways.

There was general consensus on the concept.

Additional Comments

Appreciation was extended to participants for their feedback.
Participants were encouraged to forward written comments to Marina by October 9.
Participants are welcome to speak at the City Council meeting on November 18.

Saskatoon Safety Council representative appreciated the opportunity to provide input. Using roadways safely is a priority and the bike bylaw will help in that.

APPENDIX C: STAKEHOLDER CORRESPONDENCE

CANADIAN PAEDIATRIC SOCIETY (CPS)

Canadian Paediatric Society / Société canadienne de pédiatrie

October 30th 2018

To the City of Saskatoon:

Although bicycling is an enjoyable activity and a popular mode of transportation, it is also a leading cause of injuries in Canadian children and youth. Head injuries in particular can cause life long consequences, and represent half of hospitalizations for bicycling injuries in children.[i] It has now been well documented in the medical literature that helmets have a protective effect on head and facial injuries.[ii] [iii] Riders are more likely to wear helmets where mandatory bike helmet laws are in place, and injury rates are at least 25% lower compared to areas without legislation.[iv]

Concerns around helmet legislation have centered on a few issues. Firstly, the question of decreased ridership has been examined and most Canadian studies show that mandatory helmets have no effect on bicycling rates.[v] Secondly, it appears that legislation will increase helmet use substantially even without enforcement, however for this effect to be maintained long term, some level of moderate enforcement is needed.[vi] Finally, accessibility of helmets is of primary importance, and subsidy programs and/or rebates for lower income riders have been implemented elsewhere successfully.[vii] Given that citizens experiencing poverty have an increased risk of preventable injuries[viii], helmet legislation coupled with measures to make helmets more available and affordable, would be an effective strategy to improve the health of this vulnerable sector of our city.

The Canadian Paedatric Society (CPS) recommends that all jurisdictions in Canada legislate and enforce bicycle helmet use for all ages.[ix] Unfortunately, the province of Saskatchewan has lagged behind and is one of only two provinces that scores poorly with respect to helmet legislation, in the CPS status report on Canadian public policy and child and youth health.[x] Other recommendations include rolling out legislation with an education campaign on the importance of helmet use, incorporating other strategies to prevent bicycling injuries such as separation of riders from motor traffic, and implementing programs to make bike helmets less expensive.

The cities of Moose Jaw and North Battleford have already implemented mandatory bike helmets for youth. The city of Saskatoon now has an opportunity to also show leadership in this area, and improve the safety of all its riders, by making use of bicycle helmets mandatory for all ages.

Sincerely,

Dr. Karen Leis
General Pediatrician, Saskatoon
Canadian Paediatric Society Board Member

[i] Hu X, Wesson DE, Chipman ML, Parkin PC. Bicycling exposure and severe injuries in school-age children: A population-based study. Arch Pediatr Adolesc Med 1995;149(4):437-41.

[ii] Thompson DC, Rivara FP, Thompson R. Helmets for preventing head and facial injuries in bicyclists. Cochrane Database Syst Rev 2000;(2):CD001855.

[iii] Elvik R. Publication bias and time-trend bias in meta-analysis of bicycle helmet efficacy: A re-analysis of Attewell, Glase and McFadden, 2001. Accid Anal Prev 2011;43(3):1245-51.

[iv] Macpherson A, Spinks A. Bicycle helmet legislation for the uptake of helmet use and prevention of head injuries. Cochrane Database of Systematic Reviews 2007, Issue 2. DOI: 0.1002/14651858.CD005401.pub2.

[v] Dennis J, Potter B, Ramsay T, Zarychanski R. The effects of provincial bicycle helmet legislation on helmet use and bicycle ridership in Canada. Inj Prev 2010;16(4):219-24.

[vi] LeBlanc JC, Beattie TL, Culligan C. Effect of legislation on the use of bicycle helmets. CMAJ 2002;166(5):592-5.

[vii] "Low Cost Bike Helmet Program Extended", *Winnipeg Sun*, May 30th, 2012, https://winnipegsun.com/2012/05/30/low-cost-bike-helmet-program-coming/wcm/9e6b6d8c-bc13-4c78-a511-33d4b59631d2

[viii] Yanchar NL, Warda LJ, Fuselli P; Canadian Paediatric Soceity, Injury Prevention Committee. Child and youth injury prevention: A public health approach. Paediatr Child Health 2012;17(9):511.

[ix]Hagel BE, Yanchar NL; Canadian Paediatric Society, Injury Prevention Committee. Bicycle helmet use in Canada: The need for legislation to reduce the risk of head injury. Paediatr Child Health 2013;18(9):475-80.

[x] Canadian Paediatric Society, 2012. Are We Doing Enough? A status report on Canadian public policy and child and youth health.

Position statement

Bicycle helmet use in Canada: The need for legislation to reduce the risk of head injury

Brent E Hagel, Natalie L Yanchar; Canadian Paediatric Society
, Injury Prevention Committee
Paediatr Child Health 2013;18(9):475-80
Posted: Nov 1 2013

Abstract

Bicycling is a popular activity and a healthy, environmentally friendly form of transportation. However, it is also a leading cause of sport and recreational injury in children and adolescents. Head injuries are among the most severe injuries sustained while bicycling, justifying the implementation of bicycle helmet legislation by many provinces. There is evidence that bicycle helmet legislation increases helmet use and reduces head injury risk. Evidence for unintended consequences of helmet legislation, such as reduced bicycling and greater risk-taking, is weak and conflicting. Both research evidence to date and recognition of the substantial impact of traumatic brain injuries support the recommendation for all-ages bicycle helmet legislation.

Key Words: Bicycle helmet; Head injuries; Legislation

Bicycling is a popular activity and form of transportation in Canada for children, adolescents and adults. The percentage of children that have ridden a bicycle at least once in the past 12 months is 91% for children five to 12 years of age and 77% for youth 13 to 17 years of age.[1] While the physical activity associated with riding a bicycle can have significant health benefits, injuries can and do occur.

Bicycling injuries

Bicycling-related injuries among Canadian children and youth account for approximately 4% of all injuries encountered in the emergency department (ED),[2][3] 7% of all hospital admissions for unintentional injury for those younger than 15 years of age,[4] and are the fifth-leading cause of child and youth hospitalization (2079 in 2001/2002).[5] In terms of mortality, they comprise 5% of all deaths due to unintentional injury for children younger than 15 years of age in Canada.[4] Between 30%[6] and 53% of bicycling fatalities occur in children and youth, with most resulting from collisions with motor vehicles.[7]

There are large variations in population-based rates of bicycling-related injuries due to several factors. Adolescents, particularly males, have the highest rates of bicycling-related injuries involving motor vehicle collisions, ranging from 28 to 56 per 100,000 population.[8][9] Rates of hospitalization for children and youth range from 33.9 injuries per 100,000 in urban areas to 50 injuries per 100,000 in rural areas.[10] Overall death rates in Canada are estimated to be 0.27 per 100,000 population.[6]

Bicycling-related head injuries

Head injuries rank among the most severe injuries in bicyclists, representing 20% to 40% of all bicycling injuries encountered in Canadian EDs.[2][3][11]-[14] Considering only hospital admissions, head injuries represent approximately one-half of all bicycling injuries in children and youth.[11][15] Ultimately, head injuries account for 45% to 100% of child and youth bicycling deaths.[16]-[20] Therefore, head injuries represent the most severe injuries that occur among child and youth bicyclists and, as such, are an important target for injury prevention.

Helmet use and head injury risk

Two systematic reviews have demonstrated that helmets reduce the risk of head injuries while cycling.

[21][22] In one Cochrane review, helmets were estimated to reduce the risk of head and brain injuries by 69%, severe brain injuries by 74% and facial injuries by 65%, with similar effects for cyclists in collisions with motor vehicles and across all age groups.[22] Another study[21] found that helmets reduced head injury risk by 60%, brain injury risk by 58%, facial injuries by 47% and fatal injury by 73%. The latter study did note an indication of greater risk of neck injuries among helmet users (OR 1.36 [95% CI 1.0 to 1.86]), which "…may not be applicable to the lighter helmets currently in use".[21] Investigators concluded that their results were "applicable to riders of all ages, both in less severe crashes, and in collisions with motor vehicles."[21] A reanalysis of this study in 2011, which included more recent studies and adjustment for potential sources of bias, confirmed the protective effect of helmets on head injuries and facial injuries, although the effects were attenuated.[23]

Helmet legislation and helmet use

Systematic reviews have also demonstrated that legislation increases the use of helmets in children and youth.[24][25] One review showed that bicycle helmet use increased postlegislation, with more than one-half of the included studies demonstrating an increase of at least 30%.[24] The odds of helmet use more than quadrupled with legislation, and this effect was consistent for areas with legislation for riders younger than 16 years of age and in areas where all-ages legislation was in place.[24] Similarly, a Cochrane systematic review of child and youth bicycle helmet legislation found a significant increase in helmet use both postlegislation and with enforcement of existing legislation.[25]

Many of the studies examining the association between helmet use and bicycle helmet legislation in Canada have found increases in the postlaw period (Table 1). One Ontario study noted a 20% increase in helmet use among children five to 14 years of age two years after passage of helmet legislation covering riders younger than 18 years of age, demonstrating larger increases in low- and middle-income areas.[26] A follow-up study found that helmet prevalence fell to prelegislation levels for low- and middle-income areas while remaining elevated in high-income areas six years postlegislation.[27] After the introduction of all-ages bicycle helmet legislation in 1996 in British Columbia, helmet use increased 18% among children younger than six years of age and 26% among riders six to 15 years of age.[28] Another study found that helmet use increased 35% among children, 41% among adolescents and 50% among adults after all-ages legislation passed in Nova Scotia.[29] Helmet use increased from 72% to 95% among children younger than 13 years of age and more than doubled among adolescents after helmet legislation covering riders younger than 18 years of age came into effect in Alberta.[30] Based on national Canadian Community Health Survey self-report data, a recent study has found the likelihood of helmet use to be greatest in provinces with all-ages legislation, followed by regions with laws covering riders younger than 18 years of age, and lowest where there is no helmet legislation; these trends were evident for both adolescents and adults.[31]

TABLE 1
Changes in helmet use following the implementation of bicycle helmet legislation in Canada

Author [reference], year	Age group covered	Year implemented	User prevalence		Postlaw increase
			Prelegislation	Postlegislation	
Parkin et al [26], 2003	<18 years of age	1995	5–14 years of age: LI: 33% in 1995 MI: 50% in 1995 HI: 73% in 1995 Total: 46% in 1995	5–14 years of age: LI: 61% in 1996 MI: 79% in 1996 HI: 77% in 1996 Total: 66% in 1997	5–14 years of age: LI: 28% MI: 29% HI: 4% Total: 20% (1997)
Macpherson et al [27], 2006	<18 years of age	1995	5–14 years of age: LI: 33% in 1995 MI: 50% in 1995 HI: 73.1% in 1995	5–14 years of age: LI: 33% in 2001 MI: 50.4% in 2001 HI: 84.5% in 2001	5–14 years of age: LI: 0% MI: 0.4% HI: 11.4%
Foss and Beirness [28], 2000	All ages	1996	1–5 years of age: 60% in 1995	1–5 years of age: 78% in 1999	1–5 years of age: 18%
			6–15 years of age: 35% in 1995	6–15 years of age: 61% in 1999	6–15 years of age: 26%
			16–30 years of age: 47% in 1995	16–30 years of age: 69% in 1999	16–30 years of age: 22%
LeBlanc et al [29], 2002	All ages	1997	Child: 49% in 1995/1996	Child: 84% in 1998/1999	Child: 35%
			Adolescent: 29% in 1995/1996	Adolescent: 70% in 1998/1999	Adolescent: 41%
Karkhaneh et al [30], 2011	<18 years of age	2002	<13 years of age: 72% in 2000	<13 years of age: 95% in 2006	<13 years of age: 23%
			13–17 years of age: 30% in 2000	13–17 years of age: 63% in 2006	13–17 years of age: 33%

LI Low income; HI High income; MI Middle income

Helmet legislation and head injuries

Of the three studies included in a systematic review examining changes in head injury risk pre- and postlegislation, two indicated a statistically significant reduction in risk and one a nonstatistically significant reduction in risk.[25] A Canadian study compared time trends in head injury rates among children and adolescents five to 19 years of age between provinces that had introduced legislation with those that had not.[32] While their head injury rates were similar before legislation (approximately 18 per 100,000 population), these rates fell by 45% in provinces that introduced helmet legislation compared with only 27% in provinces that did not.[32] An Australian study investigating the long-term effects of all-ages bicycle helmet legislation on head and arm injuries in riders younger than 16 years of age[33] found a decline in

rates of hospitalization for bicycle- versus motor vehicle-related head injuries in children postlegislation (3.1% per year), with no evidence of a decline in arm injury hospitalizations. The rate of non-motor vehicle-related child cyclist head injuries was estimated to decrease as well (1.2% per year), a result that was not statistically significant.

Two recently published studies reported different conclusions regarding the association between helmet legislation and head injuries. One compared the population-based rate and proportion of ED and hospitalized head injuries for bicyclists and pedestrians three years before, and four years after, bicycle helmet legislation in Alberta.[34] They found significant declines in the proportion of children younger than 13 years of age seen in the ED, and of adolescents (13 to 17 years of age) and adults (≥18 years of age) hospitalized for head injuries, with no declines in the proportion of head injuries for a control group of pedestrians. Another study examined hospitalizations for bicycle-related head injuries Canada-wide from 1994 to 2008.[35] Comparing the population-based rate and proportion of head injuries in Canadian provinces that did or did not implement helmet legislation, they were unable to demonstrate a significant association between legislation alone (all ages or children only) and a decline in head injuries, with rates of helmet use and head injuries generally declining in all jurisdiction regardless of legislation status.

Importantly, none of the studies evaluating the effect of bicycle helmet legislation identify whether a helmet was being worn by injured bicyclists. Because it is largely unknown whether cases sustaining head injuries wore a helmet, these studies are weaker than other case-control studies that have firmly established bicycle helmet effectiveness. Also, studies that simply compare jurisdictions with and without helmet legislation are probably affected by other factors associated with helmet legislation, such as educational programs or incentives. Certainly the strongest evaluation of the effect of helmet legislation is whether it affects helmet-use prevalence, with the downstream effect being a reduction in the number and severity of head injuries manifesting from greater helmet use.

Helmet use and risk compensation

Debate continues on the general topic of risk compensation (ie, risk homeostasis) in relation to bicycle helmet use.[36][37] The theory suggests that everyone has a target level of risk. Its proponents argue that if an individual's environment is altered to increase safety, they will respond by acting more dangerously to meet their own target level of risk.[38] However, the theory also suggests that people often take risks to optimize benefits (eg, gaining time by speeding).[39] The evidence for risk compensation and bicycle helmet use among children is mixed. In some studies, parents report they would allow children wearing safety gear, including a helmet, to take more risks.[40][41] Other studies measuring risk tolerance in children suggest a greater willingness to take risks when using safety gear while bicycling.[42] Still others have found no relationship between safety gear use and risk tolerance.[40]

A crossover trial of an obstacle course comparing conditions involving safety gear and no safety gear found that "children went more quickly and behaved more recklessly when wearing safety gear than when not wearing gear, providing evidence of risk compensation".[43] Adult-based studies have been conflicting, showing that helmeted cyclists tend to be more cautious[44] or less cautious[45] than nonhelmeted cyclists.

One ED-based study found no evidence of a relationship between use of safety equipment and reported bicycling behaviour (cycling fast, taking chances) or injury severity among children injured in a variety of activities, including bicycling.[46] Another found that helmeted bicyclists experienced less severe nonhead and non-neck injuries.[47] Injury outcome-based studies involving all age groups have found that helmeted bicyclists experienced more frequent and severe nonhead injuries compared with nonhelmeted bicyclists.[48] However, one European study found no relationship between bicyclist commission of a traffic violation and helmet use.[49] The issue of risk compensation remains unresolved.[23]

Helmet use and ridership

A number of reports and studies have examined the argument that helmet legislation may reduce ridership among children and adolescents, thereby contributing to problems associated with decreased physical activity. One Australian study indicated a decline in bicycling associated with helmet legislation implemented in 1990 in all age groups. However, the rates for adults approached prelaw levels after two years, while the decline for children reflected a pre-existing downward trend. The rate for adolescents remained below prelaw levels two years postlegislation.[50] Another study noted small but statistically significant declines in youth cycling after

legislation in various states in the United States, based on parent- and youth-reported bicycling behaviour.[51] However, an observational Ontario study found no evidence of a decline in cycling activity among children five to 14 years of age after introduction of bicycle helmet legislation.[52] While there was significant year-to-year variability in the rate of bicycling at different locations, none could be attributed to the adoption of bicycle helmet legislation. A follow-up study showed the same rate of bicycling prelegislation and six years postlegislation.[27] Similarly, Canadian survey data indicate no evidence of a decline in adolescent bicycling in relation to bicycle helmet legislation.[31] A decline in the number of observed child and adult – but not adolescent – bicyclists associated with helmet legislation was observed in one Alberta study.[53] This inconsistent effect across age groups suggests that other factors aside from the helmet law may be responsible for changes in bicycling.

A related issue is whether all-ages bicycle helmet legislation would negatively influence the implementation of urban community, low-cost bicycle rental or bikeshare programs. Increasing bicycle use is desirable from an individual and societal perspective. However, not having easy access to a helmet may be a deterrent to renting a bicycle for short trips in urban areas, especially where helmet use is mandatory. Investigators in Canada and the United States have shown that the prevalence of helmet use was lower among users of a bikeshare program relative to those using personal bicycles.[54][55] However, some bikeshare rental companies offer helmet dispensing stations (http://sandvault.com/sandvault-announces-helmetstation//). Their effect on helmet use is not yet known.

In summary, the evidence of a reduction in bicycling among children and adolescents following helmet legislation is mixed, and few studies have adequately accounted for existing bicycling trends independent of a helmet law. While some individuals may avoid bicycling due to helmet legislation, it would need to be shown that they do not replace it with other physical activities for helmet legislation to be considered to have a negative effect on overall health.

Helmet use and enforcement

One single county-based study conducted in the United States noted a change in helmet prevalence of 43% after helmet legislation, a substantial increase that occurred with almost no enforcement.[56] However, another study found that negligible helmet use in a rural Georgia community with helmet legislation covering young riders increased significantly after a combined helmet promotion, giveaway and enforcement program.[57] Systematic review of the effect of bicycle helmet legislation has suggested significant increases in helmet use even with limited enforcement.[24] Canadian studies appear to support this,[30] reporting high postlegislation bicycle helmet use rates with moderate enforcement activities.[29] One Ontario study showed that negligible enforcement (in terms of citations) may have contributed to bicycle helmet use returning to prelegislation levels for low- and middle-income children and youth six years after the helmet law came into effect, while remaining above prelegislation levels for children in high-income areas.[27] Therefore, available evidence suggests that bicycle helmet legislation can increase use even without significant enforcement, at least for a few years after implementation. This finding speaks volumes for the 'education effect', although the sustained effectiveness of bicycle helmet legislation likely requires ongoing promotion and enforcement.

Helmet use and nonlegislated interventions

There is growing evidence that a multifaceted approach to behaviour change is more successful than isolated interventions. Several studies have demonstrated the efficacy of nonlegislated interventions in increasing bicycle helmet use among children.[58] However, the effect of social marketing in increasing helmet use among teens and adults has not been clearly established. Also, the effects of nonlegislated interventions alongside legislation are not fully understood, but it is likely that combined synergies between two approaches would be more successful than either one by itself. Alongside education and policy implementation would be environment- or engineering-based injury prevention efforts,[59][60] and public health strategies such as sales tax rebates and children's tax credits for the purchase of protective helmets.[61][62] Although this statement focuses on the promotion of bicycle helmet use to reduce injuries through legislative interventions, the importance of a multifaceted approach, concurrent with education and enforcement, cannot be underestimated.

