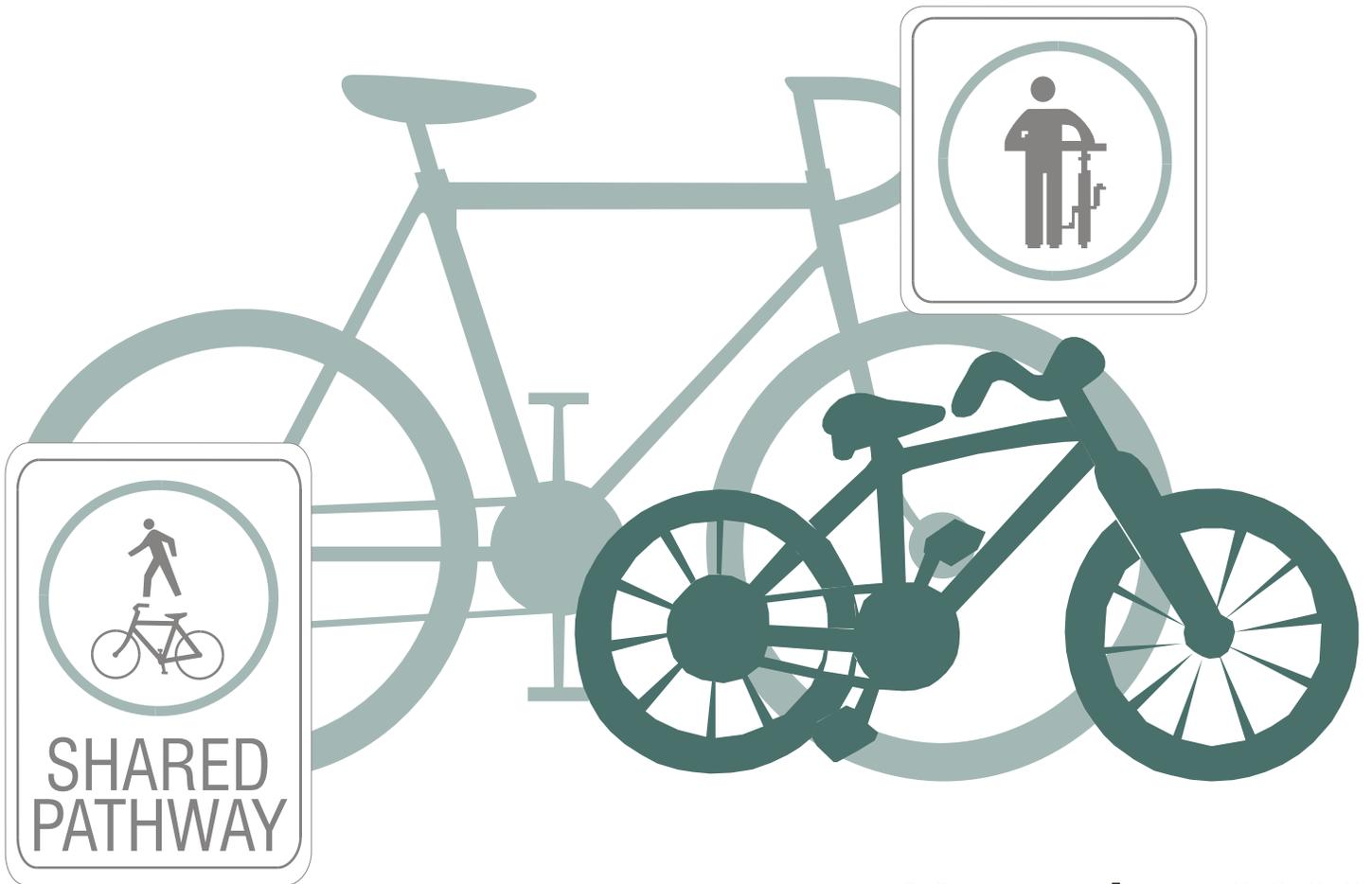


# COMPREHENSIVE BICYCLE PLAN



**November 2002**



*City of*  
**Saskatoon**

Infrastructure Services Department

# Table of Contents

1. Introduction .....	1
The Importance of Cycling as a Transportation Choice .....	1
City Vision.....	1
ITPS Vision .....	1
ITPS Cycling Policies.....	2
The City of Saskatoon Business Plan 2002 - 2004 .....	2
Plan Saskatoon.....	2
Cycling’s Benefits.....	3
Economical & Practical .....	3
Increased Travel Choice .....	3
Uses Civic Resources Efficiently.....	3
Healthy Lifestyle Promotion.....	3
Environmentally Friendly .....	4
2. Guiding Principles.....	5
3. Plan Overview .....	6
Goal 1:    Provide Adequate Facilities for Cyclists.....	6
Goal 2:    Enact Legislation Appropriate for Cycling .....	7
Goal 3:    Establish an Education Program .....	7
4. Facilities for Cyclists.....	8
Streets and Paths.....	8
Bicycle Facility Types .....	9
Shared Streets .....	9
Bike Lanes .....	9
Shared Use Paths .....	11
Bike Parking.....	12
Goal 1a:    Adopt a Standard for Cycling Facilities.....	12
Goal 1b:    Evaluate Opportunities and Constraints to Cycling .....	12
Goal 1c:    Develop a Cycling Network.....	13
5. Legislation for Cycling.....	16
Highway Traffic Act.....	16
City of Saskatoon Bylaws.....	16
6. An Education Program for Cycling.....	18
7. Recommendations .....	21
Vision .....	21
Guiding Principles .....	21
Goal 1:    Provide Adequate Facilities for Cyclists.....	21
Goal 2:    Enact Legislation Appropriate for Cycling .....	22
Goal 3:    Establish an Education Program .....	22

