

Calgary Downtown Commuter Cyclist Survey Report

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THE CITY OF
CALGARY

Executive Summary

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INTRODUCTION – What the survey is about and how it was conducted

THE 2006 COMMUTER Cyclist Survey was performed in June and July. According to Recommendation #23 of the Calgary Bikeway and Pathway Report, a survey of commuter cyclists should be performed every five years. A comprehensive survey of cyclists was last performed in 2000.

The 2006 survey was distributed by handing out paper surveys to cyclists entering the Central Business District between 6:30 a.m. and 9 a.m. on Tuesday, Wednesday and Thursday mornings.

There were many goals for the survey but the overarching rationale was to understand cyclists' needs in order to improve conditions for those already cycling and improve facilities so others would be tempted to try cycling as a commuting option.

2

RESULTS

2.1 The typical cyclist

TYPICAL CYCLISTS commuting to downtown are male (75 per cent), over 35 years of age (65 per cent) and earning more than \$90,000 a year (45 per cent). They cycle to work nine months of the year for an average commute distance of 10 kilometres and 28 minutes each way. The improvements they'd most like to see and that they believe would make cycling easier for them include bike lanes in the downtown core, bike lanes outside downtown and more pathways outside of the downtown. They commute by bicycle 145 days per year and their main reason for doing so is exercise. When not riding their bikes, they are most likely to take transit than any other mode. They have access to a car but choose not to drive it to work.

2.2 Changes since 2000 survey

MANY OF THE results from the 2006 survey are strikingly similar to results from the 2000 survey, especially information regarding demographics and income level. Perhaps the most significant change is the number of cyclists who cycle year-round. More and more downtown Calgary cyclists are choosing to cycle year-round. This may be a result of expanded snow clearing on the pathway system. A summary of the changes can be found in Appendix D.

2.3 Responses

- Total cyclists observed during the survey was 3,516. Total cyclists observed crossing into the central business district was 3,234. This represents an 11 per cent increase since 2000.
- The response rate of 68 per cent was very high for a mail-back survey. Of the 2,775 surveys distributed, 1,883 were returned.

2.4 Interesting facts

- Exercise remained the most important reason for cycling.
- The highest area of growth was environmental benefit.
- Tenth Avenue South was the downtown street most requested for improvements.
- Commuter cyclists spend an average of 50 per cent of their journey on pathways and 45 per cent on-road.
- Winter cycling increased since the 2000 survey. The majority (62 per cent) of respondents indicated that increased snow clearing would encourage them to ride more in the winter.

- Despite the fact that it's more dangerous than riding on-road, 44 per cent of cyclists continue to ride on the sidewalk. This suggests the need for improved on-street facilities and additional education for cyclists and motorists.
- The vast majority (88 per cent) of cyclists use some type of changeroom or shower facilities.
- There is considerable interest in the construction of a "bike station" facility.
- In the past two years, 24 per cent of downtown commuter cyclists were involved in an accident and 10.5 per cent were injured in an accident. Both of these figures represent decreases from the 2000 survey.
- Bike lanes both inside and outside of downtown were by far the most requested improvement.

3 RECOMMENDATIONS

- **RECOMMENDATION 1:** improve downtown conditions for cyclists. Possible roads for on-street improvement include 10th Avenue, Second Avenue, 11th Street and First Street S.W.
- **RECOMMENDATION 2:** improve on-street bicycle routes both inside and outside downtown. Use bike lanes, wide curb lanes, bicycle boulevards and traffic-calming measures where appropriate.
- **RECOMMENDATION 3:** conduct further research into the female cyclist demographic.
- **RECOMMENDATION 4:** complete a survey of younger cyclists.
- **RECOMMENDATION 5:** expand secure parking facilities and investigate the feasibility of publicly-accessible changeroom and shower facilities.



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1.0 Background

CALGARY IS ONE of the fastest growing cities in North America and cycling is its fastest growing mode of transportation. The city is located in Southern Alberta where the foothills of the Rocky Mountains meet the prairies. The geography provides a gentle topography for cyclists, particularly in the Bow River Valley, where much of current cycling infrastructure and activity is focused.

Calgary has a young, educated and active population with one of the most agreeable climates for cycling in Canada. Calgary has low levels of precipitation and snowfall as well as cool morning and evening temperatures during the peak summer months. Chinooks result in warmer temperatures in the winter months. These factors create an environment with great potential for bicycle commuting: the most efficient and one of the most environmentally benign forms of transportation.

1.1 Pathway and bikeway network

WITH OVER 635 kilometres of multi-purpose pathways and 260 kilometres of signed, on-street bikeways, Calgary boasts one of the most extensive cycling networks in North America. The pathway system is designed for and used by a variety of users including walkers, joggers, cyclists, in-line skaters, limited-mobility persons and others.

As of 2006, the pathway system also had 110 kilometres of snow-cleared pathways to enable possible year-round bicycle commuting. The majority of these snow-cleared routes are on the Bow River pathway. This pathway offers both a scenic setting and a direct route with limited need for stopping. As such, the Bow River pathway is one of the most popular pathways for both commuters and recreational users.

Despite the excellent pathway system, bikes also have a right to be on the road. Cycling is permitted on all city streets except Deerfoot Trail, a freeway. The City has identified an integrated on-street bikeway network by signing 260 kilometres of roads. On-street bikeways are identified by a sign and are mostly located on low-vehicle volume, low-speed residential streets. Calgary expanded its

on-street cycling program in the past few years to include a bike lane on 53rd Street N.W. as well as marked wide curb lanes on Home Road N.W., Second Street S.W. and Mission Road S.W. The newest project is a contra-flow bicycle lane on 9A Street N.W. (installed August 2006).

1.2 Planning for the bicycle in Calgary

TWO IMPORTANT policy reports on the bicycle adopted by City Council, as well as other planning reports which mention cycling have guided Calgary cycling infrastructure and policy.

1.2.1 1996 Calgary Cycle Plan

THE CALGARY CYCLE PLAN was adopted by Council in October 1996. The plan contains 46 recommendations to improve cycling conditions. These recommendations include a variety of initiatives such as encouragement and enforcement, and design of infrastructure, etc. Many of the recommendations in this report have been implemented.

1.2.2 2000 Calgary Pathway & Bikeway Report

COMPLETED BY IBI GROUP in May 2000 and adopted by Council in July 2000, the Calgary Pathway & Bikeway Report provides 27 recommendations for the enhancement of Calgary's pathway and bikeway system. The vision statement of this report states "...non-polluting modes have inherent value as viable and efficient means of both transportation and recreation. [Cycling] facilitate[s] healthy active living and contribute[s] to overall community vitality."

1.2.3 Other planning reports

SEVERAL OTHER REPORTS adopted by Council mention the need to support cycling and walking. These reports include the 1995 Calgary Transportation Plan, the Calgary Municipal Development Plan and the Sustainable Suburbs Report.

A number of community and regional plans specifically mention strategies to increase walking and cycling. These include: 1) Regional Policy Plans 2) Area Structure Plans and 3) Area Redevelopment Plans.

1.3 Previous survey research

1.3.1 1992 Commuter Cyclist Survey

THE CITY OF CALGARY conducted its first survey of commuter cyclists in 1992. The survey was administered by attaching surveys to bicycles parked downtown and at other major bicycling destinations throughout the city such as major educational institutions and commercial hubs. Some questions from the 1992 were repeated in the 2000 and 2006 surveys. Comparisons of the results can be found in Appendix D.

1.3.2 2000 Commuter Cyclist Survey

IN 2000, The City of Calgary conducted a more extensive survey of commuter cyclists; this survey formed the basis of the 2006 survey. Paper copies were distributed to cyclists entering the downtown core. In all, 2,470 surveys were distributed in this manner and 1,434 surveys were returned, giving a 58 per cent response rate. The 2000 Commuter Cyclist Survey Report provided extensive information on routes that commuter cyclists follow to downtown. This led to planning initiatives to improve certain routes. The report is available online at calgary.ca.

1.3.3 2002 Pathwatch

EVERY FEW YEARS The City of Calgary Parks department conducts their Pathwatch Study. This study consists of two components: interviews of pathway users to determine safety concerns and desires for improvements and pathway user profiles which measure activity by type at high-use segments of the pathway system. The purpose of this survey is to determine improvements and areas of concern for recreational users of the pathway system.

1.3.4 1993, 1996, 1999, 2001 Travel to Work Survey

THE CITY OF CALGARY periodically surveys residents as a part of the civic census to determine commuting trends. This allows The City to help plan for the future. Although the survey has not been conducted since 2001, in the last two surveys cycling was the fastest growing mode of transportation both city-wide and to downtown. In 2001 the survey showed that cycling was the modal choice for 1.3 per cent of morning commuters.

1.3.5 Investigation of Cycling Sensitivities Study

PUBLISHED IN 2002, the survey conducted by the University of Calgary investigated which factors most affect the decision to commute by bike. In the survey, cyclists were asked to imagine a number of specific trips and rank them by order of preference. This way, the research identified which factors most encourage or discourage cyclists. The study showed the existence of secure parking was a major factor and that cyclists were willing to cycle 18.8 minutes out of their way to obtain access to such facilities.¹

¹ Abrahms, John, McMillan, Susan et al: Investigation of Cycling Sensitivities Study. Available online at: <http://www.ucalgary.ca/~jabraham/Papers/calgarybike/CalgaryBike.pdf#search=%22investigation%20of%20cycling%20sensitivities%22>

2.0 Rationale of the 2006 survey

THE 2000 COMMUTER Cyclist Survey was an invaluable resource for improving cycling facilities throughout Calgary. However, The City realizes there is still much work to be done to improve. Despite the fact that cycling in Calgary is growing, there is still plenty of opportunity for additional growth.

According to recommendation #23 of the 2000 Calgary Pathways and Bikeways Plan Report, user surveys should be conducted every four or five years. Moreover, Calgary's Transportation department recently received some funding to improve on-road cycling facilities. The 2006 survey was undertaken to better understand the needs of commuter cyclists so the new infrastructure could be implemented to maximize the benefits.

The survey was designed to determine what needs to be improved for those already cycling with the goal of eventually improving facilities so others are encouraged to try cycling as a commuting option. The City is working hard to implement all the recommendations in the Calgary Cycle Plan and the Bikeways and Pathways Report.

The City of Calgary strives to achieve the Council Priority to increase alternative modes of transportation and the 2006 survey is a part of this wide-ranging goal.

Some objectives of the survey were to:

- Compile and analyze data regarding cyclists entering downtown for comparison with the 2000 survey.
- Determine which cyclist characteristics are related to certain cycling behaviours.
- Determine routes used by cyclists.
- Assess routes and pathways in high demand.
- Determine the origin and destination of bicycle commuting trips.
- Determine modes used by cyclists when they aren't cycling.
- Determine the duration and distance of bicycle commuting trips.
- Determine seasonal variation of cycling.
- Determine improvements The City could undertake to encourage year-round cycling.
- Determine which routes need improvement.
- Determine the amount of time spent on-road vs. on-pathway.
- Determine the demand for a bike station facility.
- Determine the effectiveness and condition of signed on-street bikeways.
- Determine the number of cyclists who've had a bike stolen.
- Determine the number of bicycle collisions.
- Determine the cause of collisions.
- Determine the most requested improvements in order to encourage more cycling both in the downtown and outside the core.
- Determine the demographic characteristics of the typical downtown Calgary commuter cyclist.

3.0 Scope of the survey

THE 2006 CYCLIST SURVEY was distributed to cyclists entering the downtown on Tuesday, Wednesday and Thursday mornings from June 27 to July 20, 2006 from 6:30 a.m. to 9 a.m. A comprehensive, 10-page survey (see Appendix A) was offered to all cyclists. The times of day and days of the week were chosen in an effort to survey only commuter cyclists.

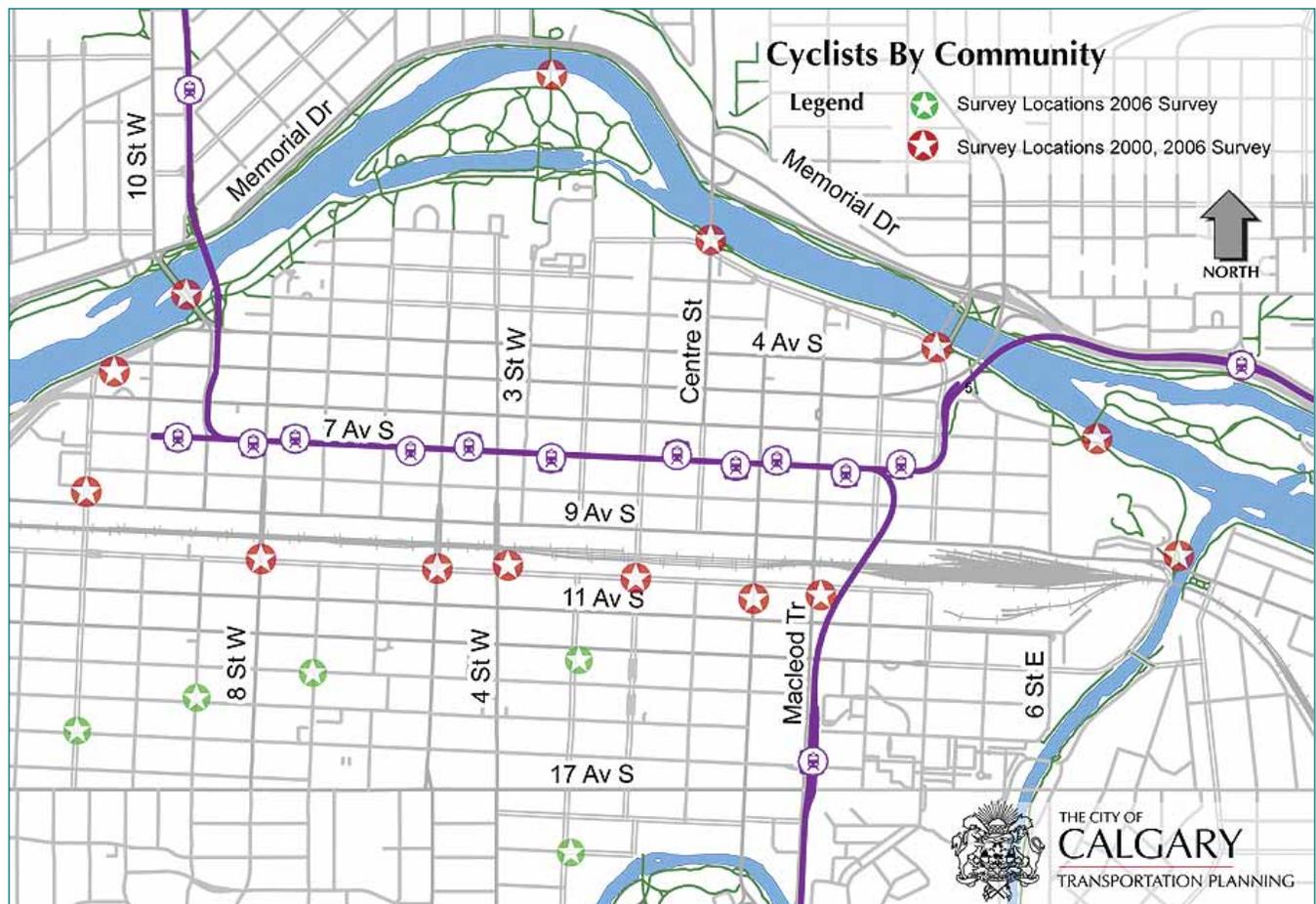
Surveys were distributed at all Central Business District access points. McDonald Bridge was not surveyed because the bridge was closed, and the flyover was not surveyed because the 2000 counts were so low that it was not considered necessary. Five additional survey locations were