Recommendations for policy

There is strong evidence that bicycle helmet legislation increases bicycle helmet use. There is also ample research indicating that legislation reduces risk of bicycle-related head injury. Evidence of the potential

negative effects of bicycle helmet legislation, such as reduced bicycling, is mixed, and a direct cause-and-effect relationship has not been demonstrated. Based on current evidence, bicycle helmet legislation is recommended to both increase helmet use and reduce head injury risk for children and adolescents. While legislation has positive effects on helmet use, these are further compounded by enforcement and education. All of these policies, however, should be implemented in context with wider road safety initiatives such as traffic calming and the separation of cyclists from motor vehicles.

Legislation that requires all bicyclists to wear helmets – regardless of age – has a number of potential benefits. All cyclists are at risk for head injury, and the protective effect of bicycle helmets has been well established for every age group.[63] In addition, children are far more likely to use helmets in the presence of adults wearing helmets.[64] Legislation that is Canada-wide in scope and effects is preferable to an age/location restrictions or another segmented approach. Table 2 lists current Canadian provincial/territorial bicycle helmet legislation status along with CPS recommendations from its status report, 'Are We Doing Enough?'[65]

TABLE 2
The status of bicycle helmet legislation in all provinces/territories, with Canadian Paediatric Society (CPS) recommendations*

Province/Territory	2011 status†	Recommended actions	
British Columbia	Excellent	Meets all CPS recommendations	
Alberta	Good	Amend current legislation to include all age groups	
Saskatchewan	Poor	Enact legislation that requires all age groups to wear helmets. Some education programs are available	
Manitoba	Good**	Amend current legislation to include all age groups	
Ontario	Good	Amend current legislation to include all age groups	
Quebec	Poor	Enact legislation that requires all age groups to wear helmets. Some education programs are available	
New Brunswick	Excellent	Meets all CPS recommendations	
Nova Scotia	Excellent	Meets all CPS recommendations	
Prince Edward Island	Excellent	Meets all CPS recommendations	
Newfoundland and Labrador	Poor	Enact legislation that requires all age groups to wear helmets	
Yukon	Poor	Enact legislation that requires all age groups to wear helmets	
Northwest Territories	Poor	Enact legislation that requires all age groups to wear helmets	
Nunavut	Poor	Enact legislation that requires all age groups to wear helmets	

*Adapted from reference [65]. †Excellent: Province/territory has legislation requiring all cyclists to wear helmets, with financial penalties for noncompliance. Parents are responsible for ensuring their child wears a helmet; Good: Province/territory has legislation requiring all cyclists younger than 18 years of age to wear a helmet; Poor: Province/territory has no legislation on bike helmets

**Legislation effective May 2013

Recommendations

Based on current evidence and the importance of preventing head injuries in children and youth, the

CPS makes the following recommendations:

- All jurisdictions in Canada should legislate and enforce bicycle helmet use for all ages.
- Legislation should be rolled out using social marketing and education to raise awareness of bicycle helmet efficacy, accessibility and importance.
- Other strategies to prevent bicycling injuries, such as separating riders from motor traffic with bicycle lanes, pathways for commuting and recreational cycling, and community safety programs should be implemented concurrently.
- Physicians should counsel families about the importance of wearing bicycle helmets. Where all-ages legislation does not exist, parents should wear a bicycle helmet to model good behaviour and protect themselves.
- Sales tax exemptions or rebates and federal tax credits to make the purchase of bicycle helmets less expensive should be adopted.

Future research should explore both the intended and potential unintended effects of bicycle helmet legislation, with focus on:

- Long-term follow-up to assess the effects of bicycle helmet legislation on compliance, prevalence and head injury rates, with appropriate control for trends in other traffic safety initiatives.
- How enforcement activities influence helmet compliance and prevalence.
- The level of bicycling activity after implementation of helmet legislation, with appropriate control for independent and pre-existing trends in bicycling.

Acknowledgements

This position statement was reviewed by the Community Paediatrics, Adolescent Health, and Healthy Active Living and Sports Medicine Committees, and by the Emergency Paediatrics Section, of the Canadian Paediatric Society.

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CPS INJURY PREVENTION COMMITTEE

Members: Suzanne Beno MD; Claude Cyr MD; Brent E Hagel PhD; I Barry Pless MD (past member); Jeffrey W Scott MD; Natalie L Yanchar MD (Chair); Mitchell Zelman MD (Board Representative)
Liaisons: Dominic Allain MD, CPS Paediatric Emergency Medicine Section; Pamela Fuselli, Parachute – Leaders in Injury Prevention; Robin Skinner, Public Health Agency of Canada
Principal authors: Brent E Hagel PhD; Natalie L Yanchar MD

SASKATCHEWAN HEALTH AUTHORITY (SHA)

Saskatchewan Health Authority

City of Saskatoon Bicycle Bylaw Review Response

Submitted by Population and Public Health, Saskatoon and Area

June 2018

Bylaw Section	Issue	Evidence, data, rationale	Suggested recommendation
#3	One-metre passing rule	COS proposed no potential bylaw modification	Even though it is addressed in the Traffic Safety Act, it would be useful to include the wording with the municipal bylaw to reinforce
#6	Horn or bell	COS potential modification: A person riding a bicycle on a sidewalk designated as a "Shared Pathway", multi-use pathway, or park trail shall: a) operate the bicycle to the right of center of any such sidewalk, trail, or path: and b) alert anyone about to be overtaken by sounding a horn or a bell a reasonable amount of time before overtaking.	We are supportive of the COS potential modification
#8	Riding on sidewalks and Saskatoon Cycles recommendation		We support Saskatoon Cycles' recommendation; potentially designate sidewalks along certain arterials* as shared use pathways *when no protected/separate-from-traffic cycling facilities are provided and there is higher risk to ride in the traffic lane due to traffic volumes and/or speed
#8	Position on street: *"…positioned thereon to be as close as reasonably possible to the right hand curb…"* • Current wording encourages people who are cycling to move in and out of sight/between parked cars • This makes the rider unpredictable and diminishes visibility	In regard to the COS potential modification: "A person riding a bicycle shall utilize only that portion of the street as is intended for the passage of motor vehicles, except that cyclists may ride in an unmarked parking lane." We were not clear on the difference (or necessity of) between marked or unmarked parking lanes. The wording (highlight) is awkward; the word 'passage' may lead to some ambiguity.	Suggested wording: "A person riding a bicycle shall utilize the travel lanes, except that cyclists may ride in a parking lane." *can add motor vehicle travel lanes if you feel it is necessary to the above suggested wording
#9	Two abreast	Can you ride two abreast or not? Wording is ambiguous and meaning unclear (we interpreted the current wording to indicate circumstances of if there is a third rider and not specifically addressing if people can ride two abreast or not)	Clarify wording to identify that you can actually ride two abreast; also make it clear you cannot go more than two abreast

#12	Loads	COS potential modification: "No person riding a bicycle shall carry any package, bundle or article which prevents the rider from keeping at least one hand on the handlebars or interferes with the normal operation of the bicycle."	We are supportive of the COS potential modification.
#13	Bicycle Lanes	In regards to only permitted "*to depart from the exclusive bicycle lane when approaching an intersection…*" – what about if accessing a mid-block driveway that is on the opposite side of street and it makes most sense for person cycling to travel in the vehicle lane to make the left turn (as a car would) to access the mid-block driveway? COS – repeal section 13	We are supportive of repealing section 13
#17	Operating on left prohibited		Potentially modify wording to be easier to read and to similar to the wording in the horn section (see #6 above)
#18	Passing and overtaking		Incorporate similar wording in regards to the horn as to the Horn or Bell section (#6 above)
#19	Rate of speed	The current bylaw wording only includes in a park	Expand to include 'sidewalk designated as a "Shared Pathway", multi-use pathway, or park trail'
#21 (c)	"*Dismount and walk bicycle when passing a pedestrian proceeding in the same direction upon such sidewalk*"	Impractical, especially when going up the bridge at an incline COS – repeal this section and designate as shared use pathway	We are supportive of repealing this section and designating as shared use pathway
	Distracted riding	Is this covered by the Traffic Safety Act with distracted driving?	Possibly include something to address this in the municipal bylaw
	Helmet bylaw recommendation	*Evidence review & policy analysis will be provided mid-August*	

Saskatchewan Health Authority

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August 29, 2018

To City of Saskatoon Administration:

Through the Bicycle Bylaw update process, it was requested that Population and Public Health (PPH), Saskatoon, provide their perspective on a recommendation regarding a bicycle helmet bylaw.

In 2016, the Saskatoon Health Region (SHR) released the Unintentional Injury Report which included the Chief Medical Health Officer's recommendation of: "Encourage the use of bicycle helmets within Saskatoon Health Region". Given the request from the City and the policy window, PPH decided to review the evidence (literature and local data) regarding helmet legislation/bylaw as a population level intervention once again to see if the recommendation should change.

The process we undertook included an evidence review of investigating the research literature as well as our local hospitalization data for motor vehicles, pedestrians and bicycling injuries. The final step was a policy analysis on the dimensions of effectiveness, unintended effects, equity, cost, feasibility and acceptability.

Through this evidence review process and based on:

- inconsistent (and/or tenuous because of methodological flaws of earlier research) evidence of helmet legislation having a strong impact at a population level;
- the local data in terms of bicycling injury hospitalization data (numbers, rate, exposure-based risk rate, TBI contribution) is not indicating that bicycling-related injuries are the highest concern;
- the overall policy analysis of a helmet bylaw (in terms of effectiveness, unintended effects, equity, cost, feasibility and acceptability), which illuminated risks and drawbacks that could negatively impact health equity, health outcomes and progress on creating safe environments for all modes of transportation;

It is the recommendation of Population and Public Health, Saskatoon that:

1. the Chief Medical Health Officer recommendation in the Saskatoon Health Region Unintentional Injury Report (2016) remain unchanged "Encourage the use of bicycle helmets within Saskatoon ";
2. the City of Saskatoon does not proceed with a bicycle helmet bylaw.

For the summary policy analysis for each of the dimensions, please refer to the report included with this letter.

On behalf of the Medical Health Officers and our practitioners involved in this work, we encourage the City and other stakeholders to promote bicycle helmet use, other than through bylaws, as well as continue to improve the safety of the infrastructure to address the root causes of collisions, bicycle injury and improving the safety for all modes.

Sincerely,

Cordell Neudorf
B.Sc., M.D., M.H.Sc., FRCPC
Lead Medical Health Officer

Policy Analysis of Bicycle Helmet Bylaw/Legislation – Population and Public Health, Saskatoon

Introduction

The City of Saskatoon is updating their Bicycle Bylaw and engaged Population and Public Health (PPH), Saskatoon as a stakeholder. Through the process, they requested PPH, Saskatoon to make a recommendation regarding a bicycle helmet bylaw.

In 2016, the Saskatoon Health Region (SHR) released the Unintentional Injury Report which included the Chief Medical Health Officer's recommendation of: "Encourage the use of bicycle helmets within Saskatoon Health Region". Given the request and the policy window, PPH decided to review the evidence (literature and local data) once again to see if the recommendation should change.

A review of the literature was completed as well as analysis of SHR and Saskatoon data regarding hospitalization numbers, hospitalization rates, exposure-based risk rates, body part analysis and a traumatic brain injury (TBI) contribution from all head and neck injuries.

For the analysis of the data, the modes of motor vehicles, bicycling and pedestrians were the focus, not including recreational (e.g., off-road). Playground injury data was included as a comparison as this is a common injury mechanism for children.

The final step of the analysis process, included using the National Collaborating Centre of Health Public Policy's framework for analyzing policy to analyze six dimensions (effectiveness, unintended effects, equity, cost, feasibility and acceptability) in regards to the potential policy recommendation. The ratings were subjective from each practitioner based on their review of the evidence, perspectives and knowledge and ranged from +++ to --- (+ meaning favourable; - meaning unfavourable).

Local Data

i.e., Saskatoon and/or Saskatoon Health Region (SHR) for local context for evidence-informed decision making

Table 1: SHR Hospitalization Transportation Mode & Playground Injury 2004/05-2014/15

		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Avg per year
Number of hospitalization	Pedestrians	25	26	37	32	30	29	25	36	32	24	28	29
	Bicycle	31	32	21	24	18	19	13	28	26	24	29	24
	Motorcycle	24	12	22	20	27	24	37	25	25	28	13	23
	MVC	122	116	106	154	142	121	123	124	113	110	97	121
	Off-Road	16	15	22	17	30	31	15	32	27	34	31	25
	Other	51	48	34	55	35	38	26	25	26	26	18	35
	Playground	25	19	25	29	25	27	21	21	28	29	34	26
	Population d	287,296	289,495	285,618	291,110	298,371	300,638	318,503	318,102	323,938	336,403	346,363	
Hospitalization rates	Pedestrians	8.7	9.0	12.9	11.0	10.1	9.6	7.8	11.3	9.9	7.1	7.9	9.5
	Bicycle	10.9	11.1	7.4	8.2	6.0	6.3	4.1	8.8	8.0	7.1	8.4	7.8
	Motorcycle	8.2	4.1	7.7	6.8	9.0	8.0	11.6	7.9	7.7	8.2	3.8	7.5
	MVC	42.4	40.2	37.2	52.8	47.7	40.1	38.6	38.9	34.8	32.8	27.9	39.1
	Off-Road	5.5	5.3	7.8	5.8	10.1	10.3	4.7	10.0	8.3	10.2	8.9	8.0
	Other	17.8	16.7	11.7	18.7	11.7	12.7	8.2	7.9	8.0	7.6	5.2	11.2
	Playground	8.7	6.7	8.8	10.0	8.4	9.0	6.6	6.6	8.5	8.6	9.8	8.3

MVC = motor vehicle collisions

- Highest hospitalization rates for transportation are seen for motor vehicle collisions at an average of 39.1 per 100,000 population (Table 1). Bicycling-related hospitalization rate is second lowest across the six transportation mode categories
- For Saskatoon residents, there are about 22 bicycling-related hospitalizations per year, 22 pedestrian-related and 67 motor-vehicle-related hospitalizations (data not shown)

Table 2: Saskatoon Exposure-Based Hospitalization Injury Rates, 2013

Saskatoon	Percent of all trips	Annual number of trips	Annual number of trips by mode	Average trip distance (km)	Annual distance travelled	Annual hospitalization Saskatoon	Hospitalization per 100 million km	Teschke article
MVC	82	288,602,000	236,653,640	5.75	1,360,758,430	67	4.9	72
Pedestrians	4	288,602,000	11,544,080	1.5	17,316,120	22	127.0	196
Bicyclists	4	288,602,000	11,544,080	3.4	39,249,872	22	56.1	264

Source: City of Saskatoon Household Travel Survey, 2013

- In order to more accurately represent injury risk by transportation mode, we undertook exposure-based analysis to assess the degree of risk for traveling by motor vehicles, bicycling, and walking. These rates are represented on a per 100 million kilometre basis.
- For the City of Saskatoon, exposure-based hospitalization rates for MVC were the lowest (4.9), bicycling followed (56.1) and pedestrian rates were the highest (127.0; Table 3).
- Bicycling has a hospitalization risk rate 11x higher than for MVC; walking has 2.3x higher hospitalization risk rate than bicycling; and walking has 26x higher risk rate than MVC.
- Note: Teschke et al (2013) was the first study to use a exposure-based analysis rather than only an absolute burden or a population-based rate of injury. The numbers from their study are included for information purposes.

Table 3: SHR Body Part Analysis 2004/05-2014/15 Combined By Transportation Mode & Playground Injury

Body part analysis		Lower Extremeties	Torso	Upper Extremeties	Spinal Cord/Vertebra	All head and neck	Unclassified/ Multiple Sites	Total	TBI contribution to head and neck	Potential Number of TBI per year
	Pedestrians	49.0%	15.2%	10.2%	4.0%	19.8%	1.9%	100.0%	17.9%	5
	Bicycle	29.0%	15.1%	30.3%	2.3%	22.6%	0.8%	100.0%	18.5%	4
	Motorcycle	44.6%	17.6%	20.2%	5.9%	10.6%	1.2%	100.0%	8.6%	2
	MVC	23.3%	28.3%	10.4%	11.9%	24.0%	2.0%	99.9%	19.4%	23
	Off-Road	28.1%	21.1%	23.2%	8.3%	18.5%	0.7%	100.0%	14.1%	4
	Other	33.8%	23.3%	17.9%	13.0%	11.8%	0.3%	100.0%		N/A
	Playground	8.5%	0.7%	83.0%	2.1%	5.3%	0.4%	100.0%	4.2%	1

TBI = Traumatic Brain Injury

- Of the 24 bicycle related hospitalizations per year in SHR, roughly 5 per year (22.6%) were for all head and neck injuries. Of these, roughly 4 were Traumatic Brain Injuries (TBI; Table 3) and it is unknown what proportion of these involved helmet non-use
- In Saskatoon, of the 22 bicycle-related hospitalizations per year, roughly 5 (22.5%) were head and neck injuries. Roughly 4 per year were TBI's and it is unknown what proportion of these involved helmet non-use (data not shown)

- Most playground injuries are to the upper extremities (very few head and neck), suggesting that children are more susceptible to head injuries when transporting either by motor vehicle, walking or bicycling than when using playground equipment.

Table 4: Saskatoon Exposure-Based Traumatic Brain Injury Rate, 2013

Saskatoon	Percent of all trips	Annual number of trips	Annual number of trips by mode	Average trip distance (km)	Annual distance travelled	Annual TBI hospitalization Saskatoon	Hospitalization TBI per 100 million km
Motor Vehicle	82	288,602,000	236,653,640	5.75	1,360,758,430	13	1.0
Pedestrians	4	288,602,000	11,544,080	1.5	17,316,120	4	23.1
Bicyclists	4	288,602,000	11,544,080	3.4	39,249,872	4	10.2

- For the City of Saskatoon, exposure-based TBI hospitalization rates for MVC were the lowest (1.0), bicycling followed (10.2) and pedestrian rates were the highest (23.1; Table 4).
- Bicycling has a TBI hospitalization risk rate 10X higher than for MVC; walking has 2.3X higher hospitalization risk rate than bicycling; and walking has 23X higher risk rate than MVC.

Table 5: Summary of data

Data not previously shared above but included if any provincial context is needed (note: not exposure-based rates)

	SHR Hospitalization Number Average per year	SHR Hospitalization Rate Average per year (as per population denominator)	SHR TBI contribution from head and neck %	Potential number of TBI per year	Sask. Injury & Trauma ED & Hospitalizations 2015/16	Sask. Transport Death Numbers (2005-2009)
Pedestrians	29	9.5	17.9	5	117	340
Bicycle	24	7.8	18.5	4	96	54
MC	**121**	**39.1**	**19.4**	**23**	**691**	**1939**
Playground	26	8.3	4.2	1	---	---

Saskatoon	Percent of all trips	Annual number of trips	Annual number of trips by mode	Average trip distance (km)	Annual distance travelled	Annual hospitalization Saskatoon	Hospitalization per 100 million km Saskatoon	Annual TBI hospitalization Saskatoon	Hospitalization TBI per 100 million km Saskatoon
MVC	82	288,602,000	236,653,640	5.75	1,360,758,430	67	4.9	13	1.0
Pedestrians	4	288,602,000	11,544,080	1.5	17,316,120	22	127.0	4	23.1
Bicyclists	4	288,602,000	11,544,080	3.4	39,249,872	22	56.1	4	10.2

- In SHR, playground injuries have a similar (but slightly higher) number of hospitalizations and rate of hospitalizations but less Traumatic Brain Injury (TBI) contribution compared to those of bicycling.
- In Saskatoon, pedestrian injuries have a higher number of hospitalizations and rate of hospitalizations and similar (but slightly lower) TBI contributions compared to those of bicycling. Compared to bicyclists and motor vehicle drivers, pedestrians have the highest exposure-based injury hospitalization and TBI risk rate.
- In Saskatoon, motor vehicle collision injuries have higher number of hospitalizations, rate of hospitalizations (based on denominator as population) and TBI contributions compared to those of bicycling. If exposure based comparisons are used, MVC's have the lowest injury hospitalization and TBI risk rates.
- Summary of data specifically re cycling injury:
    - Local data is not indicating that cycling-related injuries are the highest concern;
        - The pedestrian-related is the highest in both exposure-based rates for hospitalization and TBI injury (127.0 and 23.1 per 100 million km respectively)
            - Walking has a 2.3X higher injury hospitalization and TBI risk rate than cycling
            - Walking, compared to motor vehicles, has a 26X higher injury hospitalization risk rate and a 23X TBI risk rate
    - If looking at absolute hospitalization numbers (as many earlier studies have done), bicycling-related hospitalization number are the lowest
    - A helmet bylaw could potentially avoid 4 bicycling-related traumatic brain injuries a year. As we did not conduct a chart review, it is unknown whether TBI hospitalizations involved helmet use or not; that is, it is possible some head injury hospitalizations occurred in spite of helmet use.