# 1. Introduction

There is growing support for Saskatoon to be a place where cycling is encouraged as a reasonable and practical method of travel. This plan has been prepared in response to this general desire. It will guide the city in the development of facilities for cycling and the implementation of programs to support and encourage people to cycle for transportation and recreation. It is a flexible plan designed to allow for the evolution of programs over time.

This plan establishes a vision for cycling. It sets out guiding principles and specific goals to prioritize project and program initiatives.

## ***The Importance of Cycling as a Transportation Choice***

Once predominantly a recreational activity, cycling has evolved into a significant mode of transportation. Trends throughout North America point toward increased bicycle ownership and use. Cycling is recognized as a legitimate and desirable form of transportation. The Province of Saskatchewan defines bicycles as vehicles in the *Highway Traffic Act* and, as such, cyclists have the same rights and responsibilities as all other vehicles on the roadway.

The City of Saskatoon has articulated in its Strategic Plan a vision for the city and the encouragement of cycling is consistent with that vision.

### City Vision

Our vision for Saskatoon, building on our heritage, includes an enhanced quality of life, sustainable economic vitality, responsible environmental management, continued river valley stewardship, a strengthened quilt of neighbourhoods, a process for managed growth and regionalization opportunities.

Further, the Department's Integrated Transportation Policy Study (ITPS) identified a vision and set of policies, which encourages cycling.

### ITPS Vision

To be recognized as having motivated, consumer-oriented and empowered employees that have turned the vision of a sustainable and affordable transportation system into reality, fostering a quality of life that will have made Saskatoon a desired place to live, to learn and to do business.

## ITPS Cycling Policies

1. Prepare and maintain a comprehensive bicycle plan, which promotes the use of cycling as an alternative mode of transportation, and recognizes the seasonal variation in use.
2. Establish and enhance cycling routes to the downtown.
3. Design roadway systems to be safe for cyclists.
4. Develop a public information campaign to promote cycling and indicate the need for automobile drivers to “share the road”.
5. Design new urban development projects and areas to encourage cycling...

The development of a cycling plan is supported by many other visionary documents including:

## The City of Saskatoon Business Plan 2002 - 2004

As part of the strategy pursuing Environmental Commitment, it was identified that the completion of the bicycle study would support the City’s commitment to pursue innovative conservation management programs.

## Plan Saskatoon

**City of Saskatoon Development Plan** articulated specific objectives and policies for cycling as follows:

**Objective:** To facilitate cycling as an integral form of transportation within a balanced transportation system.

**Policies:**

1. The City shall prepare and implement a Comprehensive Bicycle Plan, which recognizes the importance of cycling as a form of transportation as well as recreation.
2. The City shall promote design initiatives for safe and convenient cycling. These include: convenient and well designed routes, traffic calming features, road/pathway maintenance, proper lighting, security features, convenient bike parking facilities, landscaping, and proper separation from vehicles on busy roads.
3. In recognition of cycling as growing transportation alternative, the Zones Bylaw shall contain appropriate standards for bicycle parking facilities.

This general transportation vision is consistent with one developed by the Transportation Association of Canada (TAC) in 1993. It is based on the fundamental premise that current trends are leading to urban transportation systems which do not meet all needs and which are not sustainable.<sup>1</sup>

---

<sup>1</sup> Transportation Association of Canada, *A New Vision for Urban Transportation*, Ottawa: reprinted November 1999.

## ***Cycling's Benefits***

Cycling, as a mode of transportation, should be encouraged and included with other citywide initiatives for sustainable development. Transportation cycling is a growing choice in Saskatoon and throughout North America, due in part to the many benefits cycling offers. Cycling attracts users of all age groups and income levels for many of the following reasons:

### **Economical & Practical**

- Cycling is often the fastest mode of transportation for door-to-door distances up to ten kilometres in urban cores.<sup>2</sup>
- Riding a bicycle instead of driving a car on short trips can save approximately 20 cents per kilometre in vehicle operating costs, resulting in hundreds of dollars saved per person annually.

### **Increased Travel Choice**

- Cycling provides accessible transportation to segments of the population who would not otherwise be able to travel independently. These segments include; those who cannot or choose not to own a motor vehicle; those who do not have access to a motor vehicle for the required period; and/or those who cannot or choose not to use public transportation.