added in the Beltline area at points where new bicycle facilities have been implemented (Second Street S.W.) and where new bicycle corridors are under consideration (13th Avenue S.W. and 15th Avenue S.W.). See the map of survey locations in Figure 1.

Pedestrians requesting surveys were permitted to complete the survey if they occasionally cycled to work. Citizens who contacted The City requesting to complete the survey were mailed a copy.

In addition to distributing surveys, surveyors completed counts of cyclists entering and exiting downtown. This allows for a measure of cyclists entering downtown in the peak months, and permits a comparison to the 2000 survey. The results of this comparison are in Appendix B.

FIGURE 1 – Survey distribution points



4.0 Survey format

The survey is separated into sections.

- **Tell us about your daily journey**
Cyclists are asked about characteristics of their journey.
- **Mapping your route**
Cyclists are asked to draw their usual route on a map.
- **Tell us about your route**
Cyclists describe characteristics of their route.
- **Seasonal cycling**
Cyclist describe how their behaviour varies in different months.
- **Facilities**
Cyclists describe their parking facilities and desired improvements.
- **On-street bikeways**
Cyclists describe their knowledge of on-street cycling facilities.
- **Additional information**
Cyclists describe past collisions and indicate desired improvements.
- **Tell us about yourself**
Demographic information.

5.0 Methodology

THE METHODOLOGY for the 2006 survey is based on the 2000 survey. A schedule was made to distribute surveys at the 20 survey locations. Signage was adapted from past surveys and was posted at each location the day before distribution to notify cyclists. Similar signage was then used the day of the survey to identify the survey and that it was being conducted by The City of Calgary.

Surveys were placed in sealed, numbered envelopes and handed to the cyclist when they reached the survey station. Each envelope also contained a postage-paid envelope for mailing in completed surveys. The numbering allowed the research to track from which station a returned survey came.

The survey was not made available online as the research was attempting to isolate commuter cyclists. Moreover, it would be difficult for cyclists to describe their route on an online form.

The number of surveyors at a location was dependent on previous recorded volumes and the logistics of a survey station. The maximum number of surveyors at one location was six and the minimum was one.

The start temperature, end temperature and cloud cover was noted by the surveyor(s) as well as the number of inbound, outbound, on-street and off-street cyclists. The weather was very co-operative and made for near ideal cycling conditions on almost all survey days.

6.0 Results

This section summarizes the cyclist counts and survey responses.

CYCLIST count

THE SURVEY METHODOLOGY enabled a count of the total number of cyclists entering or exiting downtown between 6:30 a.m and 9 a.m.

Appendices B and C provide data comparing the rate of increase with the 2000 survey and the distribution between on-street and off-street cyclists.

The total cyclists observed for this survey was 3,516. The total entering or exiting the Central Business District (CBD) was 3,234. Compared with the 2,913 cyclists observed in 2000, this represents an 11 per cent increase.

Employment in the CBD may have grown more than 11 per cent. Therefore, the percentage of cycle commuters may actually have decreased relative to other modes of transportation to downtown. The information for total employment change downtown will be known upon completion of the Travel to Work Survey.

SURVEY response rate

Surveys distributed on pathway/road:	2,594
Surveys requested by mail:	181
Total surveys distributed:	2,775
Surveys returned:	1,863
Response rate:	68%

The response rate for this survey is more than double the typical response rate for mail-in surveys and was particularly good for a comprehensive 10-page survey. The response rate for the 2000 Cyclist Survey was 58 per cent. Results from each section of the 2006 survey are described below.

6.1 Tell us about your daily journey

QUESTION 1: Are you commuting to work today?

	Number of respondents	Percentage
Yes	1,817	98%
No	46	2%

Question 2: Where did you start your journey today?

As in 2000, the majority of downtown commuter cyclists are located in Northwest communities. See the map on page 7 (Figure 2) for an illustration of cyclists by community.

1,839 of 1,863 respondents answered this question.

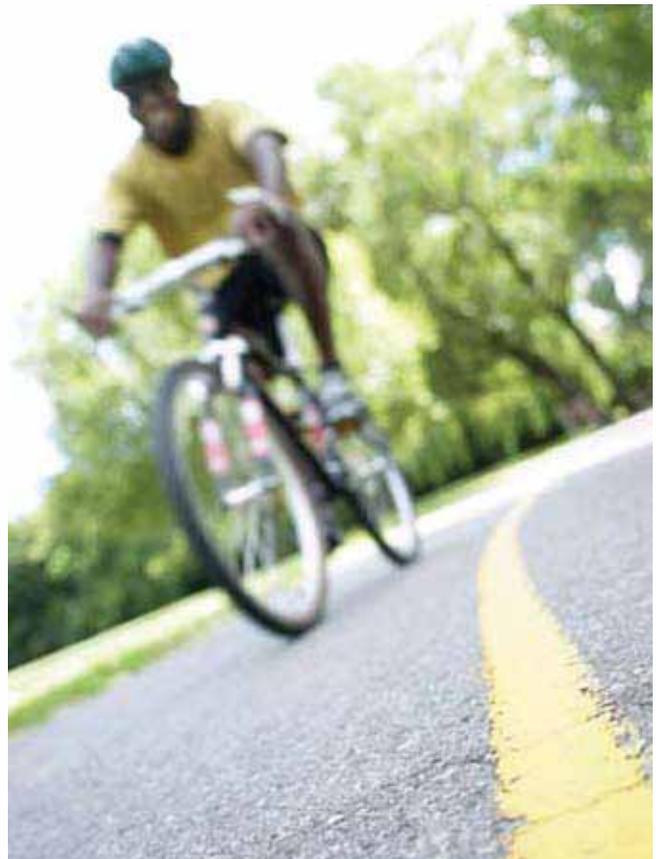
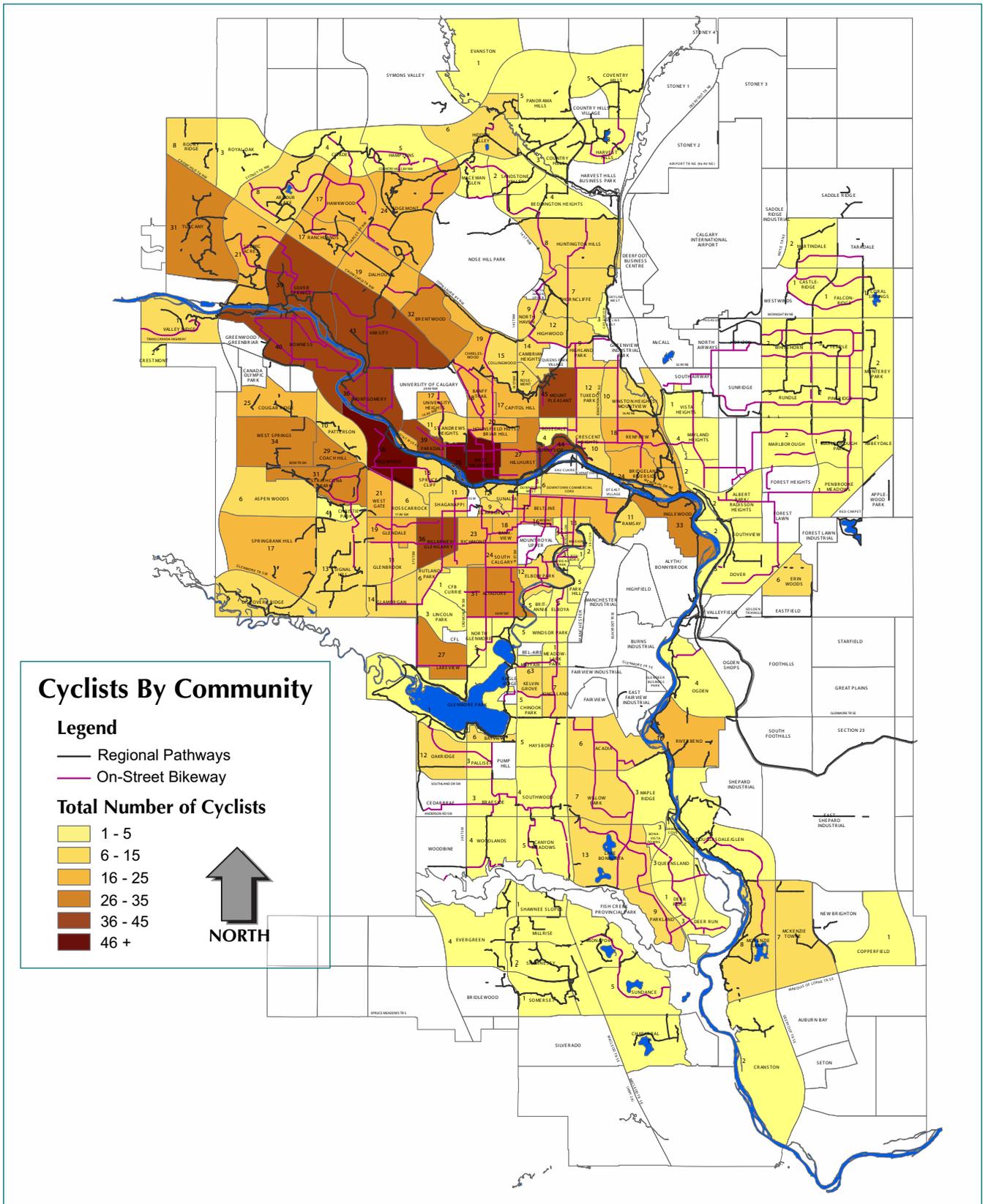


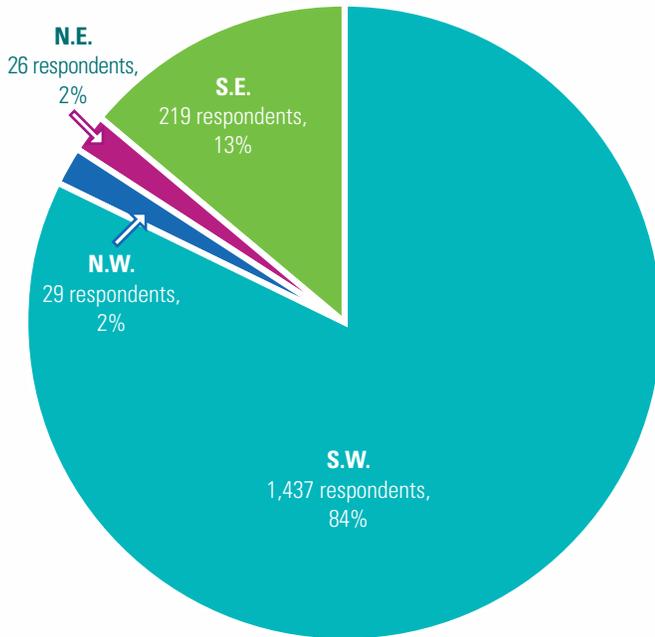
FIGURE 2 – Cyclist community of origin



QUESTION 3: Where are you going?

1,770 of 1,863 respondents provided a final destination.

FIGURE 3 – Cyclist end destination by city quadrant



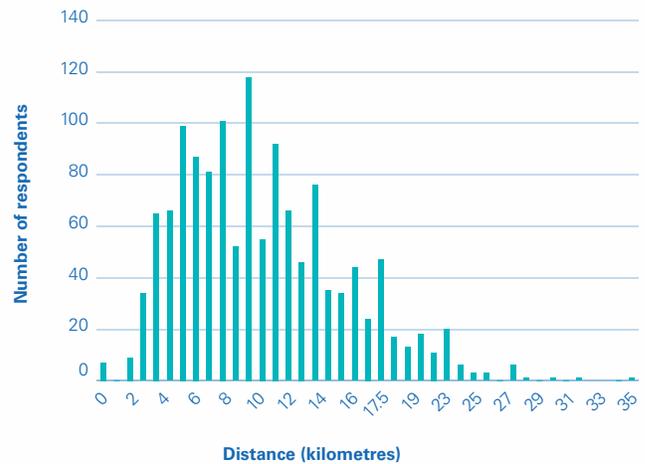
QUESTION 4: What is the time or distance of your one-way journey?

