



**PUBLIC AGENDA
STANDING POLICY COMMITTEE
ON TRANSPORTATION**

Monday, November 6, 2017, 2:00 p.m.

Council Chamber, City Hall

Committee Members:

Councillor R. Donauer, Chair, Councillor Z. Jeffries, Vice-Chair, Councillor C. Block, Councillor S. Gersher, Councillor A. Iwanchuk, His Worship Mayor C. Clark (Ex-Officio)

Pages

1. CALL TO ORDER

2. CONFIRMATION OF AGENDA

Recommendation

That the agenda be approved as presented.

3. DECLARATION OF CONFLICT OF INTEREST

4. ADOPTION OF MINUTES

Recommendation

That the minutes of regular meeting of the Standing Policy Committee on Transportation held on October 10, 2017 be adopted.

5. UNFINISHED BUSINESS

6. COMMUNICATIONS (requiring the direction of the Committee)

6.1 Delegated Authority Matters

6.2 Matters Requiring Direction

6.2.1 Laurel Beaumont - Speed on 100 Block, 9th Street East [File No. CK 6320-1] 5 - 5

An email from Laurel Beaumont dated October 15, 2017 is provided.

The Standing Policy Committee on Transportation, at its meeting held on October 10, 2017, considered a communication from Franny Rawlyk regarding traffic volume and speeds on the 100 Block of 9th Street East and it was resolved that the matter of traffic safety at this location be referred to the Administration for a report outlining a process to review the location.

Recommendation

That the letter from Laurel Beaumont be received and joined to the file.

6.3 Requests to Speak (new matters)

7. REPORTS FROM ADMINISTRATION

7.1 Delegated Authority Matters

7.1.1 Infill Lane Paving Requirements [Files CK 6315-1 and TS 6000-1] 6 - 8

Recommendation

That the report of the General Manager, Transportation & Utilities Department, dated November 6, 2017, be received as information.

7.2 Matters Requiring Direction

7.2.1 National Trade Corridors Fund Projects [Files CK 6000-1, x1860-1 and TS 6332-01] 9 - 13

(Revised Report)

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:

That the City's application to the National Trade Corridors Fund for the Highway 11 and Highway 16 Interchange Upgrades be endorsed.

7.2.2 Plan for Growth – Bus Rapid Transit Preferred Configuration 14 - 30
[Files CK 7300-1, x4110-2 and PL 4110-78-2]

A powerpoint presentation will be provided.

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council that the preferred configuration and conceptual network for the Bus Rapid Transit system, as outlined in this report, be approved as the basis for further engagement and design.

7.2.3 Protected Bike Lane Demonstration Project – Evaluation and 31 - 169
Next Steps [Files CK 6000-5 and TS 6330-04]

Request to Speak - Keith Moen, dated October 30, 2017

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:

1. That a provision for protected bike lanes be included in the Downtown All Ages and Abilities cycling network;
2. That the Administration develop a Downtown All Ages and Abilities cycling network (including protected bike lanes) in concert with other downtown policy and planning initiatives in 2018; and
3. That the existing protected bike lanes on 23rd Street (from Spadina Crescent to Idylwyld Drive) and 4th Avenue (from 20th Street to 24th Street) be retained until the Downtown All Ages and Abilities cycling network is developed.

7.2.4 Winter Road Maintenance – 2018 Snow and Ice Maintenance 170 - 176
Program Options [Files CK 6290-1 and PW 6290-1]

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:

That Option 1 be implemented as outlined in this report.

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:

That the ten neighbourhoods selected for 2018 traffic reviews, as part of the Neighbourhood Traffic Management Program, include College Park, College Park East, Riversdale, Eastview, Nutana Suburban Centre, Westview, Massey Place, Fairhaven, River Heights and Forest Grove.

8. URGENT BUSINESS

9. OTHER

9.1 2018 Preliminary Business Plan and Budget

City Council, at its Regular Business Meeting held on October 23, 2017, resolved that the meeting agendas for the Standing Policy Committees leading up to City Council's Budget Deliberations include "2018 Preliminary Business Plan and Budget" as a standing agenda item to allow for discussion and comment.

10. MOTIONS (Notice Previously Given)

11. GIVING NOTICE

12. IN CAMERA AGENDA ITEMS

13. ADJOURNMENT

RECEIVED

OCT 16 2017

6320-1

CITY CLERK'S OFFICE
SASKATCON

From: busstop@sasktel.net
Sent: October 15, 2017 8:40 AM
To: Web E-mail - City Clerks
Cc: Protz, Karla (Clerks); Gardiner, Angela (TU - Transportation); Web E-mail - Mayor's Office; Block, Cynthia (City Councillor); Iwanchuk, Ann (City Councillor); Donauer, Randy (City Councillor); Gersher, Sarina (City Councillor); Jeffries, Zach (City Councillor)
Subject: submission to Transportation Committee Nov 6th Meeting re: Ninth St E

Members of the Transportation Committee,

It has come to our attention that a select few residents of the 100 block of ninth street are once again attempting to restrict traffic on their block, claiming high volumes of traffic and speeding.

The committee should be aware that most residents of the neighborhood do not believe there is a significant volume of traffic nor a concern of speeding on that one block of ninth st, especially given the block is now bracketed by stop signs at each end. However the proof of this would be to station a police radar unit on that block to ticket the offenders (if there actually are any) and a traffic counter for a two or three week period for real counts rather than opinions.

In any event, it would be a sad waste of tax dollars to make any changes before the Victoria Bridge is reopened in 2018 and we see the effect that has on neighborhood traffic patterns.