Policy Analysis Dimensions

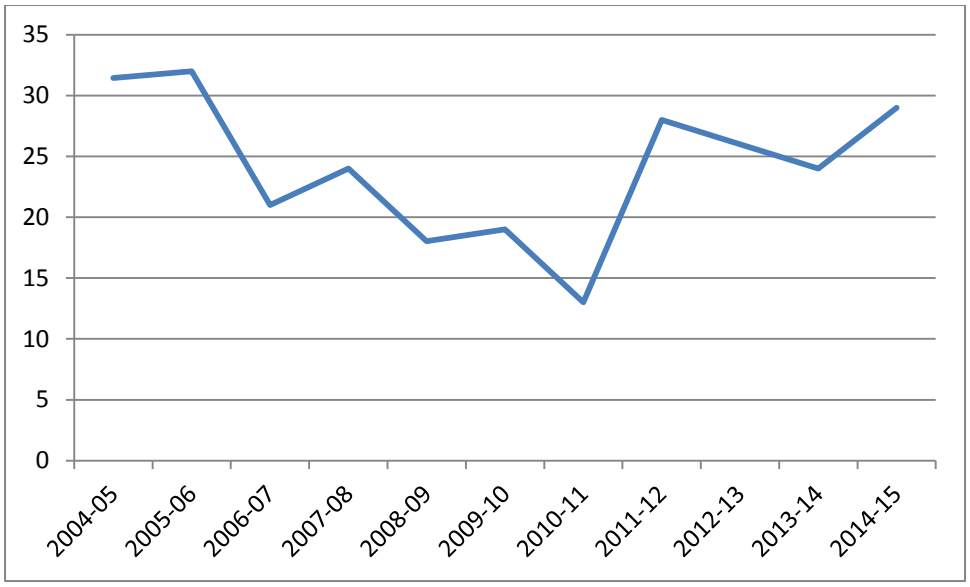
Dimension 1: Effectiveness

i.e., what effects does the policy have on the targeted health problem

- Public Health Ontario compiled a knowledge synthesis (2015) regarding mandatory helmet legislation in Ontario and we analyzed that report in addition to further research
    - Prior to Ontario legislation (1995), helmet use was increasing (1990-94)
    - In Ontario, cycling deaths and injury had the lowest rates; death based on cycling exposure is comparable to other modes
    - 11% reduction of deaths per hour of cycling post legislation
    - 55% reduction of deaths per hour of walking post-(helmet) legislation
        - Something other than helmet legislation is happening to account for reductions in injury and death
    - Legislation in effect since 1995 and a rise in helmet use occurred
        - However trends prior to legislation were not accounted for therefore it is hard to discern the exact impact of the legislation
        - In an independent study (MacPherson, 2006) found that bicycle helmet use in their study population (East York, Ontario 5-19 year olds) increased from pre-legislation level of 45% to 68% in 1997 (Ontario legislation enacted in 1995), then decreased to 46% by 2001
        - There is something conflicting results for cycling behavior post legislation noted in the knowledge synthesis
    - Currently in Ontario, 1/3 report never wearing a helmet (Statistics Canada, June 2018)

- "Bike helmet legislation places the onus of responsibility for protection from injury and death on the vulnerable road user, who must choose between complying with the laws vs not riding"

- Trends have shown that rate of bicycling-related head injury and injury overall have been declining in Canada (Dennis, 2013, Middaugh 2010, Teschke, 2015)
  - SHR data has shown a declining trend for hospitalizations for bicycling injuries in 2004-10 and again in 2012-14



- The research findings regarding the impact of helmet legislation is inconsistent. The issue has been researched over the past two to three decades and evidence has been found both for and against the impact of legislation
  - **In regards to the "pro" legislation research**:
    - There have been criticism with a number of studies that are included in the systematic reviews based on flawed methodological issues, not looking at the independent effect of legislation and conclusions reached by researchers based on the data and/or not explaining/including data that did not support their conclusions
    - Examples:
      - None of the studies used an exposure-based denominator to assess risk estimate (however they concluded they were assessing risk). The first study to do this was done by Teschke (2013)
      - Trends of declining injury and death prior to legislation are not accounted or acknowledged in the conclusions; a decline in injury and death are wholly attributed to effect of legislation without acknowledging or controlling for other con-current happenings that could be contributing to the decline
      - Few studies include a breakdown by areas of environmental risk (e.g., cycling infrastructure, traffic volume, road type)
    - Research studies such as Dennis, 2013 and Teschke, 2015 have been argued to have superior methodology and controlled for background trends, modeling head injuries as a proportion of all cycling injuries, and calculating exposure-based risk rates compared to case-controlled studies or other ecological studies done in the past (Goldacre, 2013)
  - **In regards to the 'limited or no independent effect' research**:

- In an analysis of helmet legislation and hospital admissions for cycling related head injuries in Canadian provinces and territories, it was found that after taking baseline trends of declining head injuries into account, no independent effect of helmet legislation is seen (Dennis, 2013)
- In another Canadian study that examined cross-province comparison (with and without helmet legislation), exposure-based injury rates and mode share over 2006-2011 (a period of stable helmet legislation) were investigated (Teschke, 2015)
    - Hospitalization rates were lower with higher bike share modes regardless of helmet legislation. For traffic-related injury causes, cycling mode share was the only explanatory variable. It was negatively associated with hospitalization rate, significantly so for injuries to any body region (in simple and multiple regression) and to the brain, head, scalp, skull or face (in simple regression)
    - Helmet legislation not associated with decreasing hospitalization rates for brain, scalp, skull, face or head injuries indicating that factors other than legislation have more influence on injury rates
- Based on the mathematical model created to determine net societal health benefit of helmet legislation, it was determined that in jurisdictions where cycling is relatively unsafe, helmets will do little to make it safer, and a helmet law, under extreme assumptions, may make a small positive contribution to net societal health (De Jong, 2012)

Conclusion summary:

- Helmets are a piece of personal protective equipment and have the potential to reduce the risk of head injury if the individual has resources to purchase a helmet, wears it when cycling, the helmet fits appropriately, wear and tear on helmet is minimal and the collision happens at fairly low speeds (Thompson, 2000). However:
    - Helmets do not protect/prevent non-head and neck injury
        - SHR data shows 77% of hospitalizations related to bicycling injuries are non-head or neck related
    - Helmets do not prevent the collision or injury-cause from happening in the first place
    - Helmets do not address or mitigate the root causes around the collision and injury (e.g., lack of safe cycling infrastructure such as protected bike lanes)
    - Helmet legislation does not create a safe systems approach that provides universal injury (head and body) reduction potential to the whole population. It is an individual-level intervention of a piece of personal protective equipment and places the onus of responsibility on the user, not on the system

Conclusion: effectiveness = (Josh +; Cora neutral/+; Mel neutral) = Overall rating +

Dimension 2: Unintended Effects

i.e., what are the unintended effects of this policy

- Creating barriers to people cycling that do not own or operate (by choice, ability or cannot afford) a car to access employment, education, food, healthcare services and more
- A potential risk or compromise for creating safe infrastructure for active modes
- Research has highlighted a variety of concerns regarding unintended effects; however the evidence on the occurrence of these is mixed (Marshall, 1994; De Jong, 2012; Teschke, 2015; Public Health Ontario Knowledge Synthesis, 2015)

1. Disincentive effect where people choose not to cycle because of mandatory helmet use therefore impacting the cycling mode share. This may be due to the small burden of having and wearing a helmet as well as the disproportionate attention it draws among environmental risk factors associated with cycling
2. Increased perception of cycling as an unsafe mode of transportation; therefore a reduced cycling mode share (and loss of protection of safety in numbers)
3. If a decrease (or a non-increase) in cycling mode share happens, this hypothetically translates into less physical activity for the population. This results in a coinciding increased risk of chronic diseases such as diabetes, heart disease, cancers and mental health issues which increase the burden on the healthcare system and costs to society and decrease quality of life
4. Motorists take greater risks when driving near cyclists wearing helmets
5. Risk compensation of people cycling when wearing helmets (i.e. take more and greater risks)

Conclusion: unintended effects = (Josh --; Cora --; Mel --) Overall rating = --

Dimension 3: Equity

i.e., what are the effects of this policy on different groups?

- Effect of legislation has been shown to vary by income. In Ontario, two independent studies (MacPherson, 2006; Parkin, 2003) looked at the impact on children 5-19yrs (MacPherson, 2006) and 5-14yrs (Parkin, 2003) and found:
    - High income area children most likely to be helmeted pre-legislation (73% high, 50% mid, 33% low income area) (MacPherson, 2006)
    - Legislation had little effect (rate of change) on increasing helmet use in high-income area children (Parkin, 2003)
    - Lowest income area children had lowest helmet use pre- and post- legislation in Ontario (Parkin, 2003; MacPherson, 2006)
    - Any increase in helmet use in mid- and low- income area children at start of helmet legislation was not sustained 2yrs, 4yrs and 6yrs post-legislation. At 4yr and 6yr marks, mid- and low-income area children's helmet use was back to pre-legislation rates
        - Helmet use in high-income area children was consistently the highest. Helmet use increased with legislation (73.1% pre-legislation to 89.3% in 1997). Levels were sustained post-legislation as of 2001 (MacPherson, 2006).

Table 1 Relative likelihoods of bicycle helmet use by children (5–14 years) in East York by income area and year

Income area	1995 Pre-legislation		1996, 1 year post-legislation		1997, 2 years post-legislation		1999, 4 years post-legislation		2001, 6 years post-legislation	
	% use	RL (95% CI)	% use	RL (95% CI)	% use	RL (95% CI)	% use	RL (95% CI)	% use	RL (95% CI)
High	73.1	2.2 (1.9 to 2.5)	77.7	1.2 (1.1 to 1.3)	89.3	1.6 (1.5 to 1.8)	80.9	2.6 (2.2 to 3.0)	84.5	2.6 (2.2 to 3.0)
Mid	50.0	1.5 (1.2 to 1.7)	78.4	1.2 (1.1 to 1.3)	59.9	1.1 (0.9 to 1.2)	53.9	1.8 (1.5 to 2.1)	50.4	1.5 (1.2 to 1.9)
Low	33.0	*reference*	61.4	*reference*	55.6	*reference*	30.8	*reference*	33.0	*reference*

CI, confidence interval; RL, relative likelihood.

- In the United States studies examined equity impacts in California (Sullins, 2014; Kraemer, 2016; Castle, 2012), Illinois (Williams, 2018) and Florida (Kraemer, 2016) and using the National Trauma Data Bank (Gulack, 2015)

- Sub-populations of minority racial groups (African-American, Hispanic, Asian) less likely to wear helmets and helmet legislation was identified as less effective for these sub-populations (Sullins, 2014, Kraemer, 2016; Williams, 2018; Castle, 2012; Gulack, 2015)
- Less helmet use with patients hospitalized for cycling injury that were on Medicaid (a proxy for low SES measure of families) (Sullins, 2014, Gulack, 2015)
- Helmet laws increase disparities between the white students and other minority ethnic students and these disparities generally persist for a follow-up time of at least a decade (Kraemer, 2016)

Conclusion summary:

- Helmet legislation
  - Creates another barrier for people living in poverty to get around their community to access employment, education, food, healthcare services and /or social opportunities
  - Creates another barrier without addressing the cause of bicycling injuries for these individuals and the population overall

Conclusion: equity = (Josh --; Cora ---; Mel --) Overall rating = --

Dimension 4: Cost

i.e., what is the financial cost of this policy?

A cost estimate was beyond our purview; however the cost categories that were identified include:

- Resources (fiscal and human)
  - For city administration to do an investigative study for their purposes, prepare a report and build a case to convince Council;
  - To craft bylaw;
  - To hold public hearings
  - To address any resistance in the community
  - Implementation of bylaw
  - Program costs to administer free helmets to people who live in low-income circumstances to address health inequity impacts of bylaw
  - Other program or costs to mitigate other negative unintended effects

  * Unless there is additional staff and budget resources, this will take away from implementing the Active Transportation Plan and infrastructure projects for creating safe all ages and abilities cycling infrastructure and network
- Police enforcement of the bylaw
- Cost to people living in poverty – punitive to those that cannot afford to purchase a helmet
- Healthcare costs associated with chronic disease
- Using the SHR and Saskatoon local data potentially 4 TBI per year would be avoided with a bicycle helmet bylaw
- Some cost-recovery from the tickets issued and paid for not wearing a helmet

Conclusion: cost = (Josh --; Cora --; Mel --) Overall rating = --

Dimension 5: Feasibility

i.e., is this policy technically feasible?

- Feasible pending availability of resources, as outlined under Dimension 4
- There are no technological limitations and there are learnings from other jurisdictions.
- There is a question regarding the feasibility of ticketing a child or youth. If police cannot, or there is no incentive to pay, then a mandatory helmet bylaw becomes moot
    - There was some conversation regarding the similarity with seatbelt tickets for youth under 16 years and that the parents have to pay however, that is written into the Traffic Act whereas bicycle helmet use is not
- A policy window in the municipal processes to develop and implement a bylaw with the Bicycle Bylaw update process

Conclusion: feasibility = (Josh +; Cora +; Mel +) Overall rating = +

Dimension 6: Acceptability

i.e., do the relevant stakeholders view the policy as acceptable?

Below is based upon practitioners perspectives through knowledge of area and conversations with contacts

City/Municipal Stakeholders:

- Council unanimously opposed a helmet bylaw a few years ago
- Possibly contrary to concept and principles of Vision Zero
    - Risk of bylaw disproportionately placing the responsibility of safety on the individual users for personal protective equipment rather than addressing a safe systems approach and a universal intervention that benefits the whole population
    - Societal practices and expectations often default to education and individual responsibility; however Vision Zero offers a chance for a paradigm shift with identifying it is a shared responsibility (the individual level as well as the systems level) with a renewed commitment to deepen the system level approaches
- Staffing focus, the funding and implementation of projects – this can impact the implementation the Active Transportation Plan and creating a safe, all ages and abilities cycling network (high priority); staff time, funding and timelines would need to be compromised
    - Population and Public Health in Saskatoon has a long history of advocating for the City to create an Active Transportation Plan, participated in the process to create, and continues to advocate for its implementation. If the work of creating a mandatory helmet bylaw puts that in jeopardy, that would be undesirable.
    - The protective effect of a safer transportation system and road environment is always present regardless of a person's choice to don personal protective equipment, their age, ability, gender, ethnicity or income level (Lavoie, 2014)
- The City has committed to increasing the cycling mode share in the city and has set targets to double the cycling mode share by 2045 for all trips and for commuting trips

- A helmet bylaw has the potential to negatively impact the City's progress on achieving these targets (by potentially negatively impacting bike mode share and disproportionately highlighting cycling as a 'risky' mode of transportation)
- The targets and achieving the targets, are indicated for the City's strategic goals of moving around, quality of life in addition to their climate action plan and the sustainability of the transportation system

People living in poverty/living in low-income areas:

- A helmet bylaw/legislation does not allow the inequities and unintended effects to be mitigated and avoided and can increase the barriers for people who do not have a car, to live their daily lives and engage in community

Cycling Advocacy Groups:

- Saskatoon Cycles is opposed to a helmet bylaw or legislation and feel the critical focus needs to be on the infrastructure and creating a safe environment for people of all ages and abilities to use cycling as a mode of transportation rather than placing the onus of safety at the level of the individual
- Cycling is not a dangerous activity in and of itself, the environment is dangerous if the right infrastructure is not in place

Provincial Government:

- Saskatchewan and Quebec are the only provinces that do not have any bicycle helmet legislation(Fridman, 2018). Some of the provinces have for all ages (British Columbia, Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland and Labrador), while for others the legislation is age-restricted to children and youth (Alberta, Manitoba, Ontario)
- There is nothing in the Saskatchewan Traffic Act and the provincial government has deferred responsibility and action to the municipalities rather than take a provincial approach

Saskatchewan Urban Municipality Association (SUMA)

- A SUMA resolution passed in 2015 with just over 50% of votes to lobby the provincial government to create provincial legislation. The communities of Moose Jaw, Estevan and Yorkton have recently adopted bicycle helmet bylaws for those 16 years and under

Saskatchewan Medical Association (SMA)

- SMA advocates for helmet legislation and has a position paper on it as does the Canadian Pediatric Society
- In the literature, it is not uncommon for medical doctors who work in the acute care settings to have similar stances as they are dealing with the individual cases

Conclusion: acceptability = (Josh +; Cora --, Mel -) Overall rating = -

Presentation using scoring

Effectiveness	Unintended Effects	Equity	Cost	Feasibility	Acceptability
+	--	--	--	+	-

Overall Summary:

The protective effect of a safer transportation system and road environment is always present regardless of a person's choice to don personal protective equipment, their age, ability, gender, ethnicity or income level (Lavoie, 2014).

Bicycling as a mode of transportation is often disproportionately singled out as the riskiest mode of transportation. The best available approach to calculating risk is an exposure-based risk and the bulk of the research evidence in regards to helmet legislation did not include this calculation and analysis. When examining the risk of various modes (i.e. not looking at bicycling in isolation), the local data is not indicating that bicycling and bicycling-related injuries are the highest concern.

Being using a robust policy analysis framework, and looking at the analysis overall, a helmet bylaw or legislation is not indicated based on the dimensions of unintended effects, equity, cost and acceptability being unfavourably impacted.

Potentially eliminating 4 cycling-related TBIs per year is a less than favourable public policy option when comprehensively examining the cost, unintended effects (e.g, decreasing bike mode share), potential compromise to creating safe infrastructure for active modes (e.g., implementation of Active Transportation Plan is delayed or pace is slowed due to conflicting priorities) and the potential for increasing health inequities (e.g., punitive cost to people who cannot afford a helmet). Please note: it is not being argued that potentially 4 cycling-related TBIs per year is okay; but rather it is being recognized that if zero TBIs is the target, then this target needs to be applied to TBI attributed to walking and motor vehicles as well. Addressing the transportation system as a whole will provide more universal protection (for injury overall and TBI) to all road users.

Proposed PPH Recommendation:

Based on:

- inconsistent (and/or tenuous because of methodological flaws of earlier research) evidence of helmet legislation having a strong impact at a population level;
- the local data in terms of bicycling injury hospitalization data (numbers, rate, exposure-based risk rate, TBI contribution) is not indicating that bicycling-related injuries are the highest concern;
- the overall policy analysis of a helmet bylaw (in terms of effectiveness, unintended effects, equity, cost, feasibility and acceptability), which illuminated risks and drawbacks that could negatively impact health equity, health outcomes and progress on creating safe environments for all modes of transportation;

it is the recommendation of Population and Public Health, Saskatoon that:

1. the recommendation of the Chief Medical Health Officer in the Saskatoon Health Region Unintentional Injury Report (2016) remain unchanged "Encourage the use of bicycle helmets within Saskatoon ";
2. the City of Saskatoon does not proceed with a bicycle helmet bylaw.