1,338 of 1,863 respondents provided a distance.

Median distance	11 km
Average distance	10 km
Maximum distance	35 km

The average distance travelled in the 2000 survey was 10 km one-way.

FIGURE 4 – One-way journey distance frequency distribution



1,661 of 1,863 respondents provided a time.

Median time	25 minutes
Average time	28 minutes
Maximum time	95 minutes

The average time in 2000 was 28 minutes. Trip times have increased slightly since the 2000 Cyclist Survey. Using the mean times and distances, the average speed in 2000 was 23.6 km/h and in 2006 it is 23.4 km/h.

Twenty minutes is a fairly short cycling commute which most reasonably healthy adults could accomplish. As such, a map was created in which all the communities that created trips of 20 minutes (as reported by survey respondents) or less are highlighted (Figure 5).

FIGURE 5 – Communities within a 20-minute bicycle ride of Downtown as reported by survey respondents.

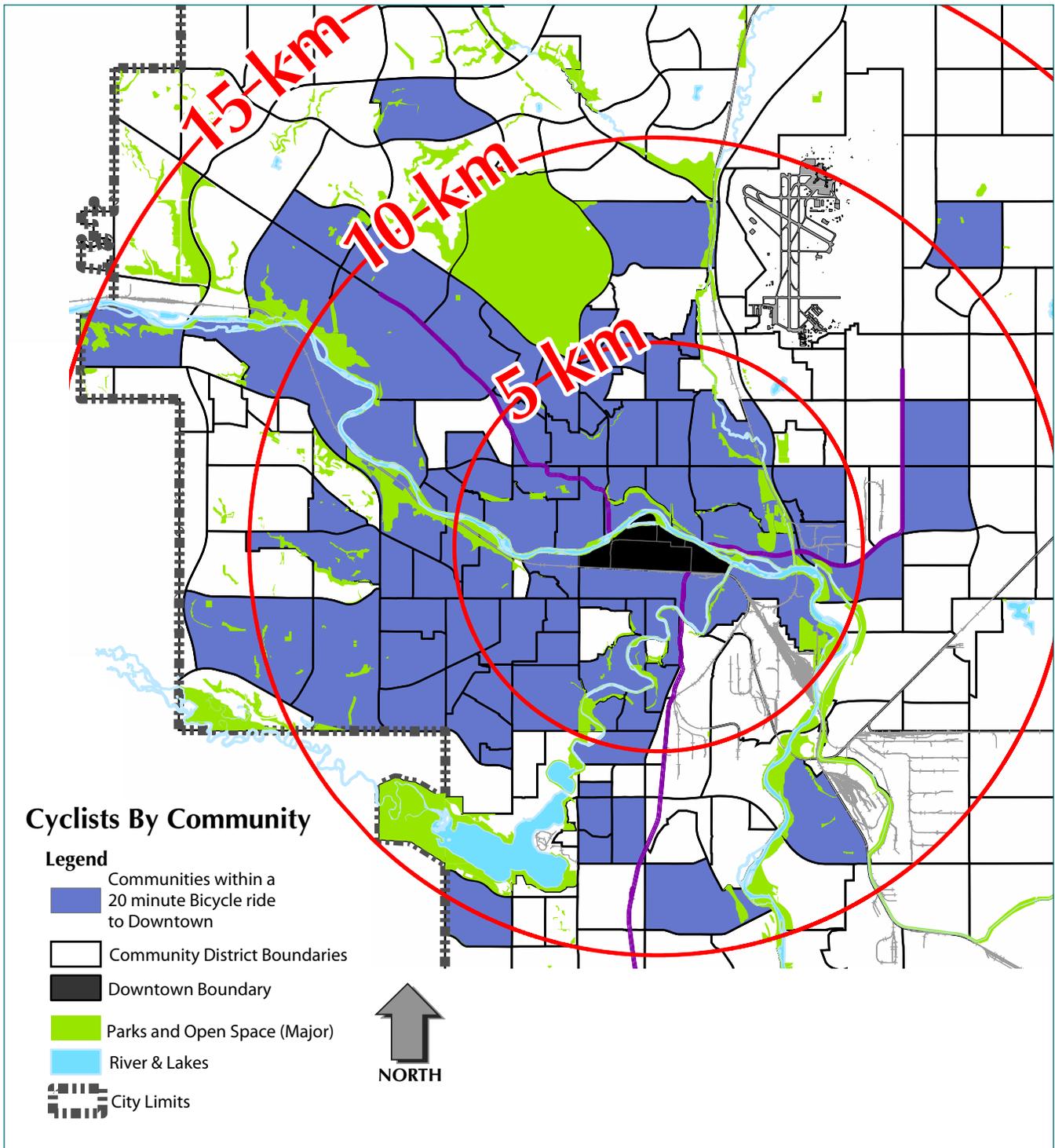
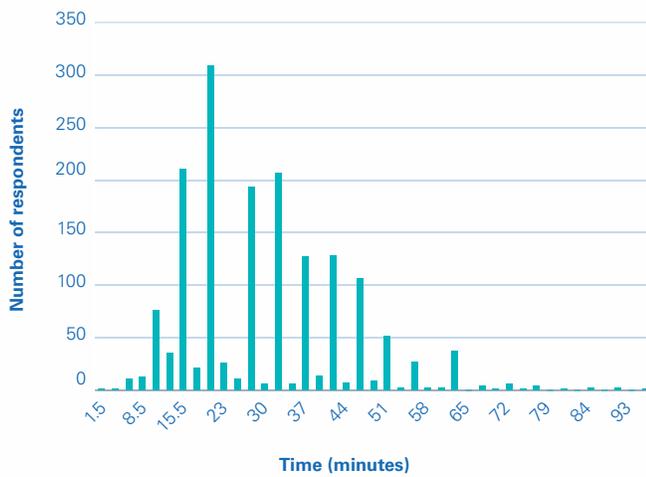


FIGURE 6 – One-way journey time frequency distribution



QUESTION 5: Do you have access to a car that you could have used for this journey?

1,619 respondents, or 87 per cent had access to a car they could have used.

244 respondents or 13 per cent had no access to a car.

The percentage of respondents with access to a car remained unchanged since the 2000 survey. Most do not have to cycle but choose to do so.

QUESTION 6: Thinking of your average weekly commute, how many days a week do you travel to work by:

1,810 of 1,863 respondents answered this question.

Average number of days cycling	4.1
Average number of days taking transit	0.45
Average number of days driving alone	0.37
Average number of days walking	0.11
Average number of days carpooling	0.08
Average number of days other	0.05
Average number of days in-line skating	0.03

Number of cyclists that sometimes travel by:

Taking transit	501
Driving alone	399
Carpooling	304
Walking	134
In-line skating	29
Other	71

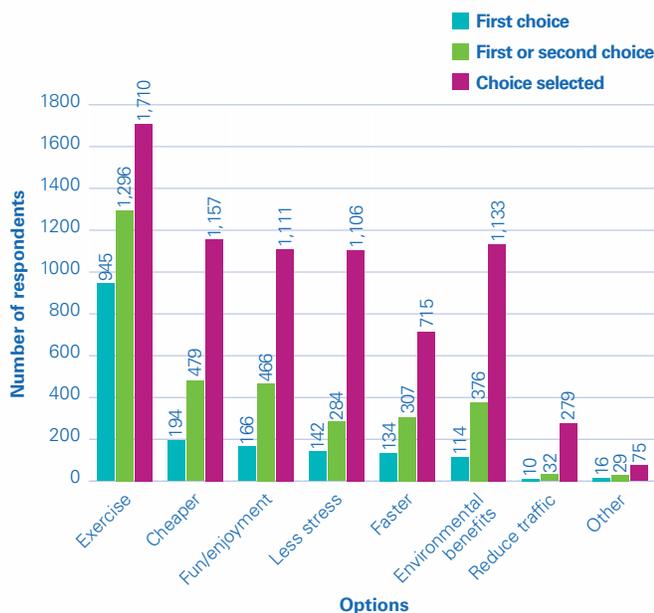
Note: this question may have been misinterpreted by some as they may be indicating only how often they commute at certain times of the year.



QUESTION 7: What are your most important reasons for cycling to work? Please rank your top four (4) reasons 1 to 5, where 1 represents the most important reason.

Many respondents did not rank reasons but simply checked all that applied. These results were still included in the final analysis. The column “choice selected” indicates the respondent selected that option in some way (either by ranking it 1 – 4 or by simply checking it).

FIGURE 7 – Reasons given for cycling



As in the 2000 survey, exercise remained the number one reason for cycling five times more often than any other response. There was, however, an increase in several other reasons. See below for the per cent of the total number of times each reason was either checked or ranked 1, 2, 3 or 4.

Reason	2000	2006
Exercise	23%	23%
Cheaper	14%	16%
Fun/enjoyment	16%	15%
Less stress	16%	15%
Faster	14%	10%
Environmental benefit	11%	16%
Reduce traffic	6%	4%

When it comes to what motivates people to cycle for their commute, exercise has remained relatively steady— still in first place for this rating. Environmental benefit has made the most significant gains.

6.2 Mapping your routes

6.2.1 Route-finding data

The survey requested that individuals draw their usual route on a map provided. This is shown in Figure 8. As in 2000, the Bow River Pathway remains the principal artery into downtown. However, on-street routes such as the bike lanes on 53rd Street N.W. and the marked wide curb lanes on Second Street S.W., are also being used.

FIGURE 8 – Cyclist routes

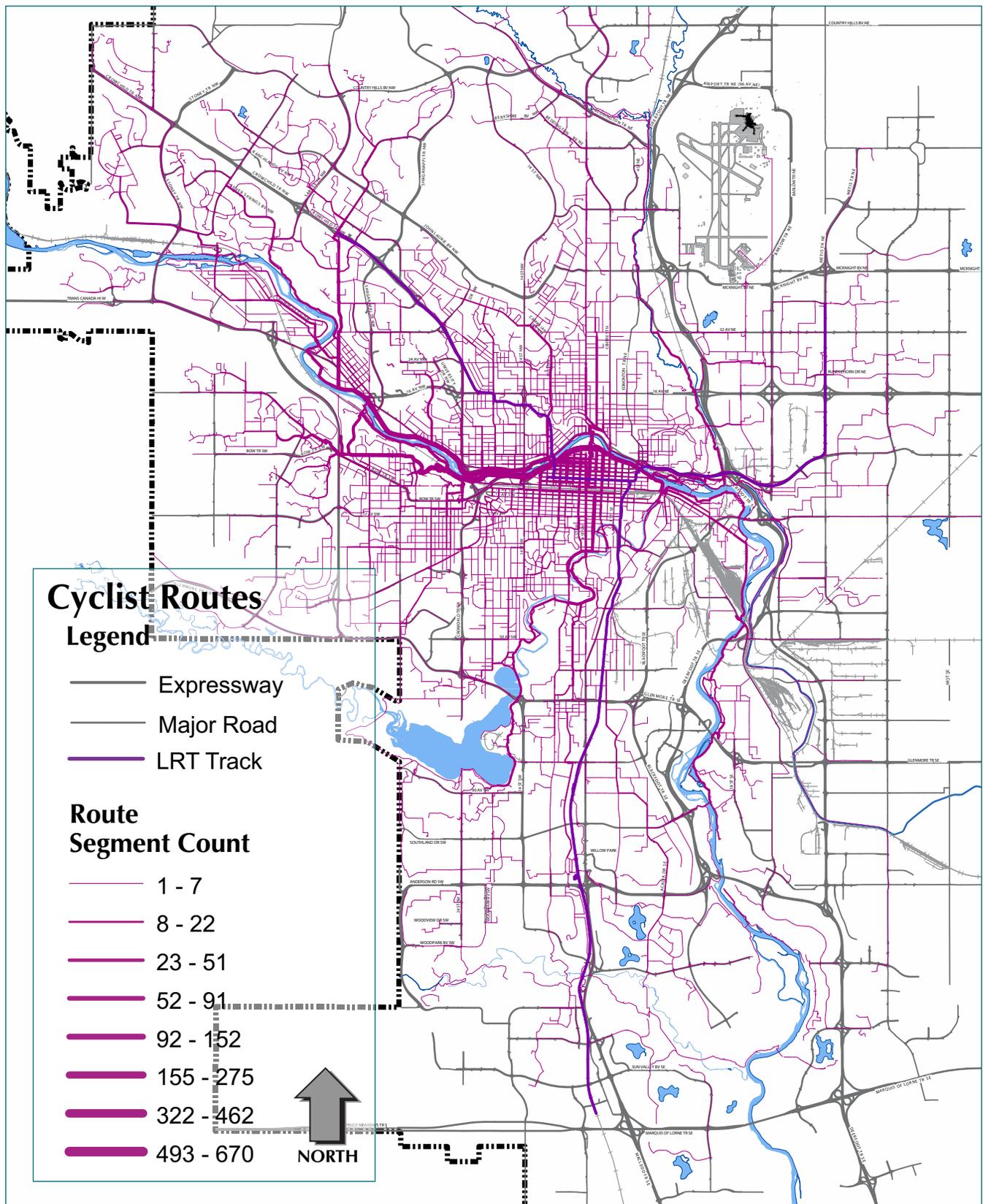
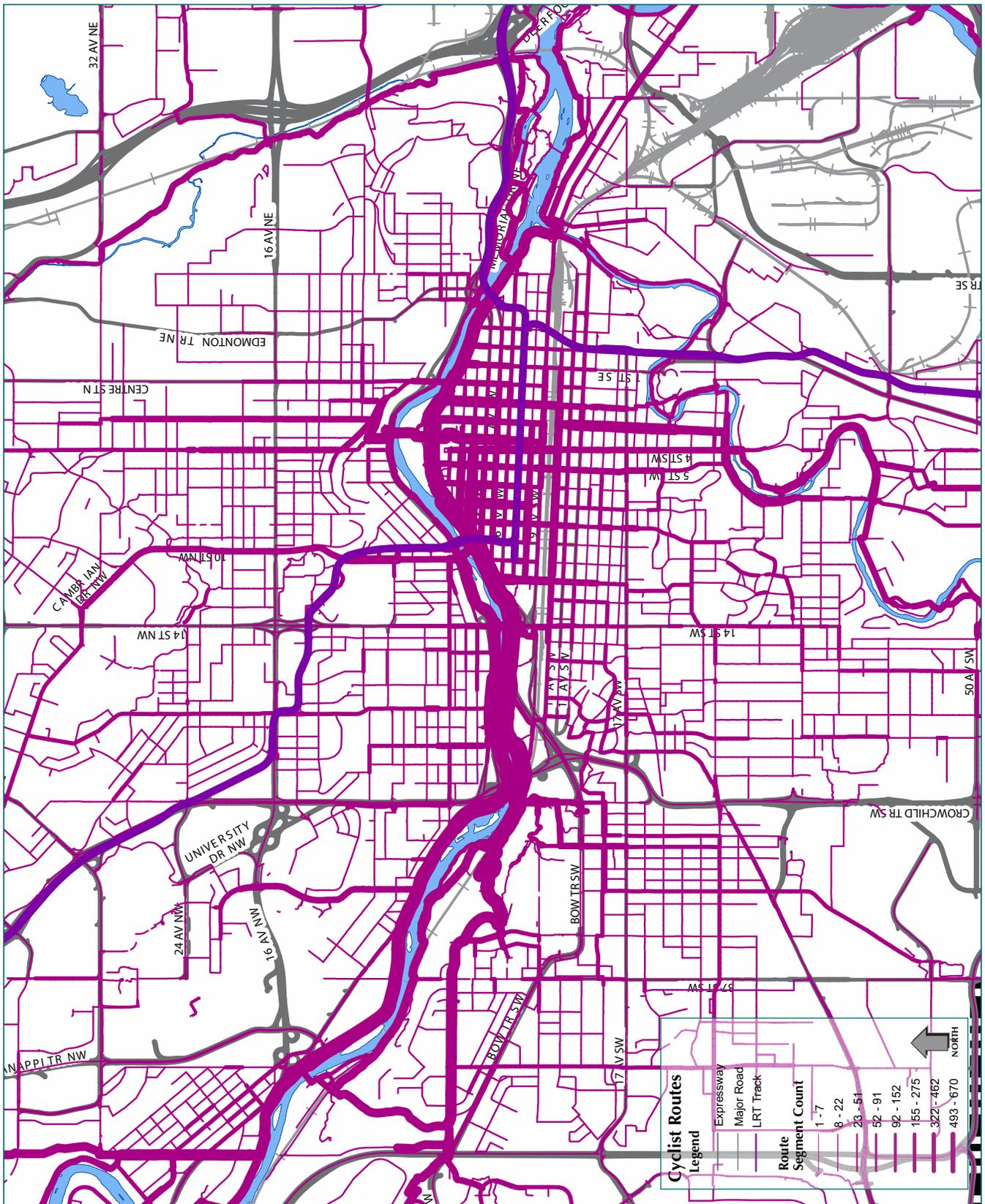