### **Uses Civic Resources Efficiently**

- Bicycle use, generally, can be accommodated on existing roadway infrastructure without modification or negatively impacting motor vehicle operating characteristics.
- Ten bicycles can be parked in the space required for a single automobile.
- Although bicycle use alone may not eliminate the need to expand existing roadways, it may extend the serviceable life of existing infrastructure and postpone the need for expensive infrastructure expansion.

### **Healthy Lifestyle Promotion**

- Cycling contributes to personal health by increasing fitness and providing an enjoyable, convenient and affordable means of exercise and recreation. The most effective fitness routines are moderated in intensity, individualized and incorporated into our daily activities. Cycling and walking can both accomplish this, and at the same time provide mobility.
- About two-thirds of Canadians are physically inactive, resulting in about \$2.1 billion of direct health care costs in Canada annually. Increased physical activity, such as walking and cycling, can reduce the risk of coronary heart disease and the cost of medical care, decrease workplace absenteeism, and maintain the independence of older adults.<sup>3</sup>
- Cycling benefits one's health regardless of the age at which one takes up cycling.

---

<sup>2</sup> U.S. National Bicycle and Walking Study, 1994.

<sup>3</sup> Canadian Medical Association Journal, November 28, 2000.

## Environmentally Friendly

- Transportation by bicycle is the most energy efficient mode of transportation, and it generates no pollution, except in its manufacture.
- Short distance motor-vehicle trips are the least fuel-efficient and generate the most pollution per kilometre. These trips also have the greatest potential for being replaced by cycling and walking.
- Reducing auto trips will mitigate ozone depletion, the greenhouse effect, ground-level air pollution, photochemical smog, acid rain and noise pollution.

## **2. Guiding Principles**

It is envisioned that the City of Saskatoon be “**a place where cycling is encouraged as a reasonable and practical method of travel.**” This is consistent with other City of Saskatoon policy documents including the City’s Strategic Plan, the Integrated Transportation Policy and the Development Plan, which recognize the public’s desire for a variety of available travel options and supports sustainable urban transportation initiatives.

Bicyclists legally have the same rights and responsibilities as motorists as defined by *The Highway Traffic Act* of the Province of Saskatchewan, and can ride on all public roads with few exceptions. Bicyclists want to go to the same places motorists want to go; therefore, cyclists will ride on every street to some extent. Bicyclists should have access to and be expected on all streets. This is the model of bicycle use used throughout the world, and therefore, this concept has been identified as a fundamental guiding principle for the City of Saskatoon:

**Every street is a cycling street.**

Bicycle use has been identified as having many benefits to the user and to urban society in general. Cyclists receive the direct benefits that regular physical activity brings in terms of improved health and fitness, and indirectly in terms of lower health care costs. Beyond those direct benefits, all residents benefit from the reduction in motorized trips, which result in less traffic congestion and traffic related stress. As well, there is a growing body of evidence about neighbourhood liveability that has identified cycling as one of several activities that helps to put and keep people in touch with their neighbours, their neighbourhood and their City. Therefore a guiding principle has been identified that:

**Every bicycle trip improves the quality of life for all.**

Many people perceive cycling in the city as a high-risk activity. The fear of injury keeps many people from cycling and keeps cyclists from riding as often as they might otherwise choose. Encouraging more cycling depends largely on cyclists feeling safe on the street. We all have our own sense of personal safety and comfort. The perceived level of safety will be different for each cyclist even if the environment is the same. However, it is a reasonable expectation that prudent users can undertake legitimate activities in a safe manner. Therefore, a guiding principle has been identified that:

**Bicycles can be used safely and without fear of injury.**

These three guiding principles provide the foundation to support all aspects of cycling in Saskatoon and have been used throughout the development of this document.

### **3. Plan Overview**

Keeping in mind the three guiding principles, this plan focuses on three main areas where the City of Saskatoon has a role in the accommodation and promotion of cycling. Cyclists need a place to ride their bicycles and to secure them at their destinations, just as pedestrians need places to walk and motorists need places to drive and park. It is the appropriate role of the City of Saskatoon to provide facilities such as streets, paths and parking on City controlled land and right of way, and to influence or mandate private property owners to do so, if necessary. The use of public facilities needs to be regulated by legislation and/or bylaw to ensure orderly and safe use. As well, the users of these facilities (motorists, cyclists, pedestrians) need and expect to be informed about their proper use.

It therefore follows that in order to create a city where cycling is a reasonable and practical method of travel:

- 1) That facilities be provided to address the needs of cyclists.
- 2) That a legal framework be created for governing bicycle use.
- 3) That cyclists and motorists be informed of their rights and responsibilities, and be required to adhere to traffic regulations and the safe operation of their vehicles.

The following three goals elaborate on the above statements, and outline the approach that Infrastructure Services intends to take regarding the accommodation and promotion of cycling.