SASKATCHEWAN PREVENTION INSTITUTE (SPI)

saskatchewan
preventioninstitute
our goal is **healthy** children

September 14, 2018

City Hall
222 - 3rd Avenue North
Saskatoon SK S7K 0J5

To the City of Saskatoon Administration:

Recommendation to include the mandatory use of bicycle helmets (Canadian Standards Association-approved) for cyclists of all ages in the update to Bylaw 6884

The benefits of cycling are well-known, and include positive effects on health and the environment. Unfortunately, cycling does not come without risks. Head injuries are a particularly serious outcome of cycling-related incidents, with the potential for death or long-term disability. In Saskatchewan between 2004 and 2013, there were 133 traumatic brain injuries in children and youth under the age of 20 due to cycling-related incidents, accounting for 25% of all cycling-related hospitalizations in this population. The risk of brain and head injury, however, can be mitigated through the use of helmets. Strong research evidence shows that bicycle helmets provide significant protection against traumatic brain, head, and upper facial injuries.

Based on available research, all-ages helmet legislation is an effective and protective strategy for the health and safety of cyclists with little to no evidence supporting common arguments against this legislation. Several professional organizations have called for mandatory bicycle helmet legislation for cyclists of all ages in an effort to prevent serious injuries, including the Canadian Pediatric Society, the Canadian Association of Emergency Physicians, and the Canadian Academy of Sport and Exercise Medicine. Although the Province of Saskatchewan has not yet enacted provincial helmet legislation, several municipalities have enacted legislation, including Moose Jaw, Estevan, and Yorkton. The Saskatchewan Prevention Institute encourages the City of Saskatoon to join these municipalities and include the mandatory use of Canadian Standards Association-approved bicycle helmets for cyclists of all ages in the update to Bylaw 6884.

Despite the proven protective effect of helmets, many cyclists still do not wear them. Research indicates that mandatory bicycle helmet legislation increases helmet use. Systematic reviews have shown that these increases in helmet use are sustained, particularly when they are combined with enforcement and education. The largest increases in helmet use tend to occur in places where legislation applies to all ages, rather than legislation targeted solely at children. Riders of all ages are at risk for head injury and are, therefore, protected by the use of helmets. Children are also much more likely to use helmets in the presence of adults wearing helmets. In addition to increases in helmet use, mandatory bicycle helmet legislation has been found to be associated with decreases in serious head injuries and cycling-related fatalities.

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Potential unintended consequences are sometimes used as an argument against helmet legislation, including reduced cycling rates and greater risk-taking behaviours among cyclists. In their review of the literature, the Canadian Pediatric Society states that evidence for these unintended consequences of helmet legislation is weak and conflicting. The majority of existing research indicates that legislation is not associated with long-term reductions in cycling. It is difficult to measure whether people wearing helmets will be more likely to engage in risky cycling behaviours, but a review of the literature suggests that there is no direct evidence to support this argument. In fact, research among adults has shown that those who wear helmets are more likely to engage in precautionary behaviours.

Another argument that has been put forward against helmet legislation is that it may unfairly burden those living in poverty, both due to the cost of helmets and potential fines for those who do not wear a helmet. However, research from Alberta and Ontario suggests that helmet use increases by approximately the same amount in higher and lower-income neighbourhoods, and may even increase more in lower-income neighbourhoods where the baseline rates of helmet use are often lower. It is important to note that helmets are not overly expensive, particularly when compared to other mandated safety equipment like car seats and even booster seats. Subsidy and community programs are possibilities for helping families obtain helmets and can be combined with enforcement and education.

Legislation on safety issues serves an important purpose – to help parents and caregivers identify and adhere to best practice safety guidelines. Research has shown that once a safety initiative is legislated, parents believe that initiative is important to follow and easier to act on. The outcomes from booster seat legislation are highlighted as evidence of this effect, and researchers suggest that the same outcomes may be found for helmet legislation.

The Saskatchewan Prevention Institute's recommendation to include mandatory helmet use in the updated bicycle bylaw aligns with recommendations from the Saskatchewan Medical Association, the Canadian Pediatric Society, Parachute Canada, and the principles of Vision Zero. It is important that helmet legislation is accompanied by education and enforcement, in order to achieve optimal results in terms of long-term helmet use. By enacting mandatory helmet use, Saskatoon has the opportunity to be a leader in injury prevention in Saskatchewan.

Sincerely,

Joelle Schaefer
Executive Director

Supporting documents attached:

- *Bicycle Helmets: A Review of the Literature on Helmet Effectiveness and Impacts of Mandatory Helmet Legislation* (Saskatchewan Prevention Institute, 2018)
- *Bicycle Helmet Use in Canada: The Need for Legislation to Reduce the Risk of Head Injury* (Position Statement by the Canadian Paediatric Society, 2013)
- *Facts and Myths About Helmet Legislation* (Parachute, 2014)
- Cycling, Traffic and Non-Traffic (Chapter from the Report *Child and Youth Injury in Saskatchewan 2004-2013*; Saskatchewan Prevention Institute, 2017)

SASKATCHEWAN PREVENTION INSTITUTE

Bicycle Helmets:

A Review of the Literature on Helmet Effectiveness and Impacts of Mandatory Legislation

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9/13/2018

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Updated September 2018

Background

The benefits of cycling are well-known, and include positive effects on health and the environment. Encouraging physical activity in children is particularly important given the percentage of Canadian children who are overweight or obese. In 2015, 17.1% of Canadian children aged 5 to 18 years were overweight and 13.0% were obese (Statistics Canada, 2016). Although there are benefits to bicycling, it does not come without risks. In Saskatchewan, between 2004 and 2013, 539 children were hospitalized due to cycling-related injuries, representing 3.3% of all injury-related hospitalizations in children and youth in this time period (Saskatchewan Prevention Institute, 2017). Of these injuries, 86.1% were non-traffic and included falling off of a bicycle or striking a stationary object. The remaining 13.9% of cycling-related hospitalizations were due to children being struck by a motor vehicle.

Head injuries are a particularly serious outcome of cycling-related incidents, with the potential for death or long-term disability (Hagel & Yanchar, 2013). In Saskatchewan, between 2004 and 2013, head and neck injuries were responsible for 27.4% of the cycling-related hospitalizations in children and youth (Saskatchewan Prevention Institute, 2017). Of these, 86.9% were classified as traumatic brain injuries (e.g., concussions and internal head injuries). Not wearing a bicycle helmet has been identified as a significant risk factor for severe injury in cycling incidents (Hagel, Romanow, Enns, Williamson, & Rowe, 2015). In an effort to prevent these potentially serious injuries, several professional organizations have called for mandatory bicycle helmet legislation (e.g., the Canadian Pediatric Society, the Canadian Association of Emergency Physicians, and the Canadian Academy of Sport and Exercise Medicine).

Effectiveness of Helmets

There is extensive literature focused on the effectiveness of bicycle helmets for reducing the risk of severe head injuries, with many others highlighting the additional protective effect of helmets for reducing facial injuries. In their updated position statement, which is based on scientific studies and systematic reviews of existing evidence, the Canadian Academy of Sport and Exercise Medicine (CASEM) states that the protective value of helmets for bicycling is recognized (Goudie & Page, 2013). More specifically, they state that the existing evidence shows that helmet use in cyclists significantly decreases head and facial injury. Although the risk reduction estimates reported in meta-analyses and systematic reviews differ, their results all point to significant reductions in injury risk when cyclists wear helmets.

For example, a meta-analysis of 16 articles found that helmets were effective for reducing head injuries (conservative risk reduction estimates of at least 45%), brain injuries (conservative risk reduction estimates of at least 33%), facial injuries (conservative risk reduction estimates of at least 27%), and fatal injuries (conservative risk reduction estimates of at least 29%) (Attewell, Glase, & McFadden,

2001). A 2001 Cochrane systematic review reported that helmets reduce the risk of head injury by up to 88% and reduce the risk of upper and mid-facial injury by up to 65% for cyclists of all ages (Thompson, Rivara, & Thompson, 2001). Importantly, this review also showed that helmets provide equal levels of protection for crashes involving motor vehicles (69%) and crashes from all other causes (68%). Research from Australia indicated that helmet use was associated with a reduced risk of head injury in bicycle collisions with motor vehicles of up to 74% (Bambach, Mitchell, Grzebieta, & Olivier, 2013). This reduced risk was particularly true for more serious head injuries, including skull fractures, intracranial injuries, and concussive injuries. Olofsson, Bunketorp, and Andersson (2017) also found that the protectiveness of helmets against skull, brain, and facial injuries increases with the severity of the injury examined. Although the proportion of children with injuries did not decrease in their study, those wearing helmets were much less likely to experience serious or more severe skull and brain injuries and moderate or more severe facial injuries than those not wearing a helmet.

A re-analysis of Attewell et al.'s (2001) data, with the inclusion of newer research, confirmed the protective effect of helmets for reducing head and facial injuries (Elvik, 2011). The risk reduction estimates reported by Elvik were smaller but were still significant. Elvik suggested that earlier research tends to show stronger protective effects for helmets, perhaps due to the fact that different types of helmets do not provide the same protective effect. For example, hard shell helmets have been found to offer better protection against head and facial injury than soft shell helmets, which have become more popular over time. Even soft shell helmets have been found to provide substantial protection for cyclists of all ages however, particularly when compared to not wearing a helmet (Thompson et al., 2001).

More recent research has confirmed the effectiveness of helmets for reducing the severity of cycling-related injuries in the event of a crash, particularly brain injuries (Davison et al., 2013; Hollingworth, Harper, & Hamer, 2015; Kaplan, Vavatsoulas, & Prato, 2014), but also skull fractures and facial injuries (Michael, Davenport, & Draus, 2017). Biomechanical research, using a validated anthropomorphic test head-form and a range of drop heights, indicated that contemporary bicycle helmets are highly effective at reducing head injury metrics and the risk for severe brain injury in head impacts (Cripton, Dressler, Stuart, Dennison, & Richards, 2014). Another laboratory study concluded that helmets are an important preventive tool for reducing traumatic brain injury in children, including injury due to impact and/or compressive forces (Mattei et al., 2012). Joseph et al. (2017) found that helmeted cyclists had 51% reduced odds of severe traumatic brain injury, 44% reduced odds of mortality, 31% reduced odds of orbital fractures, and 27% reduced risk of facial contusions and lacerations. Persaud, Coleman, Zwolakowski, Lauwers, and Cass (2012) also identified reductions in head injury-related mortality associated with helmet use. Sethi et al. (2015) found that the protective effect for bicycle helmets against traumatic brain injury remained even after accounting for road safety measures in New York City (e.g., infrastructure improvements, bicycle share programs, enacting an action plan to reduce traffic deaths and serious injuries). These authors found that helmeted cyclists were 72% less likely to sustain a traumatic brain injury. Echoing the sentiments of many of the authors cited above, Michael et al. (2017)

concluded that "the consistent use of a properly fitting bicycle helmet is the single most effective safety measure to prevent head injury in the event of a bicycle accident" (p. 1009).

Calls for Mandatory Helmet Legislation

After reviewing the available evidence on the positive effects of helmet use, several Canadian associations have released policy statements calling for legislation around mandatory helmet use. For example, the Canadian Pediatric Society (CPS) recommends that all jurisdictions in Canada legislate and enforce bicycle helmet use for all ages (Hagel & Yanchar, 2013). In making this recommendation, the CPS states that there is evidence that such legislation increases helmet use and reduces the risk of head injuries. The CPS continues to advocate for the mandatory use of Canadian Standards Association-approved bicycle helmets for riders of all ages (CPS, 2016). They state that legislation must be accompanied by enforcement and education programs in order to be effective in the long-term.

Likewise, the Canadian Association of Emergency Physicians (CAEP) states that bicycle helmet legislation should be approved in provinces without any current law as soon as possible, and that existing legislation should be amended to make helmets mandatory for cyclists of all ages (Letovsky, Rowe, Friedman, Snider, & Sullivan, 2014). CAEP suggests that helmet use mitigates the severity and frequency of cycling injuries, including severe head injuries and death. Their review of the literature suggests that a ceiling effect may have been reached in helmet wearing, meaning that legislation is needed in order to increase rates of helmet wearing. The Canadian Academy of Sport and Exercise Medicine (CASEM) also advocates for comprehensive legislation mandating helmet use for bicyclists of all ages (Goudie & Page, 2013).

Effects of Mandatory Bicycle Helmet Legislation

Several reviews of the existing literature indicate that mandatory bicycle helmet legislation increases helmet use and decreases head injury. For example, a Cochrane review in 2008 showed that helmet use increased following the introduction of legislation (Macpherson & Spinks, 2008). Importantly, this review also showed that these increases in helmet use were associated with decreased injury rates and no decrease in bicycle ridership. A more recent study examining the effects of legislation on helmet use and ridership in Canada revealed similar findings (i.e., increased helmet use, decreased injury rate, no decrease in ridership) (Dennis, Potter, Ramsay, & Zarychanski, 2010). Another review of the existing literature suggests that while the effect size varies, the weight of the evidence shows that helmet legislation both increases helmet use and decreases head injury among children (Dellinger & Kresnow, 2010). This review also examined differences between statewide laws and laws covering smaller areas (e.g., municipal laws) and found that statewide laws were more effective in increasing helmet use (Dellinger & Kresnow, 2010). However, children living in states with only local laws were still more likely to wear bicycle helmets than those in states with no laws.

Another systematic review demonstrated higher proportions of helmet use following legislation (either regional, state/province-wide, or municipal level), although the increase varied across studies (increases

above 30% were reported in the majority of the included studies) (Karkhaneh, Kalenga, Hagel, & Rowe, 2006). The authors indicated that these effects occurred even in the absence of rigorous enforcement. This review also showed that there is a long-term effect of legislation, with sustained increases in helmet use following the introduction of legislation. Huybers et al. (2017) found that helmet use continued to rise in Nova Scotia up to 14 years post-legislation, with ongoing enforcement and educational efforts. Other recent research has found that legislation is associated with increases in helmet use (e.g., Jewett, Beck, Taylor, & Baldwin, 2012; Karkhaneh et al., 2011; Molina-García & Queralt, 2016), and that these increases are sustained in the years following legislation (e.g., Karkhaneh et al., 2011; Kraemer, 2016; Olivier, Walter, Grzebiet, 2013). The largest increases in helmet use following legislation tend to occur in jurisdictions with lower baseline helmet use and in jurisdictions where legislation applies to all ages (Dennis et al., 2010; Goudie & Page, 2013; Karkhaneh et al., 2006; Karkhaneh et al., 2011).

Research from Alberta showed significant declines in the proportion of child cyclist-related emergency department head injuries and hospitalizations in the years following legislation (Karkhaneh, Rowe, Saunders, Voaklander, & Hagel, 2013). These authors concluded that their findings are consistent with a bicycle helmet legislation effect. In another Canadian study, Wesson et al. (2008) found significant reductions in cycling-related mortality in children following legislation in Ontario. Similar associations between legislation and reductions in cycling-related mortality have also been identified in the United States (Meehan, Lee, Fischer, & Mannix, 2013). Although the proportion of cyclists admitted to the hospital for head injuries in Seattle did not decrease in the ten-year period following helmet legislation, major head trauma as a proportion of all cycling-related head trauma did decrease significantly compared to the rest of King County which did not have helmet legislation (Kett, Rivara, Gomez, Kirk, & Yantsides, 2016). In other words, although the results of this study did not show an overall decrease in head injuries, it did show a decrease in the severity of head injuries and cycling-related fatalities. These findings led the authors to conclude that legislation was effective in reducing severe disability and death.

Some authors suggest that decreasing trends in head injuries in jurisdictions with helmet legislation may be due to reductions in cycling. Macpherson and Spinks (2008) suggest that comparisons between the proportion of head injuries compared with other cycling-related injuries pre- and post-legislation show significant declines in the proportion of head injuries compared to other injuries. Similarly, Joseph et al. (2017) limited their study inclusion criteria to include only patients with an intracranial bleed, giving them the ability to conclude that the observed reduction in severity of head injury was associated with helmet use rather than other factors. Macpherson et al. (2002) compared cycling-related head injuries and other cycling-related injuries in Canadian provinces with and without helmet legislation. They found that the legislation was associated with reductions in head injuries but not other cycling-related injuries, again indicating a significant effect of helmet legislation on cycling-related head injuries. Lee, Schofer, and Koppelman (2005) found similar outcomes in California when head injuries were compared to other cycling-related injuries. Olivier et al. (2013) found an increase in cycling-related arm injuries, similar to reported increases in cycling, but a reduction in cycling-related head injuries over a 10-year period

following legislation in Australia. Taken together, these studies suggest that the reported reductions in injury are due to increased helmet use following legislation, rather than a reduction in cycling.

Meehan et al. (2013) suggest that legislation can serve another purpose, in addition to increasing helmet use and decreasing injury. These authors suggest that legislation helps parents identify and adhere to best practice safety guidelines. In other words, once a safety initiative is legislated, parents believe that initiative is important to follow and easier to act on. These authors report outcomes related to booster seat legislation as evidence of this effect, and suggest that the same outcomes may be found for bicycle helmet legislation. Past surveys of Canadian parents indicated that parents are highly supportive of helmet legislation and that they believe bicycle helmets are effective for reducing injury (Parkin, Degroot, Macpherson, Fusello, & Macarthur, 2014).

Current State of Legislation in Canada

Despite calls for mandatory bicycle helmet legislation across Canada, and despite research indicating that legislation is effective at increasing helmet use and reducing injury, several provinces and territories do not have mandatory bicycle helmet legislation.[1] In addition to the three territories, two provinces do not currently have provincial legislation related to bicycle helmets, including Saskatchewan. It is for this reason that Saskatchewan is ranked "poor" in the 2016 CPS Status Report section on bicycle helmet legislation (see http://www.cps.ca/en/status-report/bicycle-helmet-legislation for more information). The CPS acknowledges that education programs are available in Saskatchewan, but the CPS continues to recommend that Saskatchewan enact legislation that requires all age groups to wear helmets. Five Canadian provinces currently have all-ages legislation, and another three provinces have bicycle helmet legislation for those under the age of 18 years.

Common Arguments against Mandatory Legislation

In their review of the literature, the CPS states that evidence for unintended consequences of helmet legislation (i.e., reduced cycling and greater risk-taking) is weak and conflicting (Hagel & Yanchar, 2013). The issue of reductions in cycling following mandatory helmet legislation has been investigated by a number of researchers. The majority of the findings suggest that legislation is not associated with long-term reductions in cycling. For example, in their review of data related to cycling in Nova Scotia post-helmet legislation, Huybers et al. (2017) indicated that helmet legislation was not associated with changes in the number of cyclists. Other researchers have also reported that legislation is not associated with a reduction in cycling (e.g., Dennis et al., 2010; Jewett et al., 2012; Karkhaneh et al., 2006; Leblanc, Beattie, & Culligan, 2002; Macpherson & Parkin, 2001; Macpherson & Spinks, 2008; Molina-García & Queralt, 2016; Wesson et al., 2008).

[1] Refer to Parachute's (2014) summary chart for more information about the current state of bicycle helmet legislation across Canada (http://www.parachutecanada.org/downloads/policy/Bike%20Helmet%20Legislation%20Chart-2014.pdf).

Kraemer (2016) found limited evidence that legislation may slightly reduce cycling (two of the four jurisdictions studied saw a decrease in cycling, while the other two jurisdictions did not). Kraemer stated that any reduction in cycling only matters from a physical health perspective if the health consequences of less activity exceed the injury benefits from helmet uptake. Other authors have also suggested that reduced cycling is only problematic in terms of health if other activities are not taken up in place of cycling (e.g., Hagel & Yanchar, 2013). However, the majority of the available literature indicates that reductions in cycling are not common following bicycle helmet legislation. Macpherson et al. (2006) suggest that year-to-year variations in cycling rates are more likely to be associated with other factors like weather or random variations in cycling, rather than legislation. Jewett et al. (2012) state that research concluding that helmet laws result in a decrease in ridership are limited and have not been duplicated.