FIGURE 8.1 – Cyclist routes – City Centre



6.3 Tell us about your route

QUESTION 8: Which east/west route in downtown/Beltline would you like to see improved?

188 of 1,863 respondents provided a downtown east/west route.

The most requested routes for improvements were:

10th Avenue S.W.	36%
Eighth Avenue S.W.	16%
Third Avenue S.W.	8%
Nineth Avenue S.E.	8%
Memorial Drive N.E.	6%
17th Avenue S.W.	5%
Fifth Avenue S.E./S.W.	5%
Sixth Avenue S.E./S.W.	4%
Fourth Avenue S.W./S.E.	4%
12th Avenue S.W.	4%
11th Avenue S.W.	3%

Tenth Avenue South was identified in previous research as a candidate for bicycle lanes. These findings strengthen this view. 10th Avenue S.W. remains the most requested route for improvements.

QUESTION 9: Which north/south route in downtown/Beltline would you like to see improved?

259 of 1,863 respondents provided a north/south route in downtown for improvement.

The most requested routes for improvements were:

First Street S.W.	14%
Eighth Street S.W.	13%
Fourth Street S.W.	11%
Centre Street N.	10%
11th Street S.W.	9%
Fifth Street S.W.	9%
14th Street S.W.	8%
Third Street S.W.	8%
Second Street S.W.	6%
Macleod Trail S.E.	4%
Third Street S.E.	4%

The requested streets for improvement were fairly evenly distributed. This suggests that the key is to provide a safe crossing of the CPR tracks which have been identified as unfriendly to cyclists in previous research. The solution may be to create improvements at the eastern and western ends of the downtown in order to serve the greatest number of cyclists.

QUESTION 10: When you commute by bicycle, do you drive part of the way?

179 or 9.6 per cent of respondents drove part of their daily commute.

QUESTION 11: What percentage of your bicycle journey takes place on-street vs. pathway?

1,854 of 1,863 respondents provided a percentage.

On-street average	45%
Off-street average	51%
On-street median	40%
Off-street median	50%

Cyclists spend a higher percentage of their journey on-street than expected. From the route data submitted, it appears that many cyclists are willing to travel out of their way to ride on a pathway. This suggests the on-street environment needs further improvement.

QUESTION 12: Where do you cycle?

1,803 of 1,863 respondents provided a surface on which they ride.

- 95%** ride on-road
- 93%** ride on pathways
- 44%** ride on the sidewalk
- 27%** ride in back lanes/alleys
- 15%** ride in parking lots
- 4%** ride in other
- 4%** ride only on-road
- 2%** ride only on pathways

A high number of Calgary cyclists are riding on the sidewalk, despite the fact that it's illegal and often more dangerous than riding on the road.

Eighty-nine per cent of respondents ride both on pathways and on-road.

1.55 per cent ride exclusively on pathways.

Despite the belief that cyclists tend to be found on pathways, the vast majority travel on both roads and pathways and only a very small number use pathways exclusively.

6.4 Seasonal cycling

QUESTION 13: On average, how many days per month do you cycle for commuting purposes, in each of the following months?

1,748 respondents of 1,863 provided information.

MONTH	MEDIAN	MEAN	MONTH	MEDIAN	MEAN
January	0	6	July	20	17
February	0	7	August	20	17
March	10	9	September	20	17
April	5	13	October	15	13
May	20	16	November	8	9
June	20	17	December	2	7

FIGURE 9 – Seasonal variation comparison 2000 to 2006 surveys

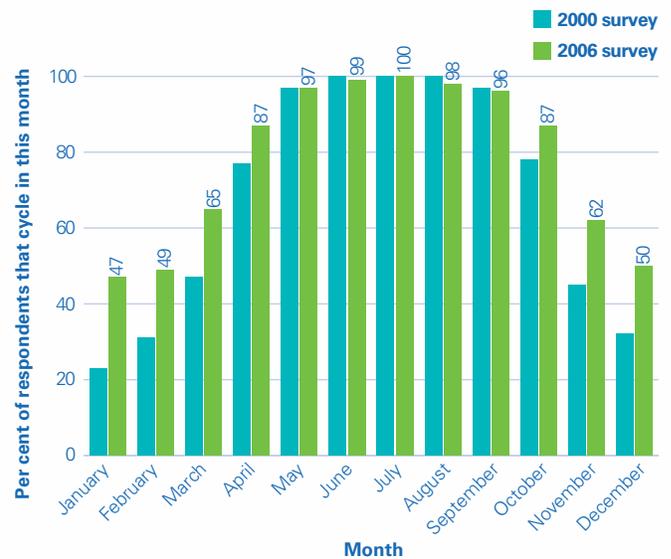
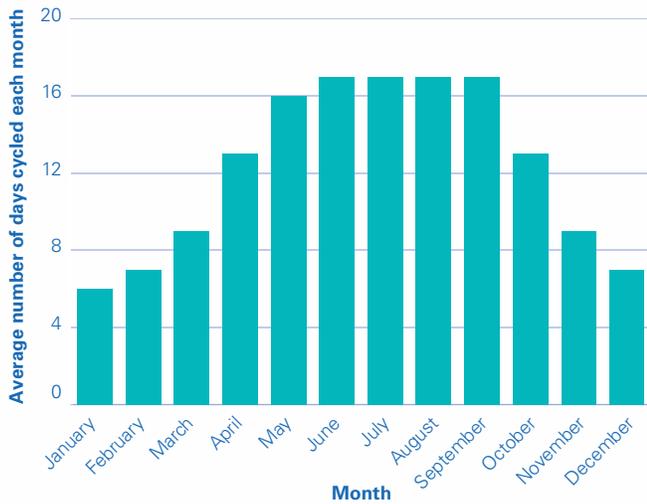


FIGURE 10 – Average number of days all survey respondents cycle each month



There is considerable variation in cycling, with less cycling occurring during the winter months. However, those who do cycle in the winter months do so quite regularly (i.e. for cyclists who indicate cycling in January, the average number of days they actually cycle is 13.5).

Also, the number of cyclists who continue to cycle in all seasons has increased since the 2000 survey. In the 2000 survey, 29 per cent of respondents reported cycling in January, whereas in this survey, over 47 per cent of respondents indicated cycling in January at least one time per month. This increase may be due to the increase in snow-clearing on pathways that has occurred between 2000 and 2006. Other possible explanations for the dramatic increase in winter cycling include a mild winter in 2005-2006 and a slightly different phrasing of the question in the 2000 Survey.

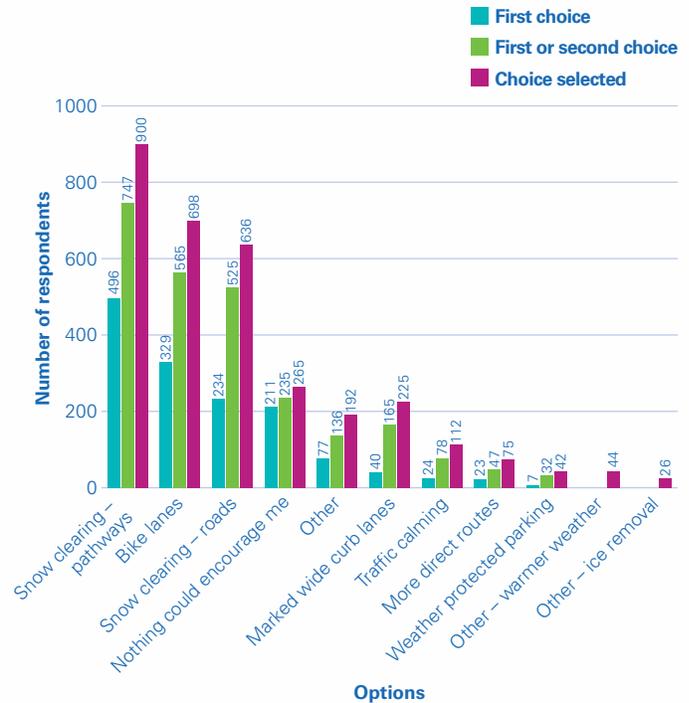
This question also allows us to report on how many days per year cyclists travel to work by bike. The average number of cycling days is 140.

Responses to this question indicate that respondents cycle nine months a year.

QUESTION 14: Please indicate the top two (2) items that would encourage you to cycle more in the winter months, using 1 to indicate the most desired improvement and 2 to indicate the second most desired improvement.

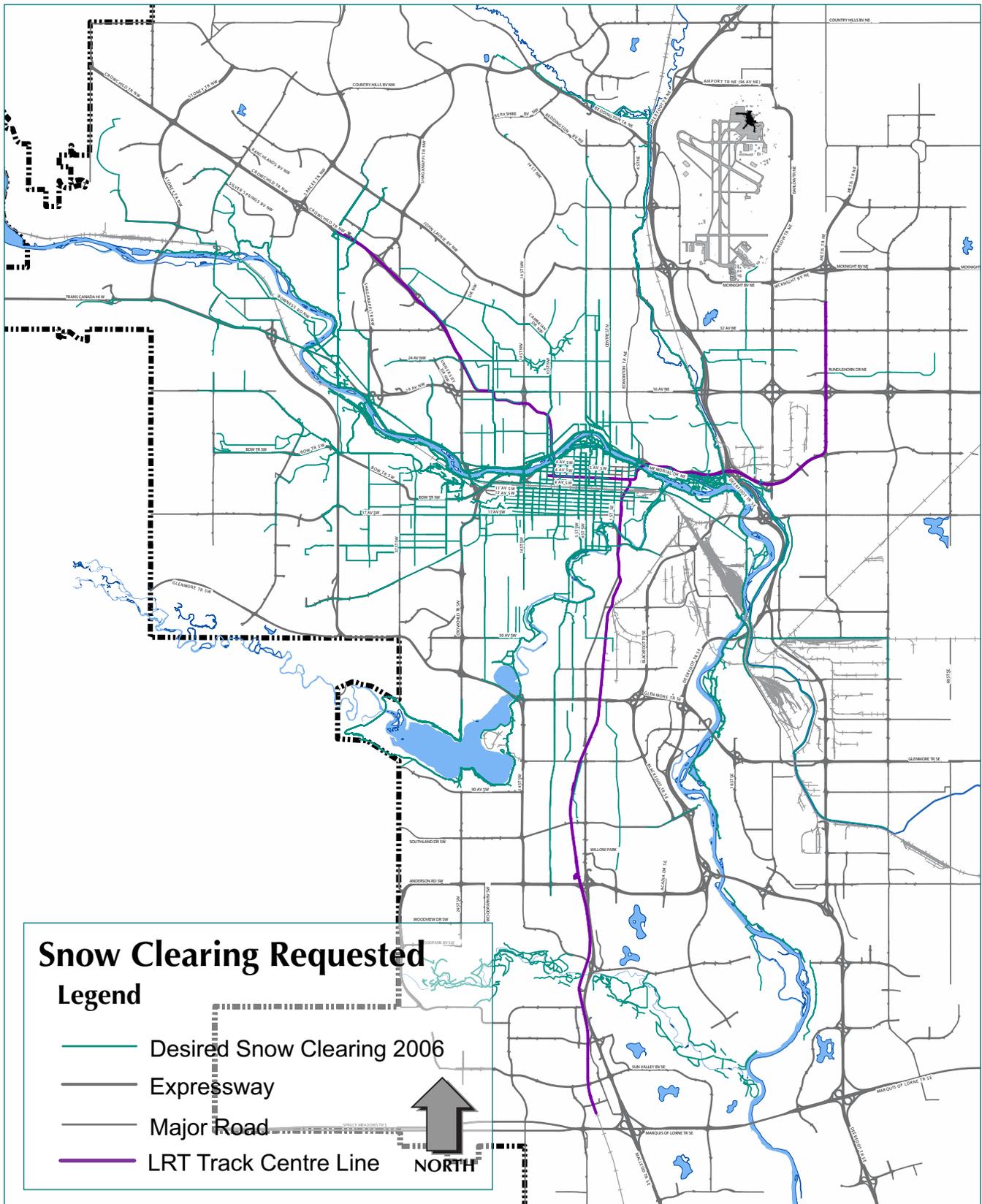
1,752 of 1,863 respondents provided information.