#### ***Goal 1: Provide Adequate Facilities for Cyclists***

In the most basic terms, cyclists need a place to ride their bicycles and to secure them at their destinations. Fortunately, the City of Saskatoon has an extensive street network with relatively light traffic volumes and a well-developed network of pathways in parks and other public lands. As a result, Canada Census data illustrates a significantly higher number of commuter cyclists than our prairie city counterparts. In fact, the current per capita participation in commuter cycling in Saskatoon is nearly double the Canadian average and that of Regina, Calgary and Edmonton. That is not to say that all streets are comfortable and safe places for all cyclists. The provision of adequate places to cycle requires determining the type of cyclist expected to be present and providing a facility that meets their needs. It also requires identifying physical barriers (such as the South Saskatchewan River) and psychological barriers (such as high speed traffic) and designing facilities to overcome these obstacles.

Beyond places to ride bicycles, there is a need to provide ancillary facilities for cyclists, such as secure parking places. These parking places may be in public places such as streets or parks, but may also be on private property such as shopping centres or employment centres. Other examples of facilities that can be used to overcome barriers

to cycling or to encourage a higher number of bicycle trips include change rooms and/or showers available at employment centres.

The provision of facilities also depends on the development of standards for their design, construction, operation and maintenance. The Transportation Association of Canada has published nationally accepted standards and guidelines for bicycle facilities, and it is proposed that those documents guide the development of cycling facilities in Saskatoon.

A Bicycle Facility Network Plan is under development to provide a framework for bicycle travel for all levels of adult cyclists and child cyclists accompanied by adults. This network does not imply that bicyclists should only use roads designated as bike routes or with bicycle lanes. The bicycle network is a framework that will allow resources to be focused and to prioritize implementation efforts where they will provide the greatest community benefit. The bicycle network aims to provide access between every neighbourhood with three major cycling destinations: the central business district, the University of Saskatchewan Campus/Innovation Place, and SIAST Kelsey Campus.

### **Goal 2: *Enact Legislation Appropriate for Cycling***

Cycling is currently governed under the Saskatchewan *Highway Traffic Act*, City of Saskatoon Bylaw No. 7200 - The Traffic Bylaw and Bylaw No. 6884 - The Bicycle Bylaw. This legislation needs to reflect the development of the cycling network and efforts to promote cycling use. The legislation should govern the overall use of bicycles and operation of cycling facilities in an understandable, enforceable and reasonable manner. The Bicycle Bylaw has been identified as requiring extensive review and revision.

### **Goal 3: *Establish an Education Program***

A cycling education program is essential to successfully achieve a safe and courteous cycling environment. An education framework has been developed to address: injury prevention, compliance with the rules of the road and the encouragement of cycling as a healthy environment and lifestyle choice.

It is unrealistic to believe the City can provide an effective cycling education program on its own. It can however, effectively facilitate the development of partnerships with other agencies and community groups, to ensure that bicycling education reaches appropriate target groups, while designing and implementing programs to supplement the efforts of others.

## 4. Facilities for Cyclists

In the most basic terms, cyclists need a place to ride their bicycles and to secure them at their destinations. In order to accomplish the broad goal of providing facilities for cyclists, three focused goals have been identified:

- Goal 1a: Adopt a standard for cycling facilities.
- Goal 1b: Evaluate opportunities and constraints to cycling.
- Goal 1c: Develop a cycling network.

The provision of adequate places to cycle requires the determination of the type of cyclist expected to be present and providing a facility that meets their needs. It also requires identifying physical barriers (like the rivers and railway lines) and psychological barriers (such as high speed traffic) and designing facilities to overcome these obstacles. Beyond places to ride bicycles, there is a need to provide ancillary facilities for cyclists such as secure parking places.

### ***Streets and Paths***

The design guidelines in this chapter are intended to serve as a primer on bicycle facilities for planners, engineers and others in accommodating bicycle traffic in different riding environments. Appropriate facility design encourages predictable bicycling behaviour. For the most part, cyclists will be accommodated on streets; however there may be locations where pathways are the most suitable facility.

In relation to path and roadway design, all cyclists have four basic requirements whenever they ride:

- space to ride
- a smooth surface
- speed maintenance
- connectivity

These requirements apply equally on roadways and on separate paths.

An individual cyclist requires a minimum of 1.0 metre of width and 2.2 metres of height clearance for normal operation. Additional clearances to fixed objects, embankments, and higher speed traffic lanes are required for safe bicycle operation.

A smooth surface is desirable for bicycles to be used effectively, comfortably and safely. It has been found that surface quality and trip length were about equal in importance for cyclists when planning their trip route.

For bicycles to be effective as a means of transportation, cyclists must be able to maintain speed without having to slow or stop often. Cyclists typically travel at speeds between 20 km/h and 30 km/h although they may reach speeds in excess of 50 km/h on

downhill grades. Once slowed or stopped, it takes considerable time and effort to regain the desired operating speed. Bicycle routes must be designed for continuous riding, minimizing steep grades, rough surfaces, sharp corners, intersections and the need to give way to other users.