Another common argument against mandatory helmet legislation is that if children are wearing helmets, they may engage in more risky cycling behaviours because they think they are protected from injury. Although this would be a difficult outcome to measure, research with adults has shown that those who wear helmets are more likely to engage in precautionary behaviours (Ramage-Morin, 2017). In his review of the literature, Elvik (2011) suggests that there is currently no direct evidence for the idea that helmeted cyclists adopt more risky riding behaviours.

Finally, some argue that helmet legislation may unfairly burden those living in poverty, both due to the cost of the helmet and potential fines for those who are not wearing a helmet. Canadian research suggests, however, that helmet use increases following legislation by approximately the same amount in higher and lower-income neighbourhoods, and may even increase more in lower-income neighbourhoods where the baseline rates of helmet use are often lower. For example, Hagel et al. (2006) found that helmet use increased by similar amounts in higher and lower-income neighbourhoods from two years prior to two years after Alberta's helmet legislation came into effect. Karkhaneh et al. (2011) reported similar findings for children under the age of 13 in Alberta. In Toronto, Parkin et al. (Parkin, Khambalia, Kmet, & Macarthur, 2003) found that legislation was associated with greater increases in helmet use in low and middle-income areas than in high-income areas, which had higher rates of helmet use prior to legislation. This is further evidence that legislation helps caregivers identify which safety initiatives are important to follow. In other words, caregivers may be more likely to spend money on a helmet following legislation, even if they have a lower income, because they believe it is important to do so. Bicycle helmets are not overly expensive, particularly when compared to other mandated safety equipment like car seats and booster seats. Subsidy and community programs are also possibilities for helping families obtain helmets.

Summary

There is strong evidence that bicycle helmets are significantly protective against head, brain, and upper facial injuries. There is also strong evidence that legislation increases helmet use and reduces the risk of bicycle-related head injury, particularly severe head injury. The majority of the research indicates that

rates of cycling do not decline post-legislation. Research related to the possibility of increased risk-taking associated with mandatory helmet use is lacking, and such associations would be difficult to accurately measure. In order for these rates of use to be sustained over the long-term, it is important that legislation is combined with targeted education campaigns and enforcement.

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Facts and Myths about

HELMET LEGISLATION

MYTH: Helmet laws should not apply to adults.

Helmet legislation that pertains to all ages is absolutely necessary because both adult and children cyclists are at risk for head injury. Practicing safe cycling behaviour, including wearing a bike helmet, is not something adults outgrow.

Research demonstrates the important influence of adult role models on children's helmet wearing behaviour. Children are more likely to wear a bike helmet if their adult riding companions wear helmets. In one study, 95 per cent of children wore a helmet when riding with an adult wearing a helmet, while only 40 per cent of children wore a helmet when riding with an adult who was not wearing a helmet.[1]

In addition, bike helmet legislation that applies to all ages eliminates the additional enforcement challenge of determining a cyclist's age without stopping them. All-ages bike helmet legislation would remove this obstacle to viable enforcement.

MYTH: Introducing and enforcing helmet legislation wastes time and money that could be put toward more important road safety initiatives.

Improving road safety must target all at-risk groups, including cyclists, pedestrians and motor vehicle drivers and occupants. Although it is important to invest time and money in reducing motor vehicle collisions and protecting motor vehicle occupants, increasing helmet usage amongst cyclists is vital. Wearing a helmet is a simple and cost effective approach to reducing head injuries among cyclists, and should not be overlooked.

Head injuries are the leading cause of severe injury to children on bicycles.[2] Many individuals with severe head injuries continue to live with enormous injury costs, which are borne largely by society. Investing resources in creating and enforcing helmet legislation to increase bike helmet use has significant costsaving potential. It has been estimated that for every one dollar spent on bike helmets, 30 dollars in injury costs are prevented.[3] This amounts to approximately $400,000 in medical costs in the first year of head injury alone.

Research strongly suggests that, at best, education programs alone are effective in bringing bike helmet use to only about 50 per cent of the population.[4,5] Legislation, along with ongoing education and enforcement is necessary to exceed the 50 per cent mark and make bike helmet use an accepted social norm.[6]

MYTH: Helmet laws are just another attempt to restrict lifestyle choices and regulate the private lives of individuals.

Our society accepts many laws that offer protection to individuals even though they require us to relinquish some measure of freedom. For instance, 90 per cent of Canadians now use seat belts which suggest that most individuals are willing to comply with this law even if it restricts their freedom to some degree. [7] Similar to seat belt laws, helmet laws are introduced to protect people from preventable injuries and keep individuals safe so

they can carry out daily activities that they enjoy.

Some critics argue that bike helmet laws will discourage people from cycling.[8] There is no evidence to support this claim. In fact, a study in Toronto found that, following the introduction of bike helmet legislation for children, average cycling levels for children were actually higher than the year prior to legislation.[9]

A systematic review of the effectiveness of bike helmet legislation to increase helmet use found that after the law was introduced, bike helmet use increased.[10] These studies demonstrate the positive effect of legislation in garnering helmet compliance. A recent study in Alberta found that after helmet legislation was introduced for those under age 18, helmet use increased by almost four times in this age group. In contrast, those over age 18, who were not affected by the introduction of the helmet law, did not significantly increase their helmet use.[11]

Currently, there is not a strong body of evidence to demonstrate that cycling decreases when helmet laws are introduced. However, it is commonly known that those who suffer serious head injuries can face long term consequences and even permanent disability that may prevent them from participating in many healthy active forms of recreation. Research indicates that up to eight per cent of people discontinue a recreational activity because of a preventable injury.[12]

MYTH: The effectiveness of helmets and helmet laws in reducing head injuries is questionable.

Research illustrates that a properly fitted bike helmet helps protect the head by absorbing the force from a crash or a fall, and decreases the risk of a serious head injury by as much as 85 per cent and brain injury by 88 per cent.[13, 14, 15] Systematic reviews have proved the effectiveness of bike helmets at reducing head injuries and the effectiveness of helmet legislation in increasing helmet use. Systematic reviews are widely regarded by researchers as reliable evidencebased assessments of health care practices.

A cross-Canada study has demonstrated that head injury rates among child and youth cyclists are about 25 per cent lower in provinces with helmet legislation, compared to provinces without legislation. Of the many factors examined in the study, only the presence of a bike helmet law in the child's province was significantly associated with a lower rate of hospitalization for head injury among young cyclists. Over the four year period studied, it was determined that 687 hospitalizations for head injuries to child cyclists could have been prevented if every province and territory had bike helmet legislation in place.[16]

Myth: Wearing helmets may give cyclists a false sense of security which may encourage them to take more risks.

Some critics assert that cyclists who wear helmets may feel more protected, resulting in greater risk-taking behaviour, with a subsequent increase in bicycle related injuries. If this theory is correct we might expect to see greater rates of injury overall after the introduction of bike helmet legislation, with the assumption that an increased number of helmet-wearing cyclists are taking more risks. However, current evidence contradicts this theory. Studies in several countries have revealed that after bike helmet legislation is introduced, head injury rates to cyclists have declined.[17]

These studies indicate that riders who wear helmets do not take greater risks than those who do not wear bike helmets. There is no credible scientific data to support the "risk compensation" theory. In fact, recent case-control research found that the use of protective equipment (various types) did not result in reports of greater risk-taking behaviour in the sample of children aged eight to 18 in this study.[18]

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SASKATOON CYCLES (SC)

SUBMISSIONS TO THE CITY OF SASKATOON STANDING POLICY COMMITTEE ON TRANSPORTATION

BYLAW NO. 6884

"The Bicycle Bylaw"

SUBMITTED BY THE BOARD OF SASKATOON CYCLES INC

July 2017

I. Table of Contents

II. Acknowledgements

Saskatoon Cycles would like to acknowledge the University of Saskatchewan Branch of Pro Bono Students Canada for making this submission possible through partnering us with Scott Silver, BA, MA, JD candidate (2017) who worked in collaboration with and under the supervision of Benjamin Ralston, BA, JD, LLM, a former board member of Saskatoon Cycles. Saskatoon Cycles would also like to acknowledge board members Lee Smith, BA (Hons), RPP and Jeannine Paul, BSc, MSc for their helpful guidance and contributions to this submission. Notably, Lee Smith was also a member of the now defunct City of Saskatoon Cycling Advisory Group that previously sought to reform and update city's cycling bylaws. Finally, we would like to acknowledge the rest of the board of Saskatoon Cycles for their helpful input and feedback on this document, as well as the membership for their input during consultation on it.

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III. Introduction

Founded in 2010, Saskatoon Cycles is a registered non-profit that advocates for a city in which cycling is a viable, year-round mode of transportation that is safe and convenient for all ages. Our vision for the City of Saskatoon includes a city where residents of all ages feel safe and welcome to cycle year-round and mutual respect and tolerance exists for all modes of transportation. In keeping with our organization's objectives and vision, we request that the City of Saskatoon reconsiders and revises Bylaw No. 6884 ("the Bicycle Bylaw") to remove potentially dangerous, confusing and outdated provisions and bring this bylaw in line with current best practices.

We frequently hear concerns from our members over several existing provisions in the Bicycle Bylaw and the city's attempts at enforcing these against them. In 2012, we polled our members to hear their concerns directly and the product of that polling was provided to the city for review. We also understand that the now defunct Cycling Advisory Group was working on seeking reform of uncontroversial items in collaboration with the city's administrative staff. Furthermore, we note that the City of Saskatoon's Active Transportation Plan expressly calls on the city to review and update the Bicycle Bylaw to ensure that it reflects best practices and emerging technologies and equipment.[i] For these reasons, we decided to build on our earlier work by making a submission directly to the Standing Committee on Transportation to facilitate an informed discussion of the bylaw by members of city council.

We note that a municipal corporation such as the City of Saskatoon exists to fulfill such purposes as developing and maintaining a safe and viable community and fostering the economic, social and environmental well-being of that community.[ii] These purposes must guide city council's exercise of its bylaw-making powers.[iii] While we recognize that the city has wide discretion in regulating transportation through bylaws,[iv] we further note that there are limits to the city's ability to impose dangerous conditions on cycling.[v] We also question whether there might be limits to the city's ability to restrict people's access to and movement through public space by way of bicycle.[vi] Furthermore, we note that there may be legal restrictions on the city's ability to discriminate between individuals traveling by bicycle and those using other modes of transportation with respect to access to public spaces such as roads and sidewalks.[vii] We ask that the city bear these legal principles in mind when reviewing this submission and reconsidering provisions in the current Bicycle Bylaw.

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We also recognize that the fulfillment of the city's obligations in terms of providing safe and equitable transportation options will require more than mere bylaw reforms. Greater investment in cycling infrastructure in the city is a priority for our organization and we acknowledge the significant steps that the city is taking in this regard, particularly by way of the Active Transportation Plan. Nevertheless, we believe that the Bicycle Bylaw must be reformed as part of a comprehensive approach to ensuring the safety, comfort and convenience of people traveling by bicycle in Saskatoon.

Finally, we note that the Saskatoon has unique considerations for our northern climate and for this reason we have tried to include examples of best practices from jurisdictions with broadly comparable winters in terms of sub-zero temperatures and substantial snowfall.

IV. Provisions of Concern

A. Use of horn or bell (section 6)

Our members have raised concerns with this provision being unwieldy, impractical, unnecessary and impossible to fully enforce. We strongly recommend that this section of the Bicycle Bylaw be removed in its entirety.

No empirical support for mandating use of bells or horns

In the preparation of this submission for reform to the Bicycle Bylaw we reviewed numerous studies of cyclist/motorist and cyclist/pedestrian collisions, including collision reports for the cities of Boston, Chicago, Denver, and Vancouver and coroner's reports from Ontario, Toronto, and New Zealand.[viii] In spite of the number and variety of collisions analyzed in these reports and the number and variety of prescriptive recommendations for improved laws, education and enforcement coming out of these reports, it is notable that not one single report we found identified the failure to use bike bells or horns as a contributing factor in the crashes they analyzed. Likewise, not one single report we found recommended making the use of such devices mandatory, or even recommended greater education or enforcement with respect to use of such devices in preventing future collisions. In fact, we were unable to find any empirical

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support whatsoever for the use of bike bells or horns as a safety device to protect either cyclists or pedestrians. On this basis alone, legally mandating the use of such devices is difficult to support.

Practical issues

Many people in the city use road bikes or triathlon bikes for competitions, exercise and training and these bikes are generally designed in such a way that their handlebars will not accommodate ordinary bells or horns. Furthermore, road and triathlon cyclists generally do not wish to further encumber their bikes with bells or horns when these bikes are designed to be as light as possible, are very fast moving and almost exclusively used on roads where bells and horns are of limited utility. We do not anticipate that many road or triathlon cyclists in the city comply with this section of the bylaw, nor do we believe that they should be mandated to.

It is also worth noting that there are many different types of bicycles used for many different types of legitimate purposes in Saskatoon, some of which do not involve commuting or regular interactions with pedestrians. We do not anticipate that a mandatory requirement for a bike bell or horn ought to apply to bicycles such as BMXs, fixed gears or certain types of mountain bikes when these are used solely for recreational purposes that do not give rise to any pedestrian/cyclist interactions, such as when used in skate parks or arenas for polo.

We also urge the city to consider whether a requirement for bicycles to be outfitted with bells or horns that are audible at a distance of not less than 35 metres away could ever possibly be enforced. The audibility of a horn or bell would vary greatly depending on such factors as ambient noise levels and weather conditions, for example. It is also hard to imagine how one could determine whether a particular bell or horn met this requirement before issuing a ticket for an infraction of this bylaw.

The "Bell or Yell" Debate

Some cyclists choose to simply slow down before passing another cyclist or pedestrian and will audibly tell that person that they are "(passing) on your left" before overtaking. We are not aware of any reason why doing so should be any less effective or more startling than the use of a bell or horn to alert pedestrians or other cyclists of one's intention to overtake. We recognize differing views on whether use of a bell is more or less courteous than the use of one's own voice (the so-called "bell or yell" debate). However, subjective preferences on cycling etiquette

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do not provide defensible support for legally mandating use of a device that has not been empirically shown to improve safety for either cyclists or pedestrians.

Preferable provisions from other jurisdictions

It would be preferable for there to be no requirement for a bell or horn, as appears to be the case in many of the jurisdictions we examined for the purposes of this submission. By way of example, Ohio law no longer requires a bell or horn for cyclists,[ix] nor does British Columbia's *Motor Vehicle Act*.[x] Oregon law has created a more practical and flexible provision by requiring cyclists to "give an audible warning before overtaking and passing a pedestrian" without attempting to constrain how that audible warning might be given.[xi] We also found numerous other states had either no requirement whatsoever for a bell or horn,[xii] or had taken a similar approach to Oregon in allowing the use of one's voice as a suitable alternative to a bell.[xiii] We strongly suggest that this provision be removed in its entirety. However, in the alternative, we suggest that the city not try to constrain how "audible warnings" are given so as to not impose impractical restrictions on certain types of cyclists.

B. Position on street (section 8)

As currently drafted, the bylaw requires people on bikes to be positioned on the street so "as to be as close as is reasonably practicable to the right hand curb" unless they are approaching an intersection and indicating an intention to turn. We submit that this requirement should either be removed in its entirety or further clarified with respect to additional justifiable exceptions to a general rule to stay right.

Hazardous conditions adjacent to curbs

This provision is of significant concern to our members due to ambiguity around the meaning of being "as close as is reasonably practical to the right hand curb". This could be interpreted as requiring cyclists to make room for motor vehicles to pass by hugging the curb, even though this part of the street is often poorly maintained, pot-holed and full of gravel and other hazards. This provision could also be interpreted as negating a cyclist's right to "take the lane" when they are concerned that it would be unsafe for a motor vehicle to try to pass them due to the presence of hazards such as these. The city also ought to consider how such an ambiguous

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requirement could interact negatively with any duty of care it may owe to people on bikes in terms of proper maintenance of roads.[xiv]

Inconsistency with cycling best practices

The city ought to consider how such an ambiguous requirement might inadvertently encourage people on bikes to engage in dangerous behaviour such as riding within a door's length of parked cars or weaving in and out between parked cars in order to stay as far to the right as possible. The Saskatchewan Prevention Institute recommends that people ride their bikes in a straight line one metre away from parked cars to ensure they remain visible to motorists and out of danger from car doors suddenly opening or parked cars suddenly pulling into traffic.[xv] The Prevention Institute also recommends that people ride bicycles one metre away from the curb in order to maintain visibility and avoid holes, debris, grates and other hazardous objects often found directly adjacent to the curb.[xvi] The City of Saskatoon's own Cycling Rules of the Road likewise acknowledge the right to ride one's bike in the centre of any traffic lane, and advise people to always ride in a straight line, not weave in and out of parked vehicles, and allow room on both one's right and left to get around hazards or to move aside if you are passed too closely.[xvii] It is hard to square the city's own understanding of the rules of the road and cycling best practices with a bylaw provision that says little more than 'keep right except when turning'.

Unfavourable treatment of bicycles compared to other vehicles

It is also worth considering whether this provision might unduly discriminate between bicycles and other motor vehicles. Bicycles are lumped in with other vehicles for the purposes of provincial traffic safety laws,[xviii] yet this provision of the bylaw singles bicycles out in mandating cyclists to keep to the right of any traffic lane in which they find themselves (as opposed to keeping to the right lane on multi-lane routes). This is particularly concerning since a considerable proportion of fatal bicycle-motor vehicle collisions occur when motorists attempt to pass cyclists from behind without waiting for a gap in traffic to ensure they are passing at a safe distance.[xix] It is also concerning in light of the significant number of bicycle-motor vehicle collisions that involve "doorings" from parked cars, especially on major streets with parked cars and no cycling infrastructure.[xx] The city may wish to consider whether such unfavourable discrimination against bicycles in terms of where they ought to be positioned on the street is advisable in light of the hazards it may create for cyclists.

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Preferable provisions from other jurisdictions

Several American jurisdictions have a similar requirement for bicycles to be "as close as reasonably practicable to the right hand of the curb" but have set out a greater number of exceptions to this general rule that favour the safety of cyclists. Relevant exceptions to staying right in these jurisdictions include: when overtaking or passing another vehicle; when reasonably necessary to avoid other vehicles or obstructions; where there are narrow lane widths or other hazards; where there are three lanes of traffic; and where there is one way traffic.[xxi]

Ontario's *Highway Traffic Act* provides for several similar exceptions to those set out in American jurisdictions.[xxii] British Columbia's *Motor Vehicle Act* also has a noteworthy exception that none of its restrictions on cyclists "require a person to ride a cycle on any part of a highway that is not paved".[xxiii]

We also strongly recommend a 'catch all' exception to the requirement to staying right where doing so would compromise a cyclist's safety. For example, consider the following exception language from Ohio's traffic laws with respect to vehicles staying to the right of lanes: "Nothing in […] this section requires a driver of a slower vehicle to compromise the driver's safety to allow overtaking by a faster vehicle".[xxiv] While that language is drafted for a law that impacts bicycles and other vehicles equally, it could easily be adapted for inclusion in the Bicycle Bylaw, which we strongly recommend if the city is to continue to have any rule for staying right in the Bicycle Bylaw.

One metre minimum passing distance requirement

Several jurisdictions across the world have implemented requirements for motor vehicles to provide at least one metre of space to cyclists when overtaking them, which ensures that motorists have countervailing obligations towards cyclists in these circumstances rather than putting the onus solely on the more vulnerable road user. Twenty-six American states have already enacted requirements for motorists to provide cyclists with at least two feet of space when passing, and two additional states have implemented even greater space requirements for passing cyclists.[xxv] Either one metre or 1.5 metre minimum passing distances are also required in various other jurisdictions including the Netherlands, France, Portugal, Belgium, Spain, and the Western Cape Province of South Africa.[xxvi] In Australia, the state of South Australia requires a one metre passing distance on roads with speeds up to 60km/h and 1.5 metres on roads with higher speeds. Similar minimum passing distances are also being trialed in

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the states of Queensland, New South Wales and the Australian Capital Territory, and a parliamentary inquiry is currently investigating minimum passing distances for Victoria.[xxvii] Here in Canada a one metre passing distance is required in both Ontario and Nova Scotia.[xxviii]

The city ought to consider whether setting a one metre minimum passing distance within Saskatoon by bylaw is feasible and desirable. While it would be ideal for such a restriction to apply across the province through an amendment to the *Highway Traffic Act*, it may be possible for the city to take the lead on this through its more localized jurisdiction.