FIGURE 11 – Most desired improvements to encourage winter cycling by survey respondent preference



Snow clearing on roads and pathways was the most desired improvement. Very few respondents (14 per cent) indicated there was nothing that could be done to encourage them to cycle more in winter. This suggests that there is considerable potential for an increase in year-round cycling.

FIGURE 12 – Snow clearing requested



QUESTION 15: The City clears several routes of snow in winter. What two (2) bicycle routes do you feel are a priority for snow clearing along roads or pathways?

The most requested routes for snow clearing were:

- 1) The Bow River pathway
- 2) The Elbow River pathway
- 3) 53rd Avenue N.W./ Home Road N.W.
- 4) Spruce Drive and Bow River pathway cut-off
- 5) South Bow River pathway

See Figure 12 for a map of the most requested routes.

QUESTION 16: If these routes were cleared of snow, how likely is it that you would ride more in winter?

1,638 of 1,863 respondents provided information.

	Number of respondents	Percentage
Very likely	569	15%
Likely	442	27%
Unlikely	242	15%
Very unlikely	171	10%
N/A	211	13%

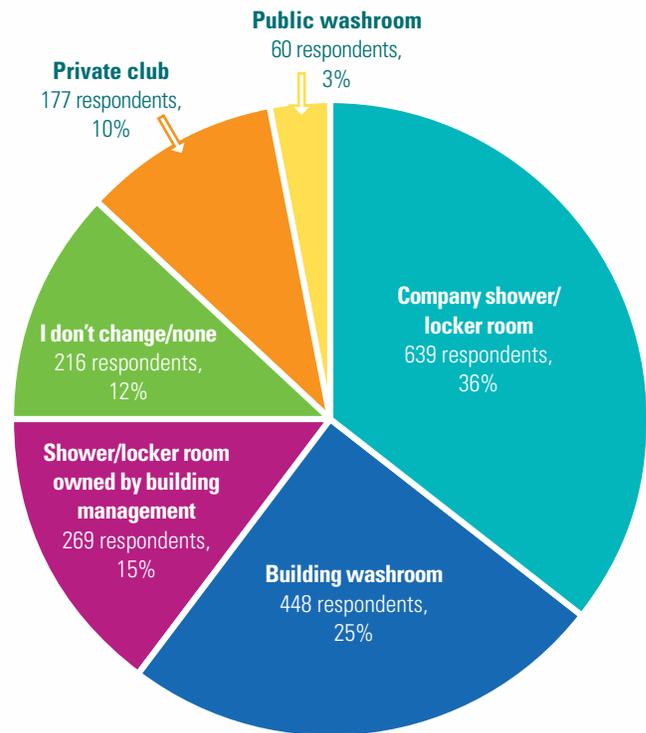
Giving a score of 1 to very unlikely and 4 to very likely, the average score is 2.98.

Along with the results from Question 14, this shows that there is considerable potential for expanded year-round cycling. Sixty-two per cent of respondents indicated they were either likely or very likely to ride more if their requested routes were cleared of snow in the winter.

6.5 Facilities

QUESTION 17: What kind of changing facility do you use at your destination?

FIGURE 13 – Cyclist changing facilities



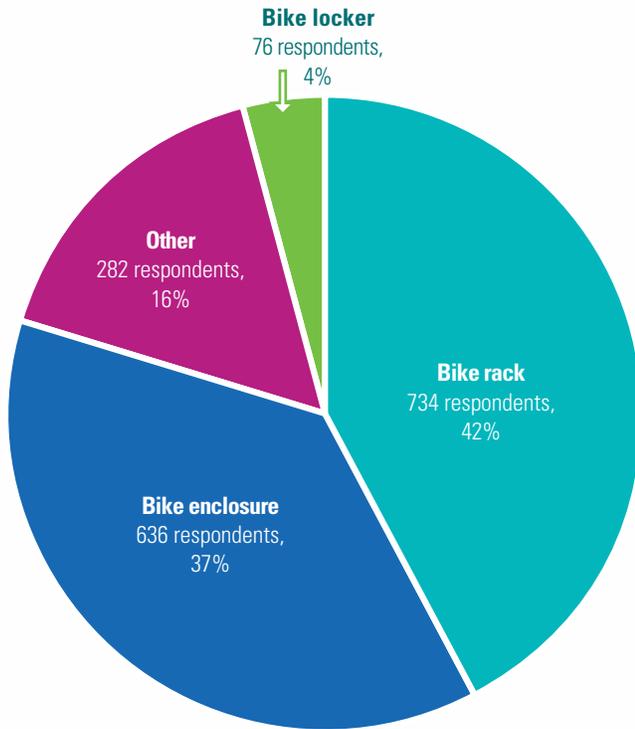
Most cyclists have access to changing facilities and a very small number (12 per cent) don't change at all.

QUESTION 18: Is there bicycle parking at your destination?

	Number of respondents	Percentage
Yes	1,647	95%
No	81	5%

QUESTION 19: If yes, what kind of parking facility do you use at your destination?

FIGURE 14 – Bicycle parking facilities used



QUESTION 20: If there were a “bike station” facility which provided enclosed bicycle parking and showering facilities, how likely is it that you would use this facility?

1,710 of 1,863 respondents provided information.

	Number of respondents	Percentage
Very likely	526	31%
Somewhat likely	284	17%
Unlikely	380	22%
Very unlikely	399	23%
Don't know	121	7%

Giving a score of 1 to very unlikely and 4 to very likely the average score is 2.5.

Forty-eight per cent of respondents would be very likely or somewhat likely to use a “bike station” facility.

QUESTION 21: Would you use the bike station’s...

1,533 of 1,863 respondents provided information.

	Numbers of respondents	Percentage
Shower and secure lockup	625	41%
Secure lockup only	337	22%
Shower only	87	6%
N/A	484	32%

QUESTION 22: What is the maximum you would be willing to pay per day for such a service?

1,530 of 1,863 respondents provided information.

Daily average	\$1.43
Daily median	\$1.00
Daily mode	\$0.00
Daily max.	\$20.00
Daily min.	\$0.00

Of those who indicated that they were likely to use the facility (in Question 20):

Daily average	\$1.95
Daily median	\$2.00
Daily mode	\$2.00

Of those who indicated that they would use both features of the facility (showering/lockers and secure parking):

Daily average	\$1.43
Daily median	\$1.00

QUESTION 23: What is the maximum you would be willing to pay per month for such a service?

1580 of 1863 respondents provided information.

Monthly average	\$20.19
Monthly median	\$15.00
Monthly mode	\$0.00
Monthly max.	\$250.00
Monthly min.	\$0.00

Of those who indicated that were likely to use the facility:

Monthly average	\$27.63
Monthly median	\$20.00
Monthly mode	\$0.00

QUESTION 24: Where do you think such a facility would best be located?

977 of 1,863 respondents provided a location.

Eau Claire was the single-most requested location with 16 per cent (153 respondents) of responses.

6.6 On-street bikeways

QUESTION 25: Are you aware of Calgary’s on-street bikeways?

	Number of respondents	Percentage
Yes	1,468	79%
No	395	21%

QUESTION 26: What is your opinion on the quality of the signed on-street bikeways?

1,449 of 1,863 respondents provided information.

Excellent	3%
Good	28%
Average	40%
Poor	22%
Very poor	7%

Giving a score of 1 for very poor and a score of 5 for excellent, the average score is 2.99.

6.7 Additional information

QUESTION 27: Have you had your bicycle stolen in the past five (5) years?

Nineteen per cent of respondents (346 cyclists) have had their bicycles stolen in the past five years.

This has not changed significantly since the 2000 survey. This number is still high showing that secure bicycle parking as well as police enforcement should continue to be expanded.

QUESTION 28: Have you had a collision while cycling in the last two (2) years?

Twenty-four per cent of respondents (451 cyclists) have had a collision in the last two years. This represents a small decrease in accidents from the 2000 survey when 27 per cent reported having had an accident.

QUESTION 29: If yes, were you injured?

Eleven per cent of respondents (196 cyclists) were injured in an accident in the last two years. In the 2000 survey, 14 per cent of cyclists reported having been involved in an injury accident.

QUESTION 30: If in a collision, with what did you collide?

	Number of respondents	Percentage
Motorist	234	46%
Cyclist	67	13%
Stationary object	50	10%
Pedestrian	41	8%
In-line skater	16	3%
Other – dog	17	3%
Other	103	20%
Total	528	

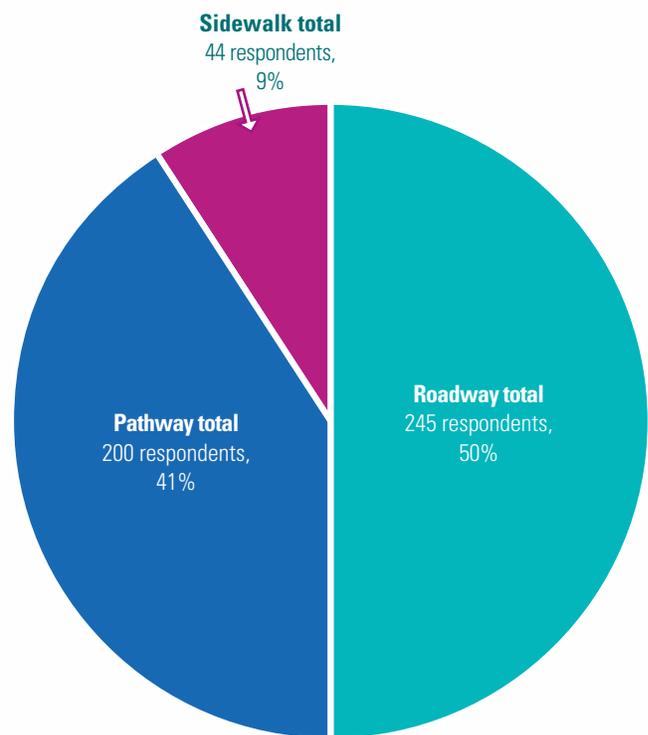
QUESTION 31: What caused the collision (most frequent cause)?

	Number of respondents	Percentage
Motorist inattention	160	26%
I was cut-off	117	19%
In-line/ped./cyclist inattention	67	11%
My own fault	51	8%
Poor pathway conditions	49	8%
Poor road conditions	39	6%
Weather	30	5%
Other – hit by car door	34	5%
Debris	14	2%
Other – dog	14	2%
Other – ice	10	2%
Other	96	15%

QUESTION 32: Where did the collision take place?

Location of collision	Number of respondents	Percentage
Pathway	166	34%
Road	129	26%
Road intersection	116	24%
Pathway/road intersection	34	7%
Sidewalk/road intersection	29	6%
Sidewalk	15	3%
Other	2	–

FIGURE 15 – Frequency of collisions by location



QUESTION 33: Have you had formal training on bicycle skills and the rules of the road?

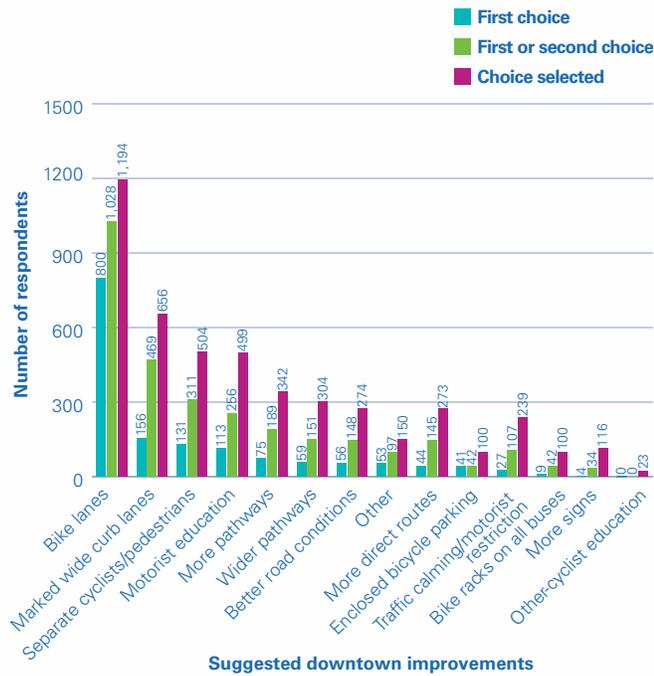
Twenty-five per cent of responding cyclists have had formal training. That's up from the 2000 survey when only 18 per cent of respondents reported having been formally trained. This may have had an effect on the lower accident rates in totals of 2006 compared with 2000.