Cyclists need to be able to undertake and complete meaningful journeys by bicycle. The journey may be for recreation or for some other specific trip purpose. Bicycle routes on roadways and paths should combine to provide a network on which bicycle trips can be made effectively and conveniently. Connectivity is an important aspect of the construction of effective bicycle routes. In establishing bicycle networks, planners should give careful consideration to connectivity between links.

### Bicycle Facility Types

The appropriate bicycle facility for any given roadway depends on the street classification, pavement and right-of-way width, motor vehicle speeds, traffic volumes, truck traffic, adjacent land use and other related factors. On-street facilities typically consist of shared use streets and bicycle lanes. The travel volumes and choice of roadway design will affect the level of use by cyclists. For example, a four-lane divided highway with high traffic speeds and volumes, even with paved shoulders, will attract only more experienced bicyclists. Bicycle facilities are needed on arterial despite the limited use by bicyclists in order to provide access to destinations and to traverse barriers. It may not be possible to provide one type of facility that will serve the needs of all bicyclists.

#### Shared Streets

All streets, except some portions of the freeway system, are open to bicyclists; therefore, most are “shared streets” where the bicyclist and motorist share the same travel lanes. There are no specific standards for shared roadways. Local streets with low traffic volumes generally accommodate bicyclists safely with no additional treatment. Travel lanes should be considered to be narrow where a motorist would not be able to overtake a cyclist without changing lanes, or wide where a motorist could overtake a cyclist without changing lanes.

Shared streets are identified with route signing to identify preferred bike routes. The route provides continuity for the cycling journey and to other bicycle facilities such as bike lanes and shared use paths. Signing of shared roadways indicates that there are advantages to using these routes compared with other routes. This means the responsible agencies have taken action to ensure that these roadways are suitable for bicycling and will be maintained to a standard higher than unsigned shared streets.

#### Bike Lanes

Bike lanes are one-way facilities that carry bicycle traffic in the same direction as adjacent motor vehicle traffic. Bike lanes should always be provided on both sides of a two-way street to reduce the incidence of wrong way travel by cyclists. Motorists are prohibited from using bike lanes for driving and parking, but may use them to access

parking lanes, for right turn manoeuvres, for emergency breakdowns or avoidance manoeuvres.

Bike lanes are designated with pavement markings as well as signs along the street. A typical bike lane would be provided if the following conditions existed alone or in combination:

- traffic volumes and speeds are high
- adjacent parking use and turnover is high
- steep grades exist
- truck volumes are high
- bicycle volumes are high

Among the benefits of bike lanes are:

- defining a space for cyclists to ride, helping less experienced cyclists feel more confident and willing to ride on busier streets
- reducing motorist lane changing when passing bicyclists
- increasing the visibility of bicyclists in the transportation system
- reducing pedestrian/bicyclist conflicts due to fewer cyclists on the sidewalks
- creating a buffer between pedestrians and motor vehicles
- increasing effective turn radii at driveways and intersections
- improving sight distances
- providing space for emergencies/breakdowns

One unintended outcome of bike lanes is that road users may assume that cyclists should only be in the bike lane at all times. This is a concern when cyclists need to leave the bike lane to make left hand turns or other manoeuvres that cannot be made safely from the bike lane.

On rural cross-section roads with shoulders, the shoulder may be suitable for signing and marking as a bike lane, if the existing shoulder area and roadbed are stable, the existing travel lanes have adequate width, the horizontal curvature is not excessive so that the wheels of large vehicles do not track onto the shoulder area, and traffic volumes and speeds do not present undue risk to cyclists.

## Shared Use Paths

Shared use paths are facilities that are physically separate from roadways and where all motor vehicle traffic is excluded (except maintenance vehicles). Users are non-motorized and may include in-line skaters, bicyclists, pedestrians, joggers and wheelchair users. These facilities are usually designed for two-way travel. Paths should be considered as a part of an overall bicycle system, not as a substitute for on-street bicycle facilities. The key components to successful shared use paths are:

- continuous separation from traffic
- connection to major destinations (e.g. shopping malls, downtown, schools, parks)
- few street and driveway crossings
- shorter trip lengths than the road network offers
- visibility (e.g. proximity to housing and businesses)

When shared use paths are located adjacent to a roadway, some problems are likely to occur. When the path ends, bicyclists going against traffic will tend to continue to travel on the wrong side of the street. Wrong-way riding is a significant cause of bicyclist/motorist crashes. At intersections, motorists entering or crossing the roadway often will not notice bicyclists approaching from the motorist's right, as they are not expecting contra-flow vehicles. Many bicyclists will continue to use the roadway rather than the path because they have found the roadway is more convenient, better maintained or safer. Motorists who assume the bicyclists should be using the path may harass bicyclists using the roadway.

Shared use paths along roadways may be appropriate if the following conditions are met:

- bicycle and pedestrian use is anticipated to be high
- the adjacent roadway has high traffic volumes and speeds with no room for on-street bike facilities
- the path will generally be separated from motor vehicle traffic with few driveway or roadway crossings
- there are no reasonable alternatives for bikeways on nearby parallel streets

In general, the designated use of sidewalks for bicycle travel is not recommended. Widening sidewalks does not necessarily enhance the safety of sidewalk bicycle travel, because the extra width encourages faster bicycle speeds that increase the potential for conflict with motor vehicles at intersections and with pedestrians along the corridor.