C. Prohibition against cycling on sidewalks (section 8)

As currently drafted, the bylaw also requires cyclists to "utilize only that portion of the street as is intended for the passage of motor vehicles", which we interpret as prohibiting usage of bicycles on sidewalks in the city, except where otherwise provided for. We suggest that this section of the bylaw ought to be carefully revised to allow for cycling on the sidewalks in certain circumstances.

Hazardous conditions on roads

First and foremost, we are concerned that a blanket restriction on cycling on sidewalks is not equally practical in all neighbourhoods and areas of the city, nor is it necessarily practical during all seasons. For example, in areas of the city that are frequented by industrial vehicles it can be intimidating and dangerous for cyclists to ride on the road during periods of heavy traffic. To the extent that some of these same roads have sidewalks, we strongly encourage the city to recognize the need for an exception for the use of bicycles on those sidewalks to avoid such hazardous and intimidating roadways. We are also aware that many of our members refuse to cycle on highly trafficked roadways during the winter and opt for riding on the sidewalks in order to avoid snow and ice on roads where a significant amount of motor vehicle traffic is present. Again, we strongly suggest that the city consider how a blanket prohibition on cycling on sidewalks could interact negatively with any duty of care it may owe to people on bikes in terms of proper maintenance of roads.[xxix] We strongly advocate against the city mandating people to ride their bikes in such a manner as might put them in danger.

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Inconsistency of application

We are also concerned that this blanket prohibition against cycling on sidewalks is paired with various ad hoc exceptions that make it difficult to know where this restriction applies and where it might not apply. For example, the bylaw currently exempts cycling on the sidewalk portions of bridges in the city from this prohibition at section 21(c). We are also aware that sections of the sidewalks that link to the bridges provide for a similar exemption, having been designated for 'shared use'. In practice, however, we are aware of conflicts between pedestrians and cyclists on these shared use sidewalks based on the general presumption of some pedestrians that cyclists never have a right to ride on sidewalks. We are also aware of confusion that cyclists face in determining where sidewalks cease to be available for shared use, which can lead to further pedestrian-cyclist conflict. While we advocate that the city pursues the ultimate goal of having effective and connected cycling infrastructure throughout the city so that cycling on sidewalks is never necessary, the status quo in Saskatoon involves a complex patchwork of exceptions to the general prohibition against riding on sidewalks that makes it confusing and difficult to conform to this rule in all instances.

Application to children of all ages

Furthermore, we have concerns over the broad application of the prohibition against cycling on sidewalks so as to include children of all ages within its ambit. Bearing in mind differences in terms of overall vulnerability, level of awareness and control, level of speed and agility, and matters of size and visibility as between young children and adults, as well as the types of bicycles designed for them, we strongly suggest that the city consider exempting children under a certain age from this prohibition's application. We strongly discourage the city from mandating that children operate their bicycles in such a manner as might put them in danger.

Preferable provisions from other jurisdictions

We suggest that the city consider whether it would be appropriate to generally allow cycling on sidewalks subject to explicit restrictions, as is the case in Oregon.[xxx] Oregon law provides cyclists riding on sidewalks with the same rights and duties as pedestrians, subject to various restrictions that constitute "unsafe operation of a bicycle on a sidewalk".[xxxi] The restrictions on cycling on sidewalks are limited to prohibitions against: (a) suddenly leaving the curb and entering the path of vehicle that is close enough to constitute an immediate hazard; (b) not giving an audible warning before overtaking or passing a pedestrian and not yielding the right of

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way to all pedestrians on a sidewalk; (c) cycling in a careless manner that is likely to endanger a person or property; (d) cycling at a speed greater than an ordinary walk when approaching or entering a crosswalk, approaching or crossing a curb or pedestrian ramp when a motor vehicle is approaching; or (e) operating an electric assisted bicycle on a sidewalk. We submit that these onerous restrictions on cycling on sidewalks may obviate the need for a blanket prohibition against cycling on sidewalks.

If necessary, these prohibitions could also be paired with area restrictions against cycling on sidewalks along designated streets where there is a higher likelihood of pedestrian-cyclist collisions, such as areas where pedestrians are regularly entering and exiting buildings (for example, along Broadway, 20th or in the downtown core).

In the alternative, we suggest that the city considers adding further exemptions such as those set out in Finland's *Road Traffic Act*, which allows children under 12 to ride their bikes on the sidewalk so long as they do not unduly interfere with pedestrian traffic.[xxxii] It also allows all cyclists temporary use of the sidewalks where they have "special reasons" for doing so, so long as this use does not cause danger or considerable inconvenience to pedestrians. These exemptions could help address some of the concerns set out above with impracticalities around the current status quo in this regard.

One final point would be that however the city chooses to proceed with the issue of cycling on sidewalks, it is important that adequate direction is provided for the benefit of cyclists, pedestrians and motorists alike in terms of clarifying what is allowed and what is not. We strongly encourage the city to provide clear road paint or signage for this purpose, especially where there is currently an unclear transition between shared paths and sidewalks that are intended to be exclusively used by pedestrians.

D. Stunting (section 10)

While our members had not raised any particular concerns over this provision in our previous consultation and we have not given it priority in this review of the Bicycle Bylaw, we do encourage the city to consider whether a provision prohibiting cyclists from engaging in "any acrobatic or other stunt" is consistent with the city funding the construction and maintenance of numerous skateboard parks that may be reasonably expected to be used by individuals on

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BMX and freestyle fixed gear bicycles, among other types of bicycles. Such a restriction can also be seen as conflicting with recreational trails throughout the city used by individuals on mountain bikes. We also encourage the city to consider how a general prohibition on stunting might discriminate between bicycles and other recreational modes of transportation such as skateboards or roller skates or blades that might reasonably be expected to be used for "stunting" purposes, especially in designated parks.

The city might consider simplifying this paragraph so that it maintains a requirement for cyclists to keep at least one hand on the handlebars at all times (see discussion of "loads" below), but removing the remainder of the provision.

E. Passengers (section 11)

Our members have raised concerns with this provision being obsolete and unnecessary due to the proliferation of types of bicycles that are purpose built for carrying more than one passenger, most of which would not be caught by the overly specific and obscure exception for bicycles with "a properly constructed pillion seat securely fastened over the rear wheel". We strongly recommend that this section of the Bicycle Bylaw be removed in its entirety.

Preferable provisions from other jurisdictions

If the city insists on having an alternative provision in place that prohibits 'doubling' on bicycles not built for more than one passenger—an objective that we neither endorse nor encourage absent more data to suggest that such a prohibition is necessary and advisable—then the city ought to at least consider using simpler and more effective language to accomplish this goal. For example, Ontario's *Highway Traffic Act* simply states that "[p]assengers are not allowed on a bicycle designed for one person",[xxxiii] which ensures that multi-passenger bicycles designed for that purpose are not inadvertently caught by this section of the bylaw. A similar provision is found in British Columbia's *Motor Vehicle Act*, where it is stated that a cyclist "must not use the cycle to carry more persons at one time than the number for which it is designed and equipped".[xxxiv]

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F. Loads (paragraph 12)

Our members have raised concerns with this provision being unnecessary as we are not aware of any data or evidence to suggest that over-loading of bicycles has been causing accidents in the city or elsewhere in the province. We recommend that this section of the Bicycle Bylaw also be removed in its entirety.

Preferable provisions from other jurisdictions

We further note that many other jurisdictions have not found load restrictions necessary in light of requirements for cyclists to be able to keep at least one hand on their handlebars at all times. For example, in Oregon a cyclist "commits the offense of having an unlawful load on a bicycle if the person is operating a bicycle and the person carries a package, bundle or article which prevents the person from keeping at least one hand upon the handlebar and having full control at all times",[xxxv] effectively tying these two restrictions together. California law has similarly created a load restriction that is only engaged where a package "prevents the operator [of a bicycle] from keeping at least one hand upon the handlebars".[xxxvi] Load restrictions are also notably absent from the restrictions on cyclists set out in Ontario's *Highway Traffic Act* and British Columbia's *Motor Vehicle Act*.

Practical issues

We also wish to highlight the difficulty that the city would have in enforcing this section of the Bicycle Bylaw as currently drafted since it sets out precise dimensions and weight in terms of the restrictions that it imposes. Further still, the city ought to consider how this provision might conflict with the use of bicycles that have been specifically designed for carrying very large loads, as there are bicycles designed for transportation of large packages as well as bicycles designed for touring purposes that are engineered so as to accommodate large weights that other bicycles may not safely and comfortably accommodate.

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G. Obligatory use of cycling lanes (section 13)

Our members have raised concerns with this provision being unnecessary, unwieldy and, where cycling lanes are not properly designed or maintained, dangerous. We recommend that this section of the Bicycle Bylaw also be removed in its entirety.

Hazardous conditions in cycling lanes

Of greatest concern is that this provision could require cyclists to use cycling lanes even where these are often poorly maintained and full of gravel and other hazards, especially in winter. While we are strongly in support of protected cycling lanes and believe that these lanes are well-used by cyclists when properly designed and maintained, we commonly hear concerns from our members over gravel, dirt and debris accumulating in 'painted on' cycling lanes, and we believe that the city is already well aware of issues that the protected cycling lanes on 23rd Street have faced with accumulated rainwater, snow and ice during the winter, which can render these dangerous during certain conditions. Again, we submit that the city ought to consider how mandating the use of cycling lanes might negatively interact with any duty of care the city may owe to people on bikes in terms of proper maintenance of roads.[xxxvii]

Unfavourable treatment of bicycles compared to other vehicles

We also submit that the city ought to consider whether this provision might unduly discriminate between bicycles and other motor vehicles. Again, while bicycles are lumped in with other vehicles for the purposes of provincial traffic safety laws,[xxxviii] this provision of the bylaw singles bicycles out in mandating the use of cycling lanes with only a limited exception for turning. We did not find analogous restrictions in other jurisdictions that we investigated. In fact, we found that similar restrictions were notably absent from the relevant provincial laws in Ontario and British Columbia.

Preferable provisions from other jurisdictions

British Columbia's *Motor Vehicle Act* explicitly reiterates that aside from the exceptions that it explicitly sets out, which do not mandate use of cycling lanes, "a person operating a cycle on a highway has the same rights and duties as a driver of a vehicle".[xxxix] We suggest that the city should take a similar non-discriminatory position on cycling, allowing people travelling by

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bicycle to choose whether or not to use cycling infrastructure depending on the conditions in which they find that infrastructure.

In the alternative, we suggest that the city provide for more explicit exceptions to a general requirement for use of cycling lanes. For example, in Oregon use of cycling infrastructure is not obligatory when: (a) overtaking another bicycle; (b) preparing to execute a left turn; (c) avoiding debris or other hazardous conditions; (d) preparing to execute a right turn; (e) continuing straight at an intersection where the bicycle lane is to the right of the lane from which a motor vehicle must turn right.[xl] There are very important practical reasons for including such exceptions, as discussed below.

Practical issues

Where cycle lanes are protected, there is a further issue around making left turns. A cyclist might choose not to enter the cycling lane on 23rd Street, for example, so as to safely and easily make a left turn onto a perpendicular road. Forcing cyclists to use the cycling lane at all times would make for overly burdensome restrictions when it might be easier, safer and more intuitive to make the turn from the traffic lane itself.

We are also concerned with the potential for this section to encourage conflicts between motorists and cyclists where the latter users of road infrastructure are non-compliant due to concerns over safety and practicality. As cyclists are the more vulnerable user group between the two, we strongly recommend against provisions that further entitle motorists to use of roads at the expense of the safety and practicality of cycling in the city.

H. Dismounting to pass pedestrians (section 21(c))

Our members have raised concerns with this provision being unnecessary and impractical. We strongly suggest that the city remove this provision in its entirety.

Practical issues

First and foremost, the provision is simply illogical. If a cyclist is forced to dismount their bicycle in order to pass a pedestrian on foot, a practical issue then arises as to how they can walk faster, while pushing their bike, so as to still pass that pedestrian once dismounted.

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Furthermore, the question arises as to how they can still comfortably pass that pedestrian once dismounted, as you then have a person and their bike, side-by-side, attempting to pass another person. If anything, dismounting the bike to pass should only make the experience more uncomfortable and inconvenient for the pedestrian who might otherwise be seen to benefit from this rule but is now crowded out in the small sidewalks that traverse our main downtown bridges. The situation becomes even more unwieldy where a cyclist might be carrying a load, elderly or otherwise less physically capable of pushing their bikes across the bridges, two of which have notable inclines.

We encourage the city to consider whether there is any merit or benefit from this restriction when the Bicycle Bylaw already otherwise provides pedestrians with a right of way that cyclists must yield to, among other restrictions. It is unclear to us what further benefit might be obtained by this confusing and impractical restriction.

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V. Summary of Recommendations

1) **Either remove the requirement for a horn or bell or replace this with a requirement that an audible warning be given before pedestrians are overtaken and passed**

2) **Either remove the requirement for cyclists to stay close to the right curb or revise this requirement to include a greater number of exceptions**

3) **Consider implementing a one metre minimum passing distance for motor vehicles overtaking cyclists within city limits**

4) **Remove the blanket prohibition against cycling on sidewalks and replace this with either area and behavioural restrictions as to where and how cycling on sidewalks can be safely conducted or provide exemptions for children under 12 and temporary use of sidewalks to avoid hazardous conditions**

5) **Remove the prohibition against stunts and acrobatics on bicycles**

6) **Remove or substantially revise the prohibition against passengers on bicycles to accommodate the full variety of bicycles designed for such purposes**

7) **Remove the load restrictions on cyclists**

8) **Remove the requirement for cyclists to use cycling lanes or revise this requirement to include a greater number of exceptions**

9) **Remove the requirement for cyclists to dismount before passing pedestrians while crossing bridges in the city**

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VI. References

[i] City of Saskatoon, *Active Transportation Plan: Final Report* (Urban Systems Ltd: June 2016) at 86.

[ii] *The Cities Act*, SS 2002, c C-11.1, ss 4(2)(c) & (d).

[iii] See, for example, *Halifax (Regional Municipality) v Canada (Public Works and Government Services)*, 2012 SCC 29 at [55], and *Catalyst Paper Corp v North Cowichan (District)*, 2012 SCC 2 at [25].

[iv] *Ibid*, s 8(1)(e).

[v] See, for example, *Canada (AG) v Bedford*, 2013 SCC 72 for a discussion of the circumstances in which a government's imposition of dangerous conditions on an otherwise legal activity might unjustifiably infringe an individual's right to life, liberty and security of the person under section 7 of the *Canadian Charter of Rights and Freedoms*. Coincidentally, the Supreme Court of Canada raised a hypothetical example of a law making cycling more dangerous in its discussion of the causal connection required in order to find such a law unconstitutional under section 7 of the *Charter* (see para [87]).

[vi] See, for example, *R v Heywood*, [1994] 3 SCR 761, *R v Budreo*, (2000) 46 OR (3d) 481 (ONCA) and *Baril v Obelnicki*, 2007 MBCA 40 for discussions of how restrictions on an individual's freedom of movement or to roam in places where the rest of the public is free to roam can engage that individual's liberty under section 7 of the *Charter*. See also *R v SA*, 2014 ABCA 191: While a majority of the Alberta Court of Appeal expressed significant doubt that section 7 could extend to protect an individual's right to access and use public transportation, it is worth noting that they relied in part on the possibility of the appellant purchasing a secondhand bicycle in concluding that her poverty did not mean that a ban from public transit infringed her section 7 rights. In dissent, Bielby JA concluded that a ban from public transportation did engage the appellant's section 7 rights as it was necessary for her to access goods and services in the City of Edmonton. It is therefore at least worth considering whether some economically marginalized residents of the City of Saskatoon might have their section 7 rights engaged by extensively prohibitive restrictions on cycling.

[vii] See for example *Elbow Valley Cycle Club v Rockyview (Municipal District No 44)*, (1997) 50 Alta LR (3d) 150 (ABQB) where the Court quashed a bylaw that prohibited cyclists from riding on a particular public roadway on the basis that this bylaw discriminated between motor vehicles and bicycles in a way that was not expressly authorized by Alberta's *Highway Traffic Act*, RSA 1980, c H-7. Note that discrimination in this administrative law sense is different than the forms of discrimination prohibited under the *Charter* or domestic human rights legislation. For further discussion of this limit on bylaw-making powers see for example: *Montréal v Arcade Amusements Inc*, [1985] 1 SCR 368, *R v Sharma*, [1993] 1 SCR 650, and *Greater Victoria School District No 61 v Oak Bay (District)*, 2006 BCCA 28.

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[viii] City of Boston, *Cyclist Safety Report* (2013); City of Chicago, *2012 Bicycle Crash Analysis: Summary Report and Recommendations* (2012); City of Toronto, *Bicycle/Motor Vehicle Collision Study* (2003); Denver Public Works, *Bicycle Crash Analysis: Understanding and Reducing Bicycle & Motor Vehicle Crashes* (2016); Dr. Koorey, *New Zealand Chief Coroner's Inquiry Into Cycling Deaths* (2013); Office of the Chief Coroner for Ontario, *Cycling Death Review* (2012); Urban Systems, *Cycling Safety Study: Final Report for City of Vancouver* (2015).

[ix] Section 4511.56, *Ohio Revised Code* (2006).

[x] Section 183, *Motor Vehicle Act*, RSBC 1996, c 318.

[xi] Section 814.410(1)(b), *Oregon Revised Statutes*, vol 15, c 814 (2015).

[xii] See for further examples: section 42-4-221, *Colorado Revised Statutes*, c 42; section 46.61.780, *Revised Code of Washington*, c 46.61; section 21201, *California Vehicle Code*, c 479; section 169.222, *Minnesota Statues*, c 169; section 347.89, *Wisconsin Statutes*, c 347; section 9-21-11-8, *Indiana Code 2016*, c 11.

[xiii] See for further examples: section 316.2065(10), *Florida Statutes*, c 316; section 61-8-608, *Montana Code Annotated 2015*, c 450; section 11B, *Massachusetts General Laws*, c 85.

[xiv] See for example *Johnson v Milton (Town)*, 2008 ONCA 440 and *Wong v Vancouver (City)*, 2001 BCSC 693.

[xv] See Saskatchewan Prevention Institute, Bike and Wheel Safety/Bicycle Safety Week, Rules of the Road <online: http://www.skprevention.ca/bike-and-wheel-safety/#Rules of the Road – accessed 26/03/16>.

[xvi] *Ibid*.

[xvii] See City of Saskatoon, Information for Cyclists, Cycling Rules of the Road <online: https://www.saskatoon.ca/sites/default/files/documents/cycling_guide_web.pdf - accessed 26/03/16>.

[xviii] See *The Highway Traffic Act*, SS 1986, c H-3.1, s 2(1)(hh) and *The Traffic Safety Act*, SS 2004, c T-18.1, s 2(1)(ccc). See also *Jones v Falconer*, (1993) 114 Sask R 121 (SKQB).