QUESTION 34: Please rank the top three (3) improvements that could be implemented to better assist you while cycling in and outside the downtown core.

1,763 of 1,863 respondents provided information on improvements downtown.

1,568 of 1,863 respondents provided information on improvements outside of downtown.

FIGURE 16 – Most desired downtown improvements by survey respondent preference.



As in the 2000 survey, the most desired improvement is bicycle lanes, especially for the downtown where it was selected almost twice as often as any other option.

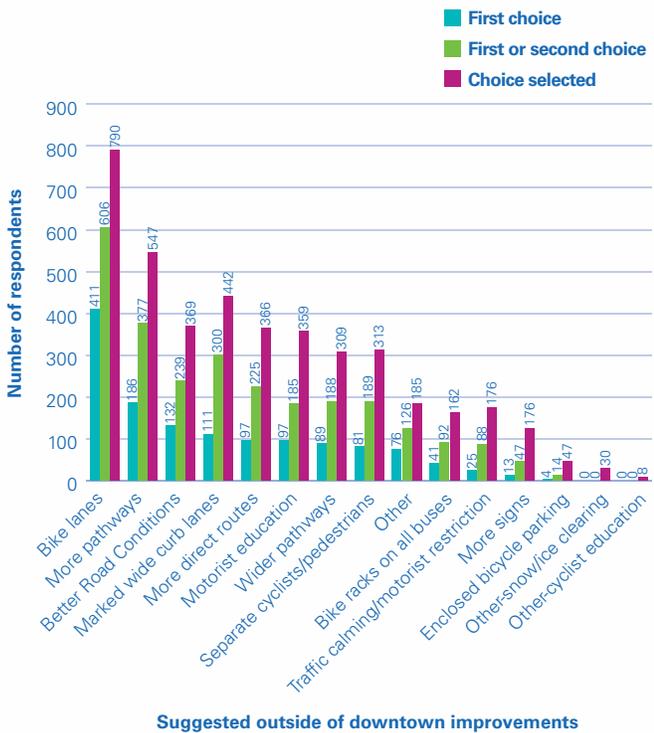
6.8 Demographics

GENDER

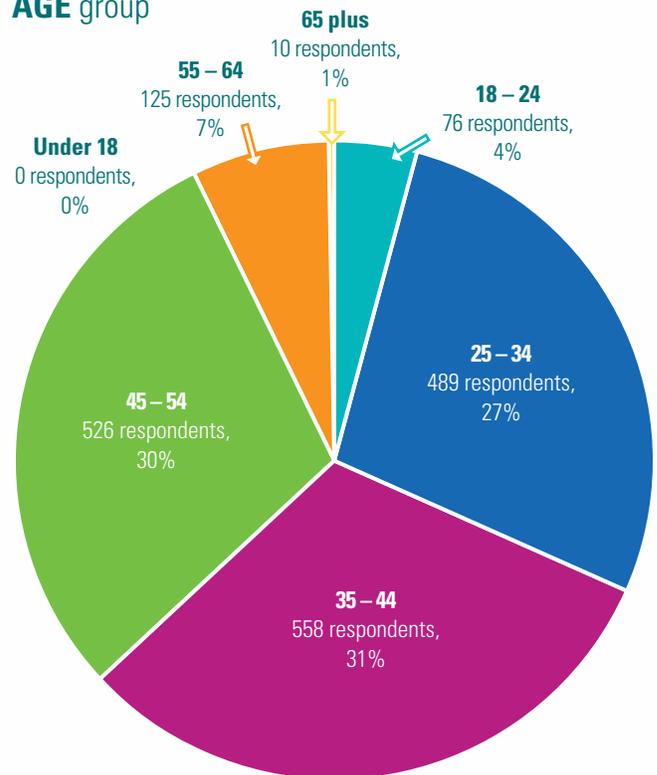
	Number of respondents	Percentage
Male	1,337	79%
Female	434	24%
Total	1,771	

The fact that there are three times as many male cyclists in Calgary than female diverges somewhat from findings in other Canadian cities. For example, in Toronto's 2000 survey, 63 per cent of cyclists were found to be male. In some European cities, such as Copenhagen, women cycle more than men.

FIGURE 17 – Most desired improvements outside of downtown by survey respondent preference.



AGE group



More than half the respondents were over the age of 35. However, younger Calgarians may be unrepresented in this survey due to the fact that most people employed in the downtown are over 35 years of age.

ANNUAL personal income

	Number of respondents	Percentage
Less than \$30,000	67	4%
\$30,000 to less than \$45,000	141	8%
\$45,000 to less than \$60,000	240	14%
\$60,000 to less than \$75,000	239	14%
\$75,000 to less than \$90,000	230	14%
\$90,000 and over	745	45%

Total 1,662

In the 2000 survey, it was reported that the majority of respondents earned over \$60,000 a year. However, it was not specified if the income was personal or household and there was no higher option than \$60,000 a year. In this survey the question asked for personal income and the options allowed respondents to enter higher income ranges. Forty-five per cent of respondents reported being in the highest income range.

7.0 Observations and analysis

7.1 Typical cyclist

TYPICAL CYCLISTS entering downtown Calgary on a weekday morning are middle-aged males who earn more than \$90,000 a year. They cycle nine months a year (up from seven months a year in 2000) and take 28 minutes to cycle 10 kilometres. They have cars at home but choose to cycle for exercise. They have not had formal bicycle training. They spend approximately 40 per cent of their cycling time on-road and request on-road improvements throughout the city, but particularly downtown.

7.2 Differences by gender

FAR FEWER WOMEN than men responded to this survey. The percentage of female respondents is also low compared with results in other cities.



8.0 Recommendations

Several specific observations led to the following recommendations, some of which include conducting further research, while others specify concrete actions.

Observation 1: cyclists suggested more improvements for downtown than for outside downtown. A total of 4,774 improvements were suggested for downtown compared with 4,224 improvements for outside downtown. Most of the suggested improvements for downtown centered around on-street facilities such as bike lanes and wide curb lanes. We also know from previous research and from the 2000 survey that downtown conditions are generally not hospitable to cyclists.

RECOMMENDATION 1: improve downtown conditions for cyclists. Possible sites for on-street infrastructure include 10th Avenue S.W., Second Avenue S.W., 11th Street S.W. and First Street S.W.

Tenth Avenue South has been identified in the Beltline ARP as appropriate for bike lanes. It was also the most requested route for improvement. Second Avenue S.W. is well used by cyclists and has been recommended for improvement in previous research.

Comfortable CPR track crossings are needed for cyclists entering downtown from the south. Eleventh Street S.W. has been identified as easy to retrofit since it crosses the CPR tracks at grade. A crossing on the east side of downtown is also needed. First Street S.W. was the most requested street for improvements.

This follows from Recommendation #18 of the 1996 Calgary Cycle Plan that, “by July 1999, the Transportation Department develop a network of routes which facilitate bike and pedestrian movement within the Downtown Central Business District.”

Observation 2: cyclists spend an average of 40 per cent of their time on-road and the majority of suggested improvements, both outside and inside of downtown, centered around on-street infrastructure. Less than two per cent of cyclists ride exclusively on pathways. Moreover, during the 2000 survey, 87 per cent of observed cyclists were off-road whereas in the 2006 survey, 74 per cent were off-road. This suggests that on-road cycling may be increasing.

RECOMMENDATION 2: improve on-street facilities both inside and outside downtown, using bike lanes, wide curb lanes, bicycle boulevards and traffic-calming measures where appropriate.

This recommendation follows from recommendation #44 of the Calgary Bikeway and Pathway Plan that, “a bike and pedestrian facilities retrofit program be established as part of the Engineering & Environmental Services Department, Streets Division, capital budget.”

Observation 3: seventy-five per cent of Calgary’s downtown cyclists are male. This contrasts with other Canadian cities such as Toronto and Ottawa where survey results indicate about 63 per cent of cyclists are male.

RECOMMENDATION 3: conduct further research into the female cyclist demographic. Two options are to conduct telephone surveys to get an overall view of the demographics of cyclists in the entire city, as opposed to simply downtown cyclists, or to conduct focus groups of female cyclists to determine their specific needs and criticisms of the current system.

Observation 4: the vast majority of respondents to the 2006 survey were over 35 years of age. Only a very small number were under 24. This is likely due to the fact that the survey was conducted to capture cyclists commuting to work in the morning. However, younger cyclists are likely a more prevalent group city wide, and may have different views regarding the improvement of infrastructure.

RECOMMENDATION 4: complete a survey of younger cyclists. Post-secondary students are known to be frequent cyclists and thus a survey of students at the University of Calgary, SAIT, ACAD and Mount Royal College should be considered. Due to the fact that postsecondary students are likely to be comfortable with computers, this survey could be conducted online for ease of completion and in order to minimize costs.

Observation 5: there seems to be high demand for a bike station facility. The majority of respondents indicated that they were either somewhat likely, likely or very likely to use such a facility. Moreover, many respondents indicated they have access to either secure parking or showering/ changing facilities. The statistical results from the survey, as well as previous research suggest that more people would consider bicycling if such facilities were provided to them. Providing such a facility may encourage those not currently commuting by bicycle to try it as a commuting option.

RECOMMENDATION 5: The City of Calgary should expand secure parking facilities and investigate the feasibility of publicly-accessible changeroom and shower facilities. These may manifest themselves in the construction of a “bike station” facility to be located at Eau Claire Market. Chicago’s Millennium Park Bike Station could be used as a model.



Appendix A – The Survey

2006 Downtown Commuter Cyclist Survey

We need your input!

The City of Calgary needs your help! Our goal is to improve pathway and bicycle routes throughout the city and increase the quality and quantity of facilities which support non-motorized travel. Nobody knows how to do this better than you, the cyclist. The City conducted a survey in 2000 that proved to be a valuable resource for Alternative Transportation Planning in Calgary. As a result, many new pathways and on-street bikeways were constructed and improvements to existing on-street routes are planned for 2006 and beyond. This questionnaire is part of a Calgary wide bicycle route study now underway.

Please take the time to fill out this survey and have your voice heard!

TELL US ABOUT YOUR DAILY JOURNEY

1. Are you commuting to work today? yes no
2. Where did you start your journey (community)? _____
3. Where are you going (address)? _____
4. What is the distance and/or time of your one-way journey? _____ km _____ min
5. Do you have access to a car that you could have used for this journey? yes no
6. Thinking of your average weekly commute, how many days a week do you travel to work by:
cycling _____
walking _____ in-line skating _____
carpooling _____ taking transit _____
driving alone _____ other (please specify) _____
7. What are your most important reasons for cycling to work? Please rank your top four (4) reasons 1 to 4, where 1 represents the most important reason
exercise _____ less stressful _____
environmental benefit _____ fun/enjoyment _____
cheaper _____ faster _____
reduce traffic _____ other _____

MAPPING YOUR ROUTE

Attached to this survey are five (5) maps - Downtown/Beltline, Northeast, Southeast, Southwest and Northwest Calgary. On these maps please indicate:

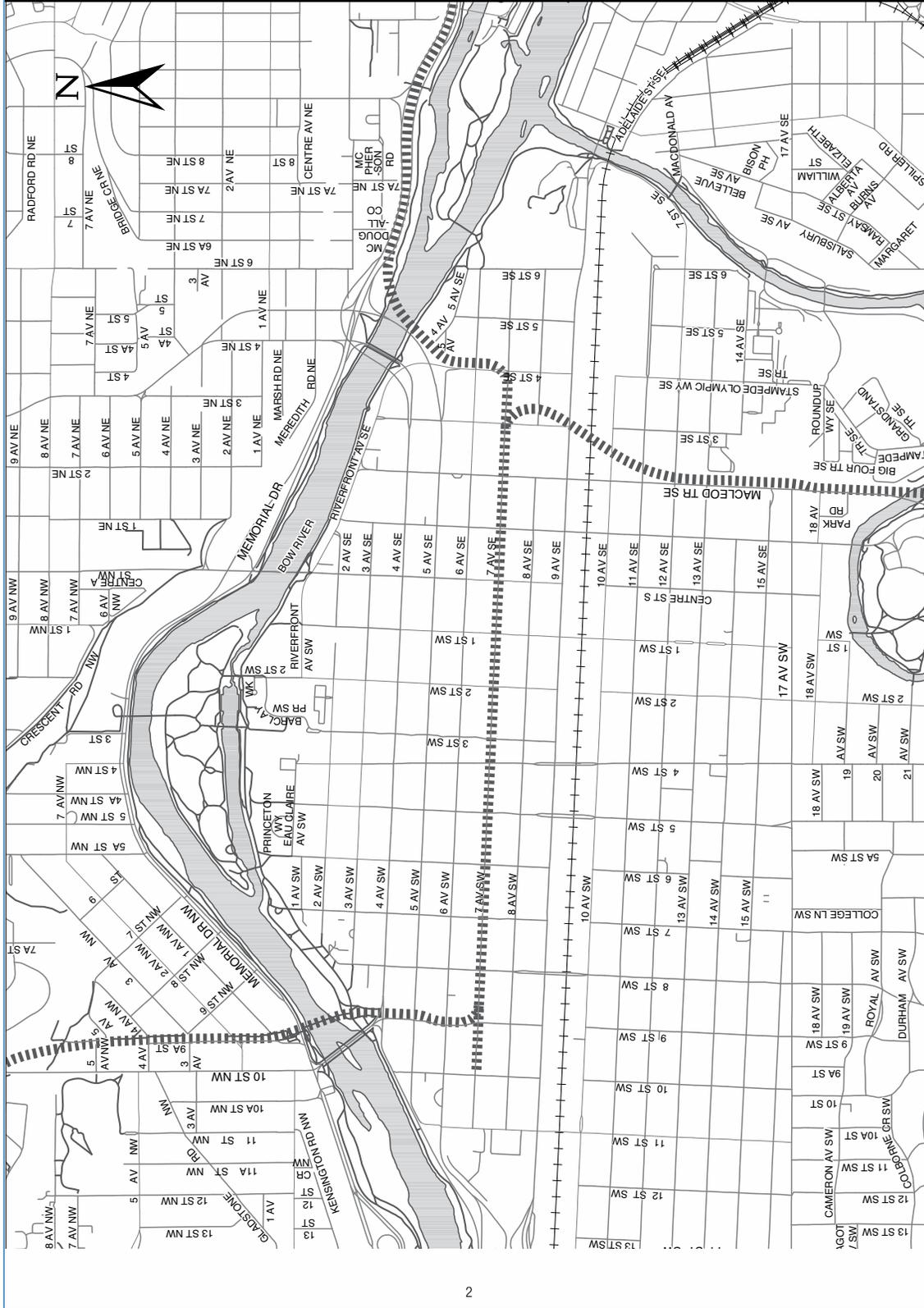
- Your **usual downtown route** on the **Downtown/Beltline map**. In addition, please circle any locations where you have safety concerns.
- Your usual route(s) to and from downtown on the **Northeast, Northwest, Southeast and Southwest maps**. In addition, please circle any locations where you have safety concerns.