Sidewalk bikeways should only be considered under limited circumstances:

- To provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances.
- On long, narrow bridges. In such cases, ramps should be installed at the sidewalk approaches. If approach bikeways are two-way, sidewalk facilities also should be two-way.
- In residential areas, sidewalk riding by young children is common. This type of sidewalk bicycle use is accepted, but it is inappropriate to sign these facilities as bike routes.

## ***Bike Parking***

Bicycle parking can be accommodated with facilities within the right-of-way, in parks or on private property.

Parking standards in most zoning ordinances means automobile parking. Many communities, however, are realizing that bicycle-parking standards are a vital part of a successful bicycle system.

Bike parking should be clearly designated, secure and convenient. At least part of the parking (intended for employees, for instance) should be covered or inside.

### ***Goal 1a: Adopt a Standard for Cycling Facilities***

The Transportation Association of Canada (TAC) has developed and publish state-of-the-art design manuals for the design and operation of cycling facilities.

*It is proposed that Geometric Design Guide for Canadian Roads (Chapter 3.4 Bikeways) and TAC's Bikeway Traffic Control Guidelines for Canada be adopted by the City of Saskatoon as the guiding documents for the design and operation of cycling facilities in Saskatoon.*

### ***Goal 1b: Evaluate Opportunities and Constraints to Cycling***

A review of the street system has been undertaken to identify physical, legal and psychological barriers to cycling. Physical barriers included natural and constructed features such as:

- the South Saskatchewan River
- Circle Drive / Idylwyld Drive freeway system
- railway rights-of-ways and embankments

Legal barriers primarily consist of roadways where cycling is prohibited due to the perception that cycling cannot be undertaken safely.

Psychological barriers describe roadway conditions that discourage cyclist use due to the reduction of cyclist comfort or the cyclist's perception of safety such as:

- high speeds
- high traffic volumes
- high truck volumes

The review also identified major citywide facilities that attract cyclists. Although the current street system, for the most part, provides an adequate level of service for confident cyclists, a formal cycling network is required to address the barriers identified and will provide the following:

- a greater recognition of cyclists as road users
- a increased level of review
- an indication of preferred routes for cycling that have been designed and recommended for that use
- increased awareness of key cycling links and attractions for visitors and residents unfamiliar with areas of the City

*It is proposed that a citywide inventory be prepared of the barriers to cycling to be used as a reference for City staff in the planning and design of bicycle facilities.*

### **Goal 1c: Develop a Cycling Network**

The cycling network will provide a specified level of design, maintenance, operational requirements, and signage to accommodate cyclists. It is recognized that the entire transportation network is open to use by cyclists with few exceptions. These exceptions are clearly outlined within Bylaw No. 7200 - The Traffic Bylaw, and are typically high-speed, high-volume facilities where it would be unsafe for cyclists to share the roadway surface with car and truck traffic.

The formal cycling network would be a combination of on-road shared-use lanes, separate on-road cycling lanes, and off-road pathways with appropriate signage and pathway marking. The network will also take advantage of existing bicycle facilities throughout the City.

The network will be for commuter cyclists (e.g. work, school and shopping trips) and include direct, on-road cycling facilities. The network will also provide access to leisure areas and be used by recreational cyclists.

The Saskatoon cycling network should meet the following specific objectives:

- be practical and achievable
- address the travel needs of commuter cyclists
- overcome barriers that exist within the network
- encourage cycling as a legitimate form of transportation
- promote a bicycle-friendly environment
- link neighbourhoods and key neighbourhood facilities
- provide integration with the transportation network and recreational pathways
- link to transit terminals and other transportation facilities for joint-use trips
- be designed and maintained to a specified standard
- encourage a greater number of trips by bicycle

Specific attraction areas that should be served by the cycling network include:

- the central business district
- University of Saskatchewan / Innovation Place
- Kelsey Institute

The cycling network should provide connectivity to the South Saskatchewan River valley and associated Meewasin Valley Authority trails.

A primary network of cycling facilities will be developed to accommodate long distance access to these key citywide attractions. Secondary cycling facilities (i.e. links serving shorter trips) will also be developed to provide access to area facilities such as leisure centres, pools, libraries, parks, schools and retail shopping.

A conceptual cycling network plan was developed to establish a working estimate for the required cost commitment to implement a formal cycling network in Saskatoon. The internal review process estimates that as much as *\$7.0 million could be required to construct a cycling network*. This estimate is based upon the following facilities being constructed:

- 7 facilities required to cross major barriers (e.g. South Saskatchewan River);
- 41 kilometres of signed, on-street routes;
- 10 km of signed and marked on-street bicycle lanes; and,
- 16 km of off-street pathways.

Additional justification for the network design is required before an expenditure of this magnitude could be considered. This will occur through the annual capital budget process.