[xix] See for example Office of the Chief Coroner for Ontario, *Cycling Death Review* (2012) at 24. The Office of the Chief Coroner of Ontario found that the majority of the 129 cyclist deaths that occurred in Ontario between January 1, 2006 and December 31, 2010 were caused by motorists passing cyclists from behind at unsafe distances, leading the Office to recommend the introduction of a one meter/three foot passing rule. See also the City of Toronto Works and Emergency Services Department, Bicycle/Motor Vehicle Collision Study, 2003, which involved the review of 2,572 car/bike collisions that occurred between 1997 and 1998. The study found that 11.9% of all collisions occurred when cyclists were overtaken by motorists and these collisions were more likely to be either minimal or fatal, with fewer 'in-between' injuries than other types of collisions (p 95). In 13.4% of these collisions motorists were found to have

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misjudged how much space was available to pass. See also W.W. Hunter et al, "Bicycle Crash Types: A 1990s Informational Guide", US Dept of Transportation (1997), which studied 3,000 bicycle-motor vehicle crashes in six states, finding 8.6% of crashes occurred when motor vehicles overtook cyclists and 28% of cyclists involved in such crashes sustained serious or fatal injuries.

[xx] See for example Kay Teschke et al, "Bicycling crash circumstances vary by route type: a cross-sectional analysis", BMC Public Health 2015, 24:1205. The authors examined data from 690 cycling crashes reported in Vancouver and Toronto between May 2008 and November 2009, finding that 9.2% of these crashes involved vehicles doors, with the majority occurring on major streets with parked cars and no cycling infrastructure. See also the City of Toronto *Bicycle/Motor Vehicle Collision Study*, 2003, referenced above. The study found that 11.9% of car/bicycle collisions between 1997 and 1998 involved vehicles doors and these collisions resulted in injuries that were more severe than average (p 83).

[xxi] See for example 2015 Minnesota Statutes, 169.222 Operation of Bicycle, subd. 4 Riding Rules, which provides exceptions for overtaking and passing another vehicle, preparing for a left turn, avoiding hazards, and when riding on a shoulder or in a bicycle lane. See also the California Vehicle Code 21202(a), which provides similar exceptions and only requires bicycles to keep right where they are being operated at a speed less than the normal speed of traffic moving in the same direction. See also Ohio Bill 389, 4511.55 for similar exceptions to a general rule that bicycles should keep right. See also Nova Scotia's *Motor Vehicle Act*, RSNS 1989, c 293, section 171(4).

[xxii] Section 147(2), *Highway Traffic Act*, RSO 1990, c H.8.

[xxiii] Section 183(3), *Motor Vehicle Act*, RSBC 1996, c 318.

[xxiv] Section A(2), *Ohio Revised Code*, Chapter 4511.25 (2016).

[xxv] See National Conference of State Legislatures, Safely Passing Bicyclists Chart (12/17/2015) <online: http://www.ncsl.org/research/transportation/safely-passing-bicyclists.aspx - accessed 03/26/16>, which lists Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Kansas, Louisiana, Maine, Maryland, Minnesota, Mississippi, Nebraska, Nevada, New Hampshire, Oklahoma, Tennessee, Virginia, Utah, West Virginia, Wisconsin, Wyoming and the District of Columbia as having 3ft passing laws. It also lists Pennsylvania as having a four foot passing law and South Dakota having a two-tiered passing law with a 3ft requirement on roads with speed limits less than 35mph and a 6ft requirement on roads where any greater speed is allowed.

[xxvi] N Haworth & A Schramm "The safety of bicycles being overtaken by cars: What do we know and what do we need to know?" Proceedings of the 2014 Australasian Road Safety Research, Policing & Education Conference.

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[xxvii] Amy Gillett Foundation, A Metre Matters – National update, March 2016 <online: http://www.amygillett.org.au/wp-content/uploads/2016/03/1.-A-metre-matters-national-update-March-2016.pdf - accessed 03/26/15>.

[xxviii] See Ontario's *Highway Traffic Act*, RSO 1990, c H.8, section 148(6.1). See also Nova Scotia's *Motor Vehicle Act*, RSNS 1989, c 293, section 171B(1)(b).

[xxix] See for example *Johnson v Milton (Town)*, 2008 ONCA 440 and *Wong v Vancouver (City*), 2001 BCSC 693.

[xxx] Section 814.450, *Oregon Revised Statutes*, vol 15, c 814 (2015).

[xxxi] Sections 814.450 (1) & (2), *Oregon Revised Statutes*, vol 15, c 814 (2015).

[xxxii] Section 8, *Road Traffic Act* 1981/267 (Finland).

[xxxiii] Section 178(2), *Highway Traffic Act*, RSO 1990, c H.8.

[xxxiv] Section 183(2)(g), *Motor Vehicle Act*, RSBC 1996, c 318.

[xxxv] Section 814.410, *Oregon Revised Statutes*, vol 15, c 814.

[xxxvi] Section 21205, *California Vehicle Code*, c 479.

[xxxvii] Again, see for example *Johnson v Milton (Town)*, 2008 ONCA 440 and *Wong v Vancouver (City*), 2001 BCSC 693.

[xxxviii] See *The Highway Traffic Act*, SS 1986, c H-3.1, s 2(1)(hh) and *The Traffic Safety Act*, SS 2004, c T-18.1, s 2(1)(ccc). See also *Jones v Falconer*, (1993) 114 Sask R 121 (SKQB).

[xxxix] Section 183(1), *Motor Vehicle Act*, RSBC 1996, c 318.

[xl] Section 814.420(3), *Oregon Revised Statutes*, vol 15, c 814 (2015).

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VI. Membership Feedback

In order to ensure that this submission reflects the firsthand experiences and occasionally divergent views of our membership, Saskatoon Cycles posted the submission in draft form on our website for several months and asked our members to review the submission and provide comments to us via email. Furthermore, we hosted an open house on February 22, 2017 to discuss the submission with our members and recorded further comments we heard during that open house. Overall, the members who contacted us about this submission were broadly in favour of its recommendations though commenters diverged on certain issues not addressed in this submission, such as whether lights should be mandatory. We have included summaries of the feedback from our members on the recommendations set out in this submission below.

Comments received by email (verbatim)

Comment #1

Hi,

First of all, good work on the draft document. It is as if I wrote it, as I believe that cycling on sidewalks should be allowed in the cases you mention. I am a bit concerned about your embracing Finland's under 12 idea. It isn't any safer for a 13-yr-old than it was for the 12-yr.-old. I embrace Oregon's cycling bylaws which allow for cycling on sidewalks and IF there is an infraction there can be consequences. Until such time, cycling is allowed on sidewalks. The problem, is, of course, the rotten apple cyclist who scares pedestrians, possibly even colliding with same. Someone I know said that she is afraid to walk on the Meewasin because of the dangerous cyclists on the blind curves, etc. She is honestly fearaful of serious injury or worse. I don't know what we can do about these cyclists.

I sincerely hope city council takes your suggestions to heart.

Of course, the next best thing is to have great cycling paths, something that we certainly DO NOT have now. I am constantly confused as to why drivers would not want safe lanes. It would be a win-win solution because cyclists would not be slowing vehicular traffic and it would be safer for those who live to cycle, which is what I do. Cycling in winter certainly presents its own problems. Drivers maybe don't realize that a cyclist really has no place to ride except in the

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path of the vehicle. The edges of the street have ridges narrow enough that a cyclist cannot ride there safely. Or there is the brown snow that is so dangerous. Or there is the ice, equally dangerous. I have had, on a daily basis, drivers speeding beside me as I am on the street. If I happened to swerve an inch I would be nailed by these speed demons. I appreciate so much the drivers who actually slow down and pass with plenty of space. Maybe we need a public education on the dangers of cycling and what motorists could do to make things safer.

In addition, for winter cycling I would suggest that the city make a concerted effort to plough side streets in both directions so cyclists can avoid main drags. For instance, after a snow, I am unable to cycle as I am restricted to main streets on which I will have to cycle IN the driving lane as there is nowhere else to go. If, for instance, 1st Street were cleared so one could avoid Taylor-- and Morgan from Taylor to 1st--then another north south, etc, one could safely go downtown, for instance.

Keep up the good work. I know I should volunteer for something and I will, eventually.

Sincerely,

<name redacted for privacy>

Comment #2

BRAVO!

As a frequent cyclist in the City of Saskatoon I take no strong issue with any of the recommendations, and have no hesitation in supporting the submission as a whole.

My two niggles are nothing more than that — niggles, but I offer them as evidence that I have read and considered the submission in detail.

1) My preference would be for a minimum leeway of 1.5 metres given by any vehicle passing another vehicle (including bicycles as “vehicles” in either instance.

2) Rather than a one-hand-on-the-handlebars rule, might a prohibition against cycling in a “dangerous or reckless manner” give enforcement authorities more discretion to use good sense, while at the same time putting the onus on them to satisfy a court that the behaviour was dangerous or reckless, rather than requiring the cyclist to prove that it wasn’t?

On the whole, an admirable piece of work. Thank you, and good luck in taking this project forward.

<name redacted for privacy>

Comment #3

Saskatoon Cycles:

I have read the suggested Bylaw Reform recommendations as proposed by Saskatoon Cycles and strongly support the comments and alternatives which have been presented. I most strongly support the right to choose the portion of the right-of-way which is deemed safest to the cyclist (be it street lane, bike lane, or sidewalk) based on conditions and environmental specifics.

I will reiterate the benefits of having a minimum passing distance of 1.0 meter for speeds of 60 km/hr or less and 1.5 metres for areas of greater speed limits.

Lastly, the City need only read the SGI manual on proper lane positioning for motorcycles to learn about proper lane positioning. This applies directly to urban cycling due to the need to maintain cyclist visibility and prohibit passing by other vehicles when it is unsafe to do so.

Thank you for your dedication to promoting cycling in Saskatoon and providing guidance to our municipal leaders on this front. As a seasonal resident in Saskatoon and home owner in the Nutana Park area I sincerely appreciate your efforts.

Best Regards,

<name redacted for privacy>, P.Eng.
Civil Engineer and Cycle Infrastructure Designer
Vancouver, BC.

Comment #4

Another suggestion for practicality of bells:

I don't have a bell at present because it was stolen. Thefts of bike and bike parts has risen sharply in the past couple of years. I have not bought a new bell because of where I park my bike – thefts of bike components are common and I feel a new bell would simply be stolen.

Thanks,

<name redacted for privacy>

Comment #5

I love your proposed revisions. Any chance of adding an Idaho Stop clause, or is that just shooting for the moon?

Thanks for your work,

<name redacted for privacy>, P.Eng
Design Engineer

Comment #6

Hi,

I just wanted to say that the reform document is great -- clear, well researched and well written.

The only suggestion I have is to give the section on allowing children to cycle on the sidewalk more prominence. A bylaw that forces young children learning to ride to do so on the street is absurd.

<name redacted for privacy>

Comment #7

These are great, thank you for submitting them. I have one concern/annoyance.

When I cycle the streets, I try not to use the sidewalks, one of the most frustrating things is that some traffic lights are designed to recognize a car and only change when triggered by a car. I

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find I have to go to the sidewalk and activate the walk light which then means I end up cycling on the sidewalk. Is there any way to change this?

Thanks for your work,

<name redacted for privacy>

Comment #8

I would like to extend my appreciation for all of the work that went into this document. Thank you to everyone contributing.

I am a regular commuter and recreational cyclist. The suggested changes in this document are on the whole reasonable and long overdue.

One the topic of keeping to the right I would encourage stronger language that makes the default position a cyclists right to take a lane. In my experience, on most streets with parked cars the combination of 1m distance from the parked car, 1m passing distance and 60-70cm wide handlebars makes it impossible for a vehicle to safely pass without moving into the oncoming lane or left lane.

Rather than a debate on how far to the right a cyclist should be, I would prefer language that tells cyclists that their proper position is in the center of the rightmost lane.

Cheers,

<name redacted for privacy>

Comment #9

A Job Excellently done.

I am a bicycle commuter on city streets. This is well written and researched. I personally would endorse all recommendations made, both from a cyclist and a motorist perspective.

I have not read the city bylaw and so assume it has dealt with bicycle lighting appropriately. I truly hope the city is able to get behind the recommendations and then do a public education campaign.

Thank you all for hard work done on everyone's behalf.

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Sincerely,

<name redacted for privacy>

Comment #10

This bylaw review is very well done and thorough. The research appears to be very deep and comprehensive and the recommendations are excellent.

However, one can anticipate resistance from city staff and councilors whose focus is on motor vehicle convenience as more important than promotion and safety for cycling. There will be objections. It will be important for concerned cyclists to lobby their councilors to give this bylaw review serious consideration. After all, it has been researched and written by experts and could be approved and implemented with little more expense than new signage and road paint.

I recommend another email to members requesting a mass communication effort to lobby councilors for their support. Be sure to include the things that work: a form letter with space for personal comments and addresses for all members of city council.

Congratulations on this terrific bylaw review.

<name redacted for privacy>

Comment #11

Hello,

I fully endorse the recommendations put forth by Saskatoon Cycles to the City of Saskatoon. Let's get past this enforcement item and move on to the real business of building best practice cycling infrastructure in the city. When cycling advocates have to ask for exceptions to using cycling infrastructure because it is unsafe for any reason, we have all failed to make progress.

<name redacted for privacy>

Comment #12

I am in favour of the new bylaws. They are professionally done and well researched. I especially liked the recommendation to think of new laws for bicycles in sidewalks. As a winter cyclist I find myself often choosing sidewalks when road conditions are hazardous. On a number of occasions I have been stopped by police to remind me of the bylaw. Yet they never give me a

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ticket. It feels like the police are not very in favour of policing this issue of winter bikes on Sidewalks.

Keep up the good work,

<name redacted for privacy>

Comment #13

Looks great. Thanks for taking this on. I read the proposal, and for what it's worth I don't see any issues with it.

<name redacted for privacy>

Comment #14

Thanks so much for the work on this draft. This addresses all of my concerns on the current bylaws, where some of the provisions outdated, often confusing, dangerous, or impractical. I helps bring clarity and a sense of practicality and responsibility to cyclists, car drivers, and the city that builds and maintains roadways for all types of transportation.

I am in full support of this draft.

Sincerely,

<name redacted for privacy>

Comment #15

I would submit that we do as portland does—tickets the wild cyclists on sidewalks. The rest are good to go.

Under 12 should not be a stipulation—adults need to be safe as well.

1 meter is not nearly enough—I suggest 2.

Bells are useless—I find that 90% of the people can't hear them.

Keep up the good work. I agree about not having to ride on the dedicated lanes—they are almost always in poor shape.

<name redacted for privacy>

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Comment #16

In the bylaw review bell, practical issue:

You state road and triathlon cyclists have bikes that are as light as possible and don't want to encumber their bikes with a bell. The weight of a bell is negligible with respect to the cyclists and bike. The argument is a red herring and makes the cyclists look petty. The practical problem is a bell does not mount on a road bicycle or triathlon bicycle in a manner that makes it readily accessible when the cyclist is holding the handle bars.

Bikes like BMX and mountain don't need them due to not interacting with pedestrians. The can incredibly easily be shot down. BMX bikes require bells at all times unless inside a BMX/Skate park. Mountain bikes are typically ridden to the trails. And runners can be on the trails.

Suggestion - Cyclists on shared use trails are required to yield to pedestrians. Cyclists shall make reasonable attempts to warn pedestrians prior to passing the pedestrian. Cyclists passing pedestrians with less then 2m clearance shall slow to 15kph. Note this applies around tight corners. Cyclists need to slow before corners they cannot see around.

Another note. The City should put a speed limit by the train bridge East side of the river along the trail.

You mention significant number of dooring - do you have statistics to capture that? (You are talking in vague terms, hard numbers strengthen the argument).

Other problem with the partial share use. Some motorists see the signs on the bridges saying cyclists need to yield to pedestrians and assume it means cyclists are not allowed on the road. Cyclists are allowed on the road on broadway bridge, university bridge,...

Stunting - stunting should be prohibited except for a designated areas (ie BMX/skateboard parks). Skateboards and roller blades and bicycles should be limited if the operator does not have good control of the device the device. (I nearly hit a skateboard somebody lost control of and sent flying in front of me).

Loads. I like Oregon's rule. It requires full control of the bike. I would like it to say the cyclists should have 2 hands on the handle bars at most times.

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Dismount to pass a pedestrian. What if the pedestrian is a runner and the cyclists is wearing cycling shoes with cleats. The cyclist will not be able to walk faster than the pedestrian. The rule is not thought out at all.

<name redacted for privacy>

Comment #17

Congratulations to Saskatoon Cycles re the recommendations to revise local cycling bylaws. The SC response is professional and impressively thorough and provides solutions that are reasonable and easy to implement. Well done. Hopefully the City of Saskatoon sees it this way too.

Wouldn't it be nice if all motorists and cyclists and pedestrians were more tolerant of each other?

<name redacted for privacy> (road biker and 12 month/yr commuter cyclist)

PS

In my experience the city does a great job of keeping the bike/pedestrian paths snow free, particularly the one I regularly use along 14th Street. They deserve recognition for this.

Comment #18

Dear Sir/Madam:

A. Agree that requirement for mandatory bell/horn should be removed.

B. Position on street: I like the quoted Ohio traffic law statement. The one-metre minimum passing requirement should be made mandatory and punishable (preferably in Provincial Law), which in effect would make it impossible for a vehicle to pass a bicycle within the lane (regardless of where the bike is positioned)! I often prefer to 'take the lane', especially the right lane on a multi-lane street and the left lane when turning left, and hope to expressly retain that right. I would also like to see it expressly permissible to ride two abreast within a lane. Good cycling manners suggest that undue blocking of other traffic is uncool. On the highway, self-preservation suggests riding as far right as practicable.

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C. Where to ride should essentially be a speed issue. Riding slower than 5 km/hr should always be permissible on the sidewalk, while riding 5-25 km/hr could be on the bike lanes, and over 25 km/hr should be on the street. Since sidewalks must be safe for pedestrians and bikes can cause injury, cyclists must exercise caution on the sidewalk and shared paths. Riding on an empty sidewalk should always be permissible (while keeping in mind that people can suddenly appear from adjacent doorways and cross streets).

D. Stunting is an excellent way of improving one's cycling skills both on and off the street -- but not in traffic of course.

E. Unlimited passengers and freight should be allowed on any bike, keeping in mind that the RIDER (bike operator) is at all times RESPONSIBLE for the condition and performance of the bike, for the safety of the cargo (human and otherwise) and for innocent bystanders. Do also note that in The Netherlands several people ride casually on a bike with or without special seats (See 'Utrecht summer cycling 2014' on YouTube: https://www.youtube.com/watch?v=B3smPA17D8M), and in San Francisco The Companion Bike Seat Company makes bike seats for adult passengers (http://www.thebikeseat.com), which thus accommodate two adults on a bike (http://www.thebikeseat.com/contact.html), so the practise might be legal there.

F. Loads. See above

G. Since cycles are classified as vehicles in law, they should always have the legal right to be on the street. See also my comments in 'C': Riding faster than 25-30 km/hr on a bike lane is unsafe for everyone, so these riders should ALWAYS be on the street. Slower riders should be encouraged to ride on the bike lanes for their own safety.

Perhaps the new Bicycle Bylaw should be very simple by containing very few mandatory rules and instead provide some guidance regarding desired outcomes and perhaps some suggestions and caution regarding behaviour.