www.calgary.ca/careers call 3-1-1



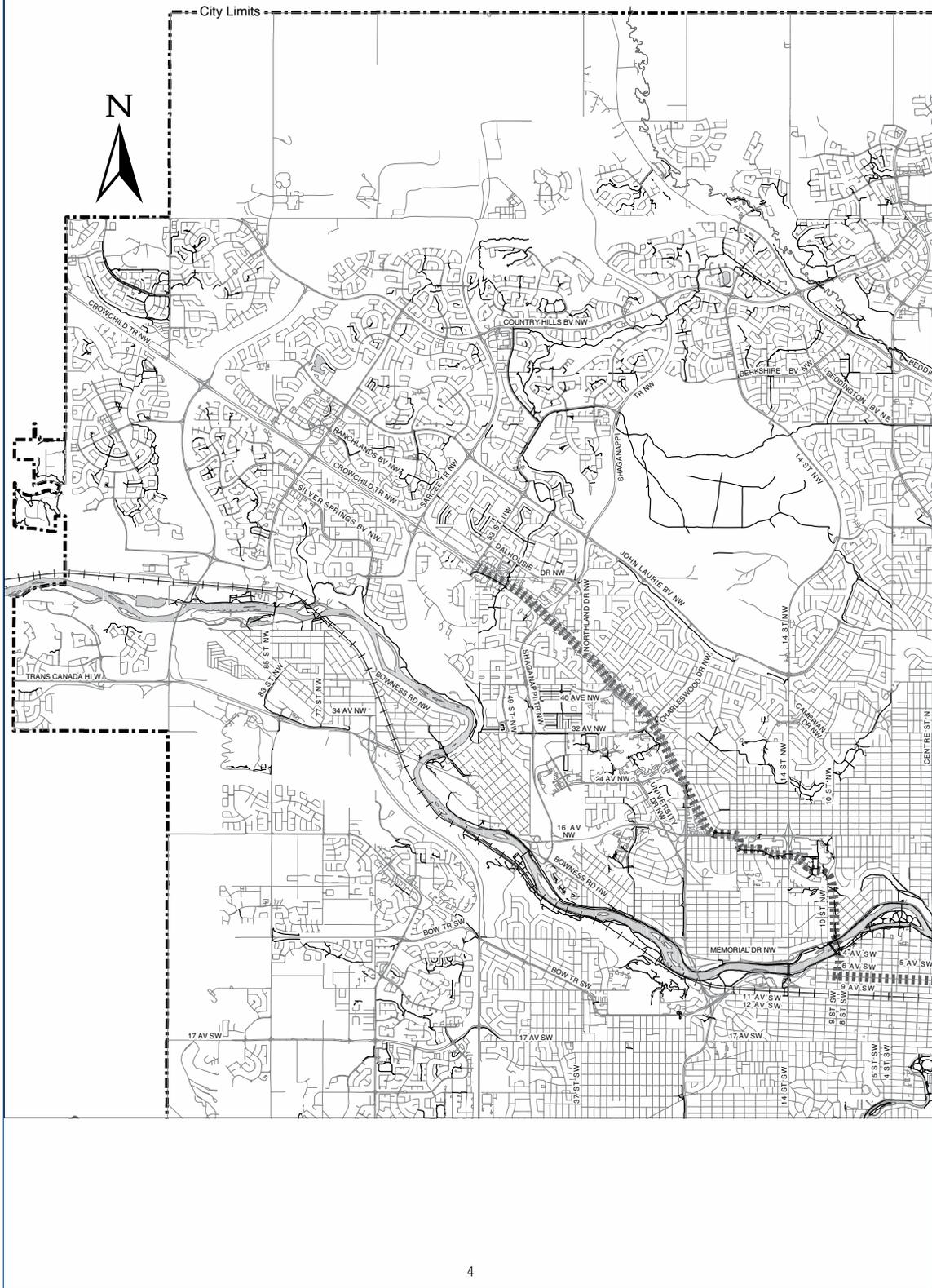
S.W./Downtown

Show us your ROUTE



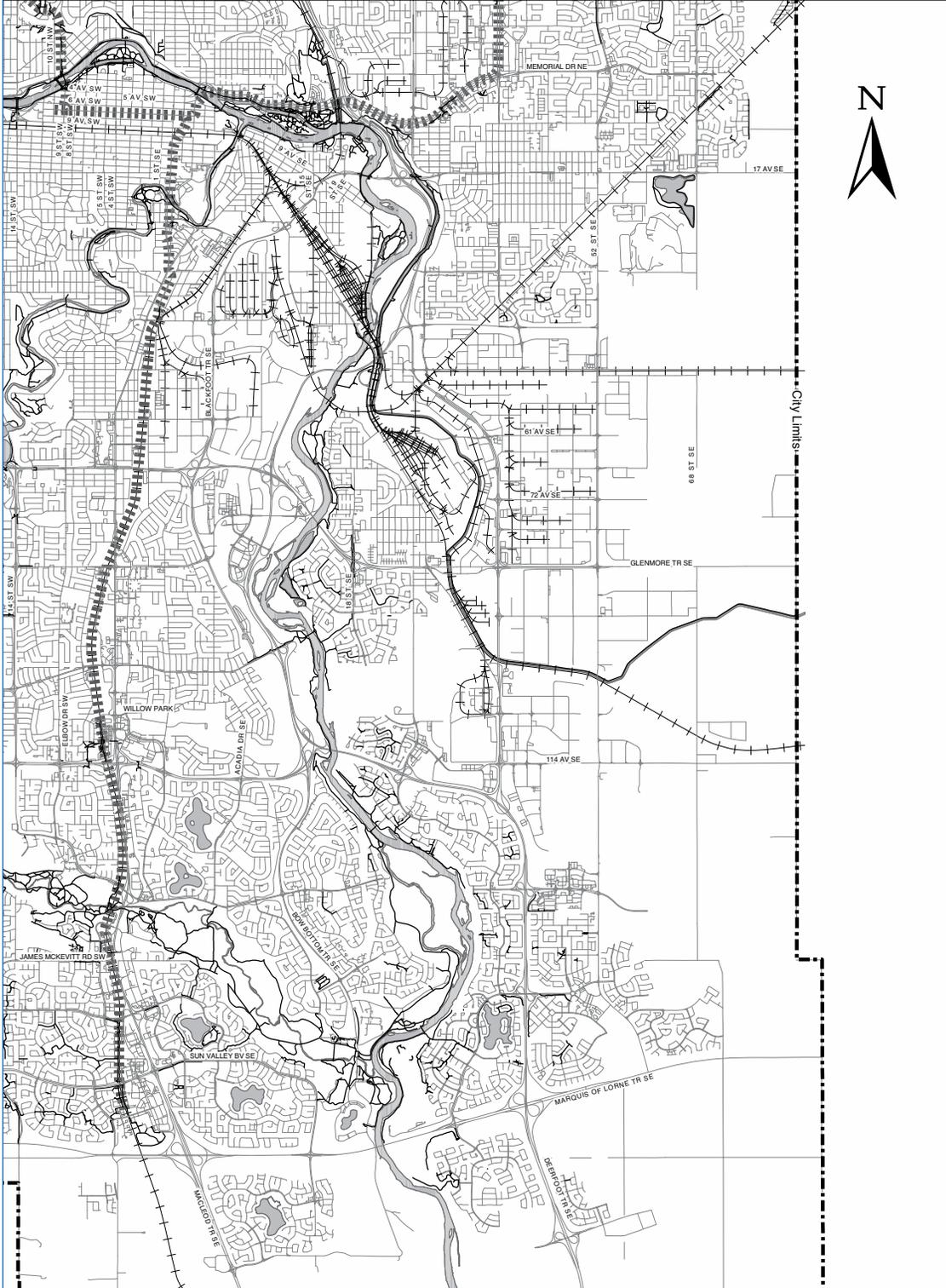
Northwest

Show us your ROUTE



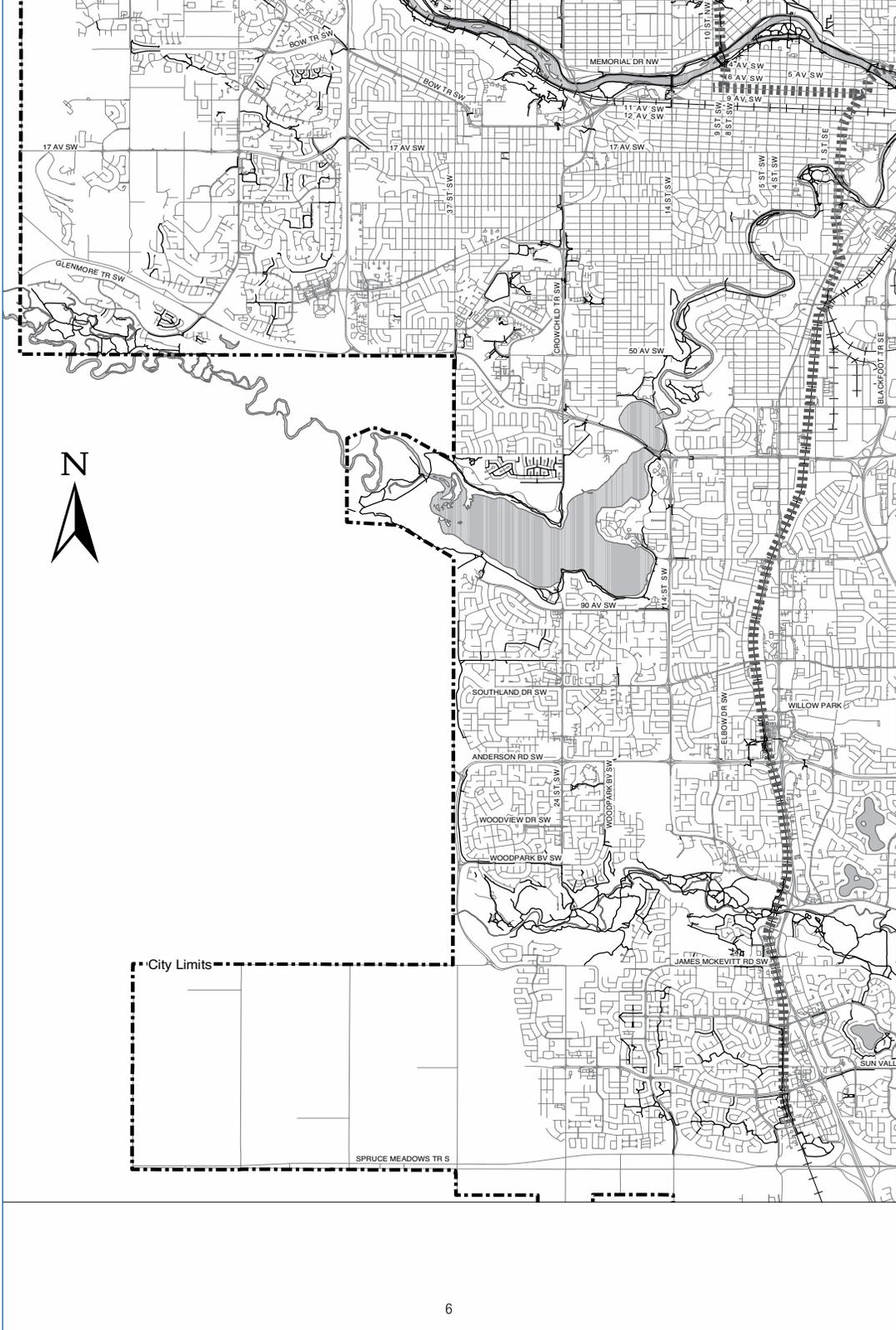
Southeast

Show us your ROUTE



Southwest

Show us your ROUTE



TELL US ABOUT YOUR ROUTE(S)

8. Which east/west route in Downtown/Beltline would you like to see improved? _____

9. Which north/south route in Downtown/Beltline would you like to see improved? _____

10. When you commute by bicycle do you drive part of the way? yes no

11. What percentage of your bicycle journey takes place:

on-street ___% vs. pathway ___%

12. Where do you cycle? (check all surfaces that you ride on)

sidewalks pathways roads back lanes/alleys parking lots other _____

SEASONAL CYCLING

13. On average, how many days per month do you cycle for commuting purposes, in each of the following months?

Jan ___ Feb ___ Mar ___ Apr ___ May ___ June ___

Jul ___ Aug ___ Sep ___ Oct ___ Nov ___ Dec ___

14. Please indicate the top two (2) items that would encourage you to cycle more in the winter months, using 1 to indicate the most desired improvement and 2 to indicate the second most desired improvement.