Trialpha Consulting Limited has been retained to develop a Bicycle Facility Network Plan to undertake the detailed planning of the cycling network. The detailed planning process will build upon the work previously undertaken by staff and establish the following network plan components:

- preferred network routing
- detailed recommendations on the facility requirements along each network link
- detailed costing of alternative alignments
- a network staging plan
- budget requirements for each stage of the recommended network

*It is proposed that the Bicycle Facility Network Plan be presented to City Council upon completion for endorsement.*

## **5. Legislation for Cycling**

Cycling is currently governed by one piece of Provincial legislation and two City of Saskatoon Bylaws as listed below:

- Saskatchewan Highway Traffic Act
- City of Saskatoon Bylaw No. 7200 - The Traffic Bylaw
- City of Saskatoon Bylaw No. 6884 - The Bicycle Bylaw

The legislation should govern the overall use of bicycles and operation of cycling facilities in an understandable, enforceable and reasonable manner. This legislation also needs to reflect guiding principles and support the subsequent facility development and efforts to promote cycling use.

### ***Highway Traffic Act***

Bicycles meet the definition of “vehicle” in the Highway Traffic Act, and therefore cyclists are subject to the same rules of the road that apply to motorists. This is consistent with the guiding principles in that cyclists have access to city streets as cycling facilities and are therefore compelled to operate their bicycles in the same consistent and predictable manner as motorists. As well, it has become widely accepted and documented in North America that cycling safety is best achieved through the adoption of vehicular cycling principles. That is, cyclists, for their own safety and the safety of others, should be governed by the same rules of the road as motorists. There are no proposals at the current time to request changes to the Highway Traffic Act from the Province of Saskatchewan.

### ***City of Saskatoon Bylaws***

It is useful and practical to enact City bylaws regarding cycling as a consistent supplement to the Highway Traffic Act to account for local conditions or initiatives. Generally, the Traffic Bylaw provides additional legislation for vehicle operators and pedestrians using the streets in Saskatoon. A review of this document did not reveal any clauses that present concerns for cyclists or that diminish the role of cycling as an acknowledged mode of transportation.

The Bicycle Bylaw was enacted in 1988 and has remained relatively unchanged since that time. This bylaw covers the following items:

- licensing requirements for bicycles
- minimum equipments requirements such as brakes, bells and lights
- operation of bicycles on streets
- prohibiting motorists from using bicycle lanes
- operation of bicycles on park paths
- allowing bicycles to use sidewalks on bridges

- prohibiting cycling on certain portions of the freeway system

The Bicycle Bylaw generally covers the topics of importance however it is out-of-date (e.g.: there is no longer a bicycle licensing system), may be seen as a disincentive to cycling, and could be a challenge for effective enforcement by the City Police.

*It is proposed that a full review of the Bicycle Bylaw be undertaken with the assistance of the Office of the City Solicitor and the Saskatoon Police Service in consultation with the cycling community in order that the bylaw better fit the role that is envisioned for cycling in Saskatoon.*

## 6. An Education Program for Cycling

A bicycle education program is essential to successfully achieve a safe and comfortable cycling environment. The development of an education program should focus on bike handling and traffic skills, foster mutual respect amongst road users and encourage cycling as a desirable activity. This program should be designed as a series of specific projects targeted at child cyclists, adult cyclists, pedestrians sharing paths with cyclists and motorists sharing streets with cyclists. It should also reach out to the community for the formation of partnerships in the promotion of cycling.

Education efforts should primarily strive to:

- improve cyclist safety
- promote courtesy
- encourage bicycle use

Secondary themes should include:

- the reduction of motorized traffic
- environmental benefits such as improved air quality and emission reduction
- public health benefits

The three primary techniques to be used by an education program should be:

- information
- training
- experience

Information needs to be consistent, appropriate for the target audience and widely available. Training is beneficial in the delivery of this information where there is greatest need or interest. Putting knowledge into action through experience entrenches behaviours and attitudes, which improves cyclist access and safety in the long term.

Cyclists of all ages must become more knowledgeable of the rules of the road. They must learn how to ride safely in traffic situations on-road as well as on pathways. They must also learn their responsibilities under provincial and municipal legislation. Motorists must learn how to integrate safely with on-road cyclists. This involves knowledge of the operating parameters of a bicycle and respect for cyclists as road users.

Bicycle handling skills are essential to injury reduction strategies for cyclists. Most cycling injuries are the result of falls that could have been averted through basic bicycle handling skills. This is true for children and adults.

Traffic skills education is needed at the child and adult level to reaffirm the status that cyclists have on streets and to demonstrate appropriate riding techniques. Many

cyclists overestimate the dangers of riding on the street with motorists and underestimate the danger of using sidewalks and paths shared with pedestrians. Cyclists who treat their behaviour as “rolling pedestrians” raise the ire of both pedestrians and motorists who simply view them as scofflaws and a danger to themselves and the public. Traffic riding techniques improve the safety, convenience and utility of cycling for children and adults.