Sincerely,

<name redacted for privacy>

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Summary of comments noted during open house

Recommendation #1 (remove requirement for use of bell or horn)

- Concern expressed over theft of bells
- Passing slowly and with deference to pedestrians is more important
- Concern expressed over blind corners along Meewasin Trail
- It is enough that one must yield to pedestrians
- Concern expressed over design issues on Meewasin Trail and Train Bridge
- Use of bell should be an option
- A person's voice is less startling than a bell
- Education on bicycle courteousness is more appropriate
- Start education early; in Winnipeg they learn about cycling in Grade 4
- There is a double standard here and bicycles are not treated as equals on the roadway; you would not ask cars to honk whenever passing

Recommendation #2 (remove requirement to stay right)

- People on bikes have the legal right to bike down the centre of the lane
- People on bikes often need to "own the lane" or "take the lane" to ensure safety
- The *Highway Traffic Act* allows for people on bikes to be treated like any other road user
- People on bikes should be treated the same as any other slow moving vehicle

Recommendation #3 (implement mandatory passing distance)

- City buses are the worst for this
- A minimum passing distance indicates respect for people's right to bike on the road

Recommendation #4 (remove blanket prohibition against sidewalk cycling)

- There should be no riding on sidewalks even for children
- This is confusing on 14th and the ramp onto College Drive
- In many places the signage about shared use sidewalks is too high to be seen
- Concern expressed over sidewalks with driveways
- It is absurd to expect people to walk their bikes

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Recommendation #5 (remove prohibition against stunting)

- Should simply specify no stunting when on the roadway
- Should more generally state that a bicycle must be operated in a safe fashion
- Concern expressed over inconsistent application of restrictions on stunting

Recommendation #7 (remove load restriction)

- Concern expressed that load restrictions would have differential impact on economically marginalized people who rely on bikes for activities such as collecting recyclables for refund

Recommendation #8 (remove requirement to use cycling lanes)

- The safety issue needs to be clarified as the city needs to keep these in safe condition
- The city needs to design and maintain lanes that people want to use rather than trying to force people into lanes they do not feel comfortable or safe in

Other miscellaneous comments

- The city should turn its mind to how the Bicycle Bylaw might interact with electric bikes and should leave options available for future technology changes
- The city should consider making "Idaho stops" legal as drivers in Saskatoon often expect people on bikes to do an Idaho stop rather than a full stop at a stop sign anyway
- The rule allowing for people to ride two abreast should be clarified as the language is currently confusing
- Lights should be part of education rather than made mandatory
- At night both a headlight and a rear light should be mandatory, rather than just a rear reflector
- An overall approach of "education and not legislation" should be adopted

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WALKING SASKATOON (WS)

WALKING SASKATOON

Submission to the City of Saskatoon regarding Bylaw No. 6884, "The Bicycle Bylaw"

May, 2018

About Walking Saskatoon

Walking Saskatoon was formed in 2016 to advocate on behalf of pedestrians on issues that affect their safety and enjoyment in walking the neighbourhoods of Saskatoon. Through meetings and social media[1], the group provides a forum for expressing concerns, sharing information, identifying relevant research, and proposing ideas that would enhance the walking experience. On the basis of these activities, Walking Saskatoon has also undertaken to represent the interests of pedestrians at events and on committees related to city planning, regulation and development, advocating on behalf of all pedestrians walking for a wide variety of purposes in all parts of the city. Currently Walking Saskatoon is in the process of incorporating as a non-profit organization.

The Need for a Bicycle Bylaw Update

There are now more cars in Saskatoon than there are people[2], and the number of people using bicycles and other wheeled conveyances is also growing. Since much of our transportation infrastructure was not designed for these numbers, one unintended consequence of Saskatoon's growth is the potential erosion of the comfort and safety of pedestrians. In the view of Walking Saskatoon, people of all ages and abilities should be able to feel secure as they walk along the streets of our city. Yet not only do pedestrians face increasing risks as they interact with car and bicycle traffic in crossing roadways, they now spend more time walking on designated shared pathways that may lack the optimal size, design and conditions to accommodate a large volume of cyclists and pedestrians. One need only look at the current unhealthy trend towards limiting the independent mobility of children[3] to suspect that today's walking conditions are sometimes a deterrent to active transportation for many Saskatoon citizens, particularly those who are very young[4], very old, disabled or frail[5].

It is hard for Walking Saskatoon to quarrel with any measure that improves the safety of cyclists, who are undoubtedly at grave risk of collision with cars when riding on roadways. Nevertheless, we must point out that reliance on shared pathways puts pedestrians at greater risk of collision with cyclists, and perhaps just as important, has been known to create frustration and conflict between the two groups.[6] In worst case scenarios, shared pathways have created pedestrian-cyclist conflict to the extent that they are less effective in encouraging active transportation.[7]

Ideally, the City of Saskatoon will work towards the provision of complete streets that will appropriately separate car traffic, cyclists and pedestrians[8]. Each mode of transportation has its own needs, and given the differences between cars, cyclists and pedestrians in terms of speed and range, they are generally safest and happiest when using spaces that are designed specifically for them[9]. However, we do not live in an ideal world, and Walking Saskatoon recognizes that today's shared pathways are a reality that is likely to dominate walking in Saskatoon for the foreseeable future.

If pedestrians and cyclists are to continue sharing spaces that are sometimes less than ideal, and if the volume of pedestrian and cycle traffic continues to grow, it is vital that adequate regulations, policies and educational programs be in place to guide the behaviour of those using shared pathways[10]. An update to Bylaw 6884 is clearly needed to lay out the rights and responsibilities of cyclists with respect to pedestrians. Moreover, the update must be followed by an educational initiative that ensures pedestrians and cyclists have the same knowledge and expectations from which to operate.

Provisions of Concern in Bylaw 6884

1. **Passengers and Loads**

   Section 11 on Passengers and Section 12 on Loads are primarily concerned with ensuring that cycles are properly designed and equipped to operate safely under full control of the cyclist. The wide range of cycles now available offers many cycles that are able to convey passengers and loads safely even though they exceed the weight, width and other limitations imposed by Sections 11 and 12. It is reasonable, therefore, to relax the limitations and allow the use of new cycles designed to carry passengers and loads.

   Having said that, however, it should be pointed out that one factor determining the potential for collisions between cyclists and pedestrians on shared pathways is the size of the path. Some converted sidewalks and foot paths are not ideal for shared use, providing little room for cyclists to pass or overtake other cyclists or pedestrians. Especially in Saskatoon, where pathways may be at least partially covered with snow, ice, water or sand, depending on the season, it can be difficult for pedestrians to make way for a large bicycle even when given due warning that they are about to be passed or overtaken. Being passed too close for comfort is a problem for pedestrians[11]. When larger cycles carrying cargo or passengers appear on the pathways in greater numbers, this problem may be exacerbated. Cyclists riding such large cycles may be able to choose their routes to avoid narrow pathways, but if not, they may need to negotiate with pedestrians in order to get around them without creating discomfort, even dismounting in some circumstances.

2. **Parks**

   Section 2 of Bylaw 6884 does not provide a definition of a “shared pathway” or “multi-use pathway.” It is left to Sections 14-19 on Parks, where these pathways are in use, to indicate how bicycles are expected to operate on shared pathways. Not all shared pathways are in parks, however, and there is a need for both cyclists and pedestrians to be

clear about expected behaviours at all times. An argument can therefore be made that the provisions regulating cyclist behaviour under Parks should be more explicitly applied to all pathways that have been designated with signs as "shared" or "multi-use."

Although the park pathways and designated shared pathways are understood to be shared by cyclists and pedestrians, it is necessary to specify, as in Section 16, that cyclists shall yield to pedestrians. A cyclist moving at speed and colliding with a pedestrian can inflict injuries similar to those created in car-cyclist collisions[12]. The onus must always be on cyclists to be aware of the danger they represent and moderate their speed to safe levels, not only when passing or overtaking other cyclists or pedestrians, but as a general rule.

It needs to be remembered that pedestrians include people of all ages and abilities, and they are often using pathways for recreational purposes. It should not surprise cyclists when they find groups of pedestrians on the pathway, e.g., an extended family on a walk or a day care group on an excursion. They may also encounter children playing or dogs whose behaviour is unpredictable; and they will frequently be passing people who are elderly, deaf, or have mobility problems. In addition, some encounters with pedestrians will inevitably occur on blind corners, intersections and driveways. If cyclists neglect to give pedestrians due consideration by riding shared pathways at appropriately moderate speeds, the potential for falls and collisions due to unforeseen circumstances increases markedly. Commuter or sports cycling, which can involve speeds of 25-50 km per hour[13], is not appropriate on shared pathways used for recreation by pedestrians.

It may be time to go beyond the admonition to use "due care and attention" in Section 15 and the prohibition of an "immoderate rate of speed" in Section 19. Some researchers believe that cycling speeds on shared pathways should be no more than 10 km per hour to ensure pedestrian safety[14]. Efforts to set speed limits for cyclists are generally unenforceable, however, since there is no adequate way of measuring the speed of cycles, cycles are not equipped with speed indicators, the speed tolerance for shared pathways varies according to place and time of day, and cyclists tend to ignore signs posting speed limits anyway[15]. As a result, Walking Saskatoon does not recommend cycling speed limits in Saskatoon. Nevertheless, it does ask that the updated bylaw clearly communicate that pedestrians have priority on shared pathways so that the cycling community understands its responsibility to self-regulate cycling speeds to reflect that priority.

3. Use of horn or bell

Section 6 of Bylaw 6884 states that bicycles should be equipped with a horn or bell capable of emitting a sound for at least 35 metres. This section recognizes the inherent danger of collision when cyclists on a shared pathway pass or overtake pedestrians

without warning. The danger increases on blind corners and is greater if the cyclist is moving at higher speeds. In all situations, it is the responsibility of the cyclist to warn pedestrians a reasonable amount of time before passing or overtaking and to wait until the way is clear. What is a reasonable amount of time may differ according to the circumstances. Moreover, cyclists need to keep in mind that even an audible warning may not always suffice since pedestrians include people who are hard of hearing, particularly when there is a lot of background noise from traffic, crowds or the weather.

Ultimately, the way that a warning is given is less important than the obligation of cyclists to negotiate shared pathways in a way that ensures pedestrians are not startled, intimidated or harmed. Either the "yell" or the "bell" will work in giving an audible warning. Nevertheless, there may be merit in choosing a standardized sound that is immediately recognizable as a warning signal and promoting its use by all but a few cyclists who may be exempted, e.g., road or triathlon cyclists.

4. Sidewalks

Section 8 of Bylaw 6884 requires cyclists to use the roadway and thus prohibits cycling on sidewalks. We recognize that in Saskatoon, weather, water main breaks, road construction, accidents, and a multitude of other circumstances can render a road, bike lane or sidewalk hazardous or impassable at short notice. Under adverse circumstances that render the roadway or bike lane unsafe, it is reasonable for cyclists to ride on the sidewalk provided they proceed at pedestrian-friendly speed and give way to pedestrians.

Cyclists are most likely to ride on sidewalks when road cycling is poor[16], perhaps due to winter conditions or the close proximity of cars. The emphasis therefore needs to be on making the roadways safe and comfortable for cyclists rather than divert those who are uncomfortable onto the sidewalks.

It is never appropriate for cyclists to use the sidewalk as an alternate route to the roadway or bike lane in order to maintain the highest possible speed or beat the traffic. Cyclists who abruptly leave the curb to ride on the road or bike lane, who move quickly onto sidewalks to take advantage of pedestrian walk lights, or who speed past driveways and building exits that are not designed for anyone moving past them that fast are engaging in dangerous behaviour. Such cyclists need to understand the multi-purpose nature of sidewalks and the multitude of unpredictable, potentially hazardous events that can occur there for anyone moving faster than pedestrian speed.

There is currently a problem for both pedestrians and cyclists in understanding where some sidewalks become a shared pathway and then stop being shared. Appropriate signage may help to alleviate that problem.

Each year about 50,000 children in Canada are injured in bike-related injuries, and children aged 5-14 account for about half of deaths from cycling injuries[17]. It is known that the brains of children under 14 are not yet capable of allowing them to operate bicycles in the complex environment provided by roadways and bike lanes[18]. At the same time, it is important to habituate children as early as possible to the advantages of active transportation, which include better health and closer connections within families and communities[19]. To encourage children to walk and cycle, an exception should be made to the prohibition against cycling on sidewalks to allow children under the age of 14 to ride on them while learning how to operate a bicycle safely. Special consideration should also be given to the needs of adult cyclists who supervise child cyclists while they are learning.

5. Bridges

Sections 20 and 21 allow cyclists to use the sidewalk portion of bridges, treating them much like shared pathways although cyclists are required to dismount and walk their cycles past pedestrians whom they are overtaking. This permission for cyclists to use bridge sidewalks reflects the importance of these routes crossing the river, which are used frequently by cars, buses, cyclists and pedestrians.

Unfortunately, not all of Saskatoon's bridges have sidewalks that were designed as shared pathways. The sidewalks on the University, Broadway and Sid Buckwold bridges are on the narrow side, and in seasons of the year when snow, ice, rain water or gravel accumulate on the sidewalks, they are narrowed even more. At times it is just barely possible for a cyclist to ride past a pedestrian, and many pedestrians would be uncomfortable with the closeness of the encounter. Some feel obliged to stop walking and move up against the bridge railing until the cyclist has gone by. Moreover, it should be noted that traffic can be heavy and steady on these bridge sidewalks, necessitating frequent meetings between pedestrians and cyclists.

Cyclists see no problem in taking charge of a lane on the roadway and expecting cars to follow them until it is safe to overtake them. In the same way, it is not unreasonable for pedestrians to expect cyclists on sidewalks to dismount and negotiate a way around them that is not too close for their comfort and safety. Although experience has shown that making it mandatory for cyclists to dismount tends to be another unenforceable regulation that cyclists often ignore[20], there may still be merit in reinforcing in bylaw the responsibility of cyclists to dismount rather than risk intimidating pedestrians by passing too close.

Recommendations from Walking Saskatoon

1. The heading for Sections 14-19 should be changed to indicate that these provisions apply to shared pathways as well as parks.

2. On shared pathways a cyclist shall either dismount to cross intersections on pedestrian crosswalks or approach and ride across them at pedestrian speed.

3. Any cyclist on a shared pathway shall alert anyone about to be overtaken with an audible warning a reasonable amount of time before overtaking, and any cyclist approaching a blind corner on a shared pathway shall alert anyone around the corner with an audible warning a reasonable amount of time before turning the corner.

4. A person shall not ride a bicycle on a sidewalk except where:

    a. The sidewalk has been designated by signs as a shared pathway;

    b. The roadway or bike lane that the cyclist is expected to ride has become unsafe and the cyclist is proceeding at pedestrian speed; or

    c. The cyclist is a child under the age of 14.

5. When passing or overtaking pedestrians on sidewalks or shared pathways, including those on bridges, cyclists who might startle or intimidate the pedestrians due to large loads or narrow passing room, shall dismount and negotiate a safe way around the pedestrians.

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SASKATOON AND DISTRICT SAFETY COUNCIL (SDSC)

THE Saskatoon and District Safety Council has undertaken to review the Project Report Draft Bicycle Bylaw Components & Discussion from our point of view as expressed earlier "Saskatoon and District Safety Council Stressed need for conformity with TSA".
We thank the author for an in depth look at the present status and as well as presenting ideas for updating the bylaws related to bicycles in Saskatoon.

Again, we stress the point of view of our
STAKEHOLDER ENGAGEMENT
Saskatoon and District Safety Council Stressed need for conformity with TSA

DEFINITIONS
Problem areas:
1) "Bicycle" means any muscular propelled, chain-driven wheeled device in, on, or by which a person is or may be transported or drawn.
a) By definition bicycle means" two" and we have three wheels on pedaled vehicles used by many seniors.
b)There are belt driven bicycles as well as chain driven.

OPERATION
12) must give a signal by hand and arm prior to turning in the following manner: a) when making a left-hand turn, by extending the left arm horizontally. b) when making a right-hand turn, by extending the left arm bent vertically upwards, **or by extending the right arm horizontally**
Using the right arm contravenes the Traffic Safety Act Section 234(2)(b**) to turn right, to turn out to the right from a stationary position at the side of the highway or to drive to the right from one traffic lane to another, by extending the driver's left arm from the shoulder to the elbow horizontally and from the elbow to the hand vertically upwards;**

2004, c.T-18.1, s.234

BRIDGES

In traversing any bridge or river crossing, a person operating a bicycle may: 1) use that portion of the bridge or river crossing as is intended for the passage of motor vehicles; or, 2) use the sidewalk portion of any bridge or river crossing as a Shared-Use Path.

I am very concerned about the plan to allow bicycles to use the regular traffic lanes on all of the city bridges with the exception of the ones on Schedule A. If they go ahead with this, I can see at the least significant traffic problems on those bridges and at worst, injuries or deaths of cyclists in heavy traffic.

Nowhere do I see anything about obstruction of traffic where a cyclist decides to use a traffic lane instead of a bicycle lane or shared pathway.

Submitted by (name withheld for privacy reasons).

6 CYCLE TRACKS

A person using a Motorized Mobility Aid (MMA) may use a cycle track if the rules of the road and this bylaw are followed.

As a Motorized Mobility Aids are considered extensions of the pedestrian, they are to travel on the left of the highway facing traffic and as such they would be in contravention of the TSA if they are travelling on the right. As many of these MMA are difficult to control when they are using the sidewalk and come to an alley which is sloped toward the street, the riders prefer travelling on the street facing traffic.

Section 228(1) of the provincial Traffic Safety Act addresses the rules of the road regarding traffic lanes: Page 26 Draft Bylaw states:

Motorists do, however, overtake people cycling while in the same lane. The TSA stipulates that cyclists ride as "close as is reasonably practicable to the right hand curb" so as to allow people driving to pass.

After checking The Traffic Safety Act we were unable to find the above quote. A request was made to the author of the Draft Bylaw to clarify from where in the Traffic Safety Act the quote was taken. At this time no response has been received.

Unfortunately as no response has been received answering our request, we can only assume that the author has not had time to reply. It would be difficult to believe that the quote is not true.

7 MOTORIST OVERTAKING A PERSON RIDING A BICYCLE

Every person in charge of a motor vehicle who is overtaking a person travelling on a bicycle on a street with one traffic lane in the direction of travel, shall, as nearly as may be practicable, leave a distance of not less than one meter between the bicycle and the motor vehicle and shall maintain that distance until safely past the bicycle. The one-meter distance required refers to the distance between the extreme right side of the motor vehicle and the extreme left side of the bicycle, including all projections and attachments.

As a bicycle is a vehicle(non-motorized), it is entitled to use the highway, there fore, the driver is entitled to the lane in which it is travelling. To place a one - metre minimum distance from the bicycle is much too small. Being passed by a transit bus or semi- trailer at 60 kph ***with only 1 metre of space is not safe.***

SIDE-BY-SIDE COMPARISON: NEW & CURRENT

12) must give a signal by hand and arm prior to turning in the following manner: a) when making a left-hand turn, by extending the left arm horizontally. b) when making a right-hand turn, by extending the left arm bent vertically upwards, or by **extending the right arm horizontally.**
Already mentioned as contravening Traffic Safety Act.;

Power-assisted Bicycle

247(1) No person shall drive a power-assisted bicycle on a highway unless: (a) that person is 14 years of age or older; (b) that person and any passenger are wearing, in the prescribed manner, a helmet that meets the prescribed specifications; and (c) the power-assisted bicycle meets the prescribed equipment and safety standards required for the operation of that power-assisted bicycle.

HELMETS

11 HELMETS Proposed Bylaw: • None, but the City will continue to recommend helmet use by all cyclists and passengers and encourage provincial legislation for cyclists under 18 years of age.

Although the Saskatoon and District Safety Council made no mention of Helmet use in our Stakeholder Engagement, we must emphasize that from a point of SAFETY the use of helmets for all cyclists should be mandatory**. As stated by many of the other Stakeholders, Saskatoon could be a shining light in making helmet use mandatory.**
Section 247 of the provincial Traffic Safety Act addresses the rules regarding power assisted bicycles: 247(1) No person shall drive a power-assisted bicycle on a highway unless: (a) that person is 14 years of age or older**; (b) that person and any passenger are wearing, in the prescribed manner, a helmet that meets the prescribed specifications**; and (c) the power-assisted bicycle meets the prescribed equipment and safety standards required for the operation of that power-assisted bicycle.
As helmets are necessary for power assisted bicycles (see above) then it seems obvious that all cyclists should wear a helmet. The members of the bicycle patrol of the Saskatoon Police Service wear helmets for their own protection.

The above information has been submitted
by members of the Saskatoon and District Safety Council
and compiled by:

Al Reichert
Traffic Committee Chair
Saskatoon and District Safety Council
September 18, 2019