- | | |
|---|--|
| ___ snow clearing on roads | ___ weather protected parking |
| ___ snow clearing on pathways | ___ marked wide curb lanes |
| ___ bike lanes | ___ more direct routes |
| ___ traffic calming/motorist restrictions | ___ nothing would encourage me to cycle more in winter |
| ___ less gravel on road | ___ other _____ |

15. The City clears several routes of snow in winter. What two (2) bicycle routes do you feel are a priority for snow clearing along roads or pathways?

1) _____

2) _____

16. If these routes were cleared of snow, how likely is it that you would ride more in winter?
(circle the answer that best applies)

very unlikely unlikely likely very likely not applicable

FACILITIES

17. What kind of changing facility do you use at your destination?
(check only the one you use most frequently)

- private club company shower/locker room
shower/locker room
provided by building management public washroom
building washroom
don't change/none

18. Is there bicycle parking at your destination? yes no

19. If yes, what kind of parking facility do you use at your destination?

bike enclosure/cage bike locker bike rack other _____ (please specify)

20. If there were a 'bike station' facility which provided enclosed bicycle parking and showering facilities, how likely is it that you would use this facility? (circle the answer that best applies)

very unlikely unlikely somewhat likely very likely don't know

21. Would you use the bike station's

showering/locker facilities secure parking both n/a

22. What is the maximum you would be willing to pay per **day** for such a service? \$ _____

23. What is the maximum you would be willing to pay per **month** for such a service? \$ _____

24. Where do you think such a facility would best be located? _____

ON-STREET BIKEWAYS

25. Are you aware of Calgary's on-street bikeways? (The bikeways are indicated by signs and are shown in Calgary's Pathway and Bikeway Map).

yes no (If no, skip to question 27)

26. What is your opinion on the quality of the signed on-street bikeways? (check the answer that best applies)

very poor poor average good excellent

Comments? _____

ADDITIONAL INFORMATION

27. Have you had a bicycle stolen in the last five (5) years? yes no
28. Have you had a collision while cycling in the last two (2) years? yes no
29. If yes, were you injured? yes no
30. If in a collision, what did you collide with?
 motor vehicle pedestrian cyclist
 in-line skater stationary object other _____ (please specify)
31. What caused the collision? (most frequent cause)
 motorist inattention in-line/pedestrian/other cyclist inattention my own inattention
 I was cut off debris poor pathway conditions
 poor road conditions I was hit by a door weather conditions
 other _____ (please describe)
32. Where did the collision take place?
 path/road intersection road intersection sidewalk/road intersection
 pathway road sidewalk
33. Have you had formal training on bicycle skills and the rules of the road? yes no
34. Please rank the top three (3) improvements that could be implemented to better assist you while cycling in the **downtown core**, and **outside of the downtown core**.
 (1= most desired, 2 = second most desired and 3 = third most desired.)

Improvement	Downtown	Outside of downtown
Better road conditions		
Bike lanes		
Bike racks on all buses		
Enclosed bicycle parking		
Marked wide curb lanes		
More direct cycling routes		
More pathways		
More signs		
Motorist education		
Separate cyclists and pedestrians		
Traffic calming/motorist restrictions		
Wider pathways		
Other (please specify) _____		
Other (please specify) _____		

35. Comments: (please attach additional sheets if needed)

PLEASE TELL US ABOUT YOURSELF

Gender: male female

Age group

under 18

18-24

25-34

35-44

45-54

55-64

65+

Annual personal income

less than \$30,000

\$30,000 to less than \$45,000

\$45,000 to less than \$60,000

\$60,000 to less than \$75,000

\$75,000 to less than \$90,000

\$90,000 and over

In order to know how to classify your responses, can you please provide us with your postal code? _____

What community do you live in? _____

Please return this survey in the postage-paid envelope provided by July 25, 2006

If you have any questions or comments about this survey please email Demian Rueter at demian.rueter@calgary.ca

Or reach us by telephone at 268-3748 or by fax at 268-1874

Canadian Cycling Association CAN-BIKE Skills Course

The next course is offered on Saturday, Sept. 16 and Sunday, Sept. 17 from 9:00 a.m. to 6:00 p.m for a fee of \$110.00

There are three easy ways to register:

BY PHONE 268-3800 TTY 268-3825
The City of Calgary Central Registration,
Hours: Monday to Friday 8:30 a.m. to 7:00 p.m.,
Saturday 9:00 a.m. to 3:00 p.m.

IN PERSON Recreation North Tower, 2808 Spiller Rd. S.E.,
Hours: Monday to Friday 8:30 a.m. to 4:00 p.m.

ONLINE www.calgary.ca/recreation

The personal information on this survey is collected under the authority of the Freedom of Information and Protection of Privacy Act, Section 33(c). If you have any questions regarding the collection of this information please contact the Bicycle and Pedestrian Planning Assistant, Planning and Transportation Policy, PO Box 2100 Stn. M, Calgary, AB T2P 2M5. Telephone 268-3748.

Appendix B – Number of cyclists entering Downtown 2000 and 2006 (6:30 – 9:30 a.m. weekdays)

LOCATION DESCRIPTION	2006 SURVEY DATE	2000 CYCLISTS INBOUND	2006 CYCLIST INBOUND	2006 CYCLISTS TOTAL	% CHANGE INBOUND CYCLISTS	2006 SURVEYS DISTRIBUTED	2006 SURVEYS RETURNED	RESPONSE RATE BY LOCATION
Bow River and 11th St.	July 4	822	985	1030	20%	571	590	103%
Bow River LRT Bridge	July 5	350	442	557	59%	845	420	50%
Louise Riley Bridge	June 27	57	61	71	7%	55	36	65%
Prince's Island Bridge *	July 6	294	212	222	-28%	159	92	58%
Langevin Bridge	July 13	164	121	164	-26%	106	59	56%
Fort Calgary 9th St. Bridge	July 18	158	192	270	22%	165	107	65%
MacLeod Tr. and CPR tracks	July 19	6	30	44	500%	2	1	50%
1st St. S.E. and CPR tracks	July 12	-	16	47	-	54	0	0%
1st St. S.W. and CPR tracks	July 11	133	106	142	-20%	57	35	61%
4th St. S.W. at CPR tracks	July 20	217	190	192	-12%	76	25	33%
5th St. S.W. at CPR tracks	June 27	57	86	104	50%	46	65	141%
8th St. S.W. and 10 Ave	July 11	117	52	154	-56%	42	0	0%
11th St. S.W. and CPR tracks	June 27	63	67	127	6%	76	49	64%
GC King Bridge	July 19	55	70	93	27%	46	29	63%
12th Ave. and 2nd St. S.W.	July 18	-	141		-	76	49	64%
Centre Street Bridge **	June 29	68	123	131	80%	50	40	80%
15th Ave. and 7th St. S.W. ***	July 29	-	?	15	-	12	0	0%
14th Ave. and 11th St. S.W. ***	July 12	-	?	62	-	23	11	48%
13th Ave. and 8th St. S.W. ***	July 13	-	?	35	-	7	5	71
2nd Stt at 19th Ave. S.W.	June 29	-	158	163	-	126	65	52%
Mailout surveys						181	160	88%

* Prince's Island Bridge under construction at time of survey.

** Large increase in cyclist flows may be due to Prince's Island Bridge construction.

*** Inbound and outbound cyclists not separated.

Appendix C – Cyclist on-street and off-street comparison (6:30 – 9:30 a.m. weekdays)

LOCATION DESCRIPTION	DATE (2006)	# OF CYCLISTS (2000)	# OFF-STREET (2000)	% OFF-STREET (2000)	# OF CYCLISTS (2006)	# OFF-STREET (2006)	% OFF-STREET (2006)
Louise Riley Bridge	June 27	57	29	51%	71	34	48%
5th St. and 9th Ave. S.W.	June 27	57	57	100%	104	60	58%
11th St. and 9th Ave. S.W.	June 27	63	?	?	127	47	37%
2nd St. S.W. at 19th Ave. S.W.	June 29	-	-	-	163	5	3%
Centre Street Bridge N.W. side	June 29	68	?	?	131	67	51%
Bow River Pathway and 11th St.	July 4	822	822	100%	1031	1031	100%
Bow River Pathway and LRT Bridge	July 5	350	350	100%	442	442	100%
Prince's Island Bridge	July 6	294	294	100%	222	222	100%
8th St. and 10th Ave. S.W.	July 11	117	40	34%	154	33	21%
9th Ave. and 1st St. S.W.	July 11	133	29	22%	142	14	10%
9th Ave. and 1st St. S.E.	July 12	?	?	?	47	29	62%
15th Ave. and 7th St. S.W.	July 12	-	-	-	62	4	6%
14th Ave. and 11th St. S.W.	July 13	-	-	-	35	3	9%
Langevin Bridge	July 13	164	152	93%	164	120	73%
Fort Calgary 9th St. Bridge	July 18	158	?	?	270	?	
14th Ave. and 8th St. S.W.	July 19	-	-	-	15	3	20%
GC King Bridge	July 19	55	55	100%	93	93	100%
4th St. S.W. and 10th Ave. S.W.	July 20	217	28		194	?	
Macleod Tr. and 10th Ave. S.E.	July 19	29	13	45%	44	37	84%
Totals		2295	1869	81%	3047	2244	74%

Highlighted results indicate a good quality on-street environment with high levels of on-street cycling (low traffic volumes and or bicycle-specific infrastructure).

Appendix D – Comparison of results

QUESTION	2000 SURVEY	2006 SURVEY
Surveys distributed	2470	2775
Surveys returned	1434	1883
Response rate	58%	68%
Cyclists entering downtown	2913	3234
% males	76%	75%
% females	24%	25%
% earning over \$60,000 a year**	56%	73%
% over age of 35	65%	66%
Average one-way distance	11 km	10 km
Average one way time	27 minutes	28 minutes
Average speed	23.6 km/h	23.4 km/h
% had access to a car	87%	87%
% cycle in January*	29%	47%
% cycle in February*	31%	49%
% cycle in March*	47%	65%
% cycle in April*	77%	87%
% cycle in May*	97%	97%
% cycle in June*	100%	99%
% cycle in July*	100%	99%
% cycle in August*	100%	98%
% cycle in September*	97%	96%
% cycle in October*	78%	87%
% cycle in November*	45%	62%
% cycle in December*	32%	50%
% exercise number one reason for cycling	55%	60%
% fun checked or marked as a reason for cycling	16%	17%
% less stressful checked or marked as a reason for cycling	16%	17%
% cheaper checked or marked as a reason for cycling	14%	18%
% faster checked or marked as a reason for cycling	14%	9%
% environmental benefit checked or marked as a reason for cycling	11%	16%
% reduce traffic checked or marked as a reason for cycling	6%	3%
% have parking at their final destination	92%	95%
% had a bicycle stolen	19%	19%
% had a collision	27%	24%
% were injured in a collision	14%	10%
% have formal training in bicycle skills and rules of the road	18%	25%
% suggest bike lanes as top suggestion downtown	52%	51%
% suggest bike lanes as top suggestion outside downtown	23%	30%

* Question phrased somewhat differently in 2000 survey.

** Numbers not adjusted for inflation.

Appendix E – Glossary of terms

AVERAGE. A single value that is meant to typify a list of values calculated by dividing the sum of values by the number of values.

BICYCLE BOULEVARD. A technique used to make a street more conducive to cycling. Common features of bicycle boulevards include priority access for bicycles and traffic calming techniques to reduce vehicle volume and speed.

BIKE ENCLOSURE. A bicycle storage facility comprised of an enclosure, usually a chain-link fence, with bike racks inside and an access-controlled door. Suitable for all-day parking, a bike enclosure may be outdoors or in a parkade.

BIKE LOCKER. An opaque bike facility with a locking door where bicycles are stored in individual spaces and hidden from view. Favoured by those with expensive bicycles, bike lockers are suitable for half- or full-day storage and can now be found at nine LRT stations in Calgary.

BIKE RACK. Any device designed specifically for bicycles to be locked to it. Includes inverted ‘U’ ribbon, and ‘A’ frame (undesirable wheel bender) racks. Bike racks are the least expensive bike storage option and the least secure. They are suitable for short- or long-term bicycle parking.

BIKE STATION. A facility designed for bicycle commuters. Minimum requirement is enclosed bicycle parking. Other features may include shower facilities, cafés, community centres and bicycle repair shops.

BIKEWAY. An on-street facility for bicycles. Examples include a bicycle lane, signed bicycle route, wide curb lane and marked wide curb lane.

- **BICYCLE LANE:** extra lane for bicycles, 1.5 m to 1.8 m wide and identified by lane marking, signs and on-road symbols.

- **SIGNED BICYCLE ROUTE:** on lower volume, lower speed roads, identified by signs only.

- **WIDE CURB LANE:** extra wide (4.0 – 4.5 m), on-street, right side lane, identified by signs that give motorists and cyclists enough width to travel side-by-side.

- **MARKED WIDE CURB LANE:** same as above, with on-road markings.

COMMUNITY. Residential area usually defined by subdivision plans when a residential area is constructed.

CORDON. Imaginary boundary, usually defined by natural barriers such as rivers or man-made barriers such as rail lines, across which all traffic must cross. Cordons are established so traffic counts can be recorded in a consistent manner over time, and changes to traffic patterns identified.

MEDIAN. A number dividing the higher half of a sample or a population from the lower half. It is often associated with the word “average” but indicates a better representation of the word average in a skewed distribution (one with abnormally large or small values).

MODE. The most frequent value assumed by a random variable or occurring in a sampling of a random variable. Like the median, the mode is useful in a skewed distribution.

PATHWAY. Off-street path, usually asphalt, used by walkers, runners, cyclists, persons with disabilities, in-line skaters, skateboarders and others. Pathways vary from 2.5 m – 7 m wide and are often located in a park, along a river or next to a road.