Motorists also need to be made aware of the rights and responsibilities of cyclists using streets. Motorists need to treat cyclists as equals on the streets but also need to appreciate that cyclists display a variety of operating characteristics that may or may not be the same as motorists. For example, many motorists underestimate the speed at which many cyclists can travel.

Cyclists and pedestrians also need to know appropriate use of shared-use facilities where cyclists share the same facility with pedestrians. Pedestrians often feel intimidated and uncomfortable by cyclists using these facilities at higher speeds or in a reckless manner. Cyclists often do not notify pedestrians of their approach and pedestrians often act in unpredictable ways when they hear a bicycle bell ring.

An education program is required to establish safe operating practices and greater respect for the legislation governing road users. More specifically, an education program will help facilitate the following goals:

- promote formal, school-based education programs for children
- establish the availability of bicycle safety programs for adults
- develop a public awareness and encouragement campaign on cycling

Development of an education program on cycling will involve working with local school boards, potential funding partners and bicycle educators. Existing training programs and promotional materials will be reviewed to establish a strategy on how the education program may best be delivered. The following table illustrates some programs that have been successfully used in other municipalities along with the type of program and the target audience.

Example Program	Information	Training	Experience	Child	Adult	Cyclist	Motorist
Can-Bike Skills Training	*	*	*	*	*	*	
Bike to Work Week Promotion	*		*		*	*	*
Cycling Map Information	*			*	*	*	
Safe Cycling Information	*			*	*	*	*
Bike-Friendly Business Award	*				*	*	*

Increased awareness of safe cycling skills and the relevant legislation is necessary to attain the goal of integration with other road users. The City of Saskatoon should undertake a leadership role in promoting the safe and appropriate use of bicycles as it is the primary provider of cycling facilities (streets). Given its authority to provide these facilities and the opportunities for central coordination of programs, the City also is a suitable agency to facilitate the coordination of a bicycle education program. Partnerships with other organizations such as the school boards, SGI and the Saskatoon Police Service will be necessary to effectively deliver an education program.

*It is proposed that the formation of partnerships be undertaken with the Saskatoon Board of Education, Saskatoon Catholic Schools, SGI, local service organizations and the Saskatoon Police Service with the aim of reviewing the current education programs and information directed at elementary and high school students in Saskatoon.*

*Safe cycling information has been produced by the Infrastructure Services Department and is currently available in pamphlet form and via the City's website. It is proposed that this information be reviewed and revised as necessary and distribution/availability be continued on an annual basis.*

*Infrastructure Services is currently completing the development of a cycling map for the City of Saskatoon as a product of our Geographic Information System. It is proposed that the mapping be completed and that private sponsorship be sought to publish a full colour product for wide distribution.*

## 7. Recommendations

The City of Saskatoon must play a vital role in accommodating and encouraging cycling as a viable mode of transportation. It is recommended that the vision articulated in this report along with the guiding principles be adopted as policy.

### ***Vision***

- That the City of Saskatoon be a place where cycling is encouraged as a reasonable and practical method of travel.

### ***Guiding Principles***

- Every street is a cycling street.
- Every bicycle trip improves the quality of life for all.
- Bicycles can be used safely and without fear of injury.

It is further recommended that the goals outlined in this study be endorsed and that Infrastructure Services develop an annual work program for the timely implementation of these goals

### ***Goal 1: Provide Adequate Facilities for Cyclists***

- Goal 1a: Adopt a Standard for Cycling Facilities

It is proposed that Geometric Design Guide for Canadian Roads (Chapter 3.4 Bikeways) and TAC's Bikeway Traffic Control Guidelines for Canada be adopted by the City of Saskatoon as the guiding documents for the design and operation of cycling facilities in Saskatoon.

- Goal 1b: Evaluate Opportunities and Constraints to Cycling

It is proposed that a citywide inventory be prepared of the barriers to cycling to be used as a reference for City staff in the planning and design of bicycle facilities.

- Goal 1c: Develop a Cycling Network

It is proposed that the Bicycle Facility Network Plan be presented to City Council upon completion for endorsement.

**Goal 2: *Enact Legislation Appropriate for Cycling***

It is proposed that a full review of the Bicycle Bylaw be undertaken with the assistance of the Office of the City Solicitor and the Saskatoon Police Service in consultation with the cycling community in order that the bylaw better fit the role that is envisioned for cycling in Saskatoon.

**Goal 3: *Establish an Education Program***

It is proposed that the formation of partnerships be undertaken with the Saskatoon Board of Education, Saskatoon Catholic Schools, SGI, local service organizations and the Saskatoon Police Service with the aim of reviewing the current education programs and information directed at elementary and high school students in Saskatoon.

Safe cycling information has been produced by the Infrastructure Services Department and is currently available in pamphlet form and via the City's website. It is proposed that this information be reviewed and revised as necessary and distribution/availability be continued on an annual basis.

Infrastructure Services is currently completing the development of a cycling map for the City of Saskatoon as a product of our internal Geographic Information System. It is proposed that the mapping be completed and that private sponsorship be sought to publish a full colour product for wide distribution.