Yours truly,

Laurel Beaumont
1012 McPherson Ave
Saskatoon
(306)717-0305

Infill Lane Paving Requirements

Recommendation

That the report of the General Manager, Transportation & Utilities Department, dated November 6, 2017, be received as information.

Topic and Purpose

This report provides information on the effect of discontinuing charging alley paving fees for infill until a permanent policy is in place.

Report Highlights

Impacts of discontinuing charging alley paving fees for infill until a permanent policy is in place are provided.

Strategic Goal

This report supports the Strategic Goal of Moving Around by providing improved safety for all road users (pedestrians, cyclists, and drivers), and helps provide a great place to live, work, and raise a family.

Background

The Standing Policy Committee on Transportation, at its meeting held on October 10, 2017, received a report providing details on an interim policy that clarified the requirements for lanes to be paved adjacent to infill development projects:

- a. All commercial and/or industrial developments intending to use an existing gravel lane for staff or visitor parking and/or business purposes will be required to pave the entire length of the lane at the time of development.
- b. For residential infill, if traffic meets or exceeds a threshold of 30% increase in total lane trips (as calculated by the Institute of Transportation Engineer's Transportation Impact Analysis for Site Development), the developer will be required to pave the lane from the furthest property line to the nearest city street at the time of development. The entire development would be considered in this calculation.
- c. For Affordable Housing infill projects, the developer will not be required to pave the lane. Affordable Housing is defined in Council Policy C09-002, Innovative Housing Incentives.

Clarifying when a lane will be required to be paved allows for developers to better anticipate their costs during the development of their projects.

Going forward, two issues that will be foundational to any formal policy are as follows:

1. Identifying when densification or increased traffic in a lane trigger the need to upgrade an existing gravel lane to pavement.

Infill Lane Paving Requirements

2. Once this trigger is met, the funding mechanism that appropriately incentivizes infill; protects the needs of existing residents; and ensures that all developers are treated fairly.

The Standing Policy Committee on Transportation, at its meeting held on October 10, 2017, resolved, in part:

- “1. That the Administration report back to the next meeting of the Standing Policy Committee on Transportation what the effect would be to discontinue charging alley paving fees for infill until a permanent policy is in place;”

Report

The current practice of requiring developers to pave adjacent back lanes has been a long-standing practice to minimize the negative impacts of infill development on adjacent properties. Over the past three years, infill developers have been required to pave an adjacent lane nine times including three times for large commercial and/or industrial sites and six times for larger multi-family residential sites. Requiring larger infill developments to pave the lane has successfully minimized the impacts of increased traffic in existing neighbourhoods. Smaller residential developments, such as single family or four-plex developments, are typically not required to pave the adjacent lane and therefore would not be affected by the interim policy.

The potential impact of discontinuing charging alley paving fees for infill until a permanent policy is in place are as follows:

- Increased traffic volumes on unpaved lanes result in increased levels of noise and dust for adjacent property owners. New users of the back lane, including residents, customers or employees of the new infill development, may also expect lanes to be paved, thereby increasing complaints.
- Increased maintenance liability for the City due to increase traffic volumes on an unpaved surface.

The current level of service for maintenance of gravel back lanes is as follows:

- Each spring all back lanes are inspected to determine treatment needs.
- Between July and October, all back lanes receive at least one maintenance treatment (e.g. grading). In some cases, complete reconstruction is required.

As traffic volumes increase in a gravel back lane, the level of service for maintenance may need to be increased to maintain an acceptable and safe lane condition, requiring additional resources.

Public and/or Stakeholder Involvement

The Administration is continuing to discuss the development of a formal policy with the development community. Stakeholder consultation through the Developers Liaison Committee and the round table on infill development are ongoing.

Communication Plan

A formal policy, if adopted, will be made available on the City website, and shared with the Saskatoon Home Builder's Association.

Policy Implications

A formal City Council policy for paving lanes will be developed through the infill roundtable discussions.

Other Considerations/Implications

There are no options, financial, environmental, privacy, or CPTED considerations or implications.

Due Date for Follow-up and/or Project Completion

The Administration will report with recommendations for the development of a formal paved lane policy for infill development after the series of infill development round tables are complete.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Report Approval

Written by: Jay Magus, Acting Director of Transportation
Approved by: Angela Gardiner, Acting General Manager, Transportation & Utilities Department

TRANS JM – Infill Lane Paving Requirements.docx

National Trade Corridors Fund Projects

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:
That the City's application to the National Trade Corridors Fund for the Highway 11 and Highway 16 Interchange Upgrades be endorsed.

Topic and Purpose

The purpose of this report is to inform the Standing Policy Committee on Transportation about the application process for the National Trade Corridors Fund (NTCF) and to receive endorsement for the application of the Highway 11 and Highway 16 Interchange Upgrades project.

Report Highlights

1. The NTCF is for investment in critical assets that support economic activity and the physical movement of goods and people in Canada.
2. The City of Saskatoon (City) submitted two Expressions of Interest (EOI) for consideration for funding during the initial intake.
3. The City has been invited for further consideration on both EOI's by submitting Comprehensive Project Proposals.

Strategic Goals

This report supports the long-term strategy of reducing the gap in funding required to rehabilitate and maintain the City's infrastructure under the Strategic Goal of Asset and Financial Sustainability. This report also supports the long-term strategy of optimizing the flow of people and goods in and around the city under the Strategic Goal of Moving Around.

Background

In 2015 as part of the Growth Plan Summit, the Transportation Network Priorities were presented to City Council, outlining the transportation infrastructure needs for a city of half a million. Both projects submitted for the initial EOI were identified as priorities.

The NTCF has a total of \$2 billion that has been allocated over 11 years. The deadline to submit EOI's to Transport Canada was September 5, 2017 and, if the EOI was approved, then the applicant is required to submit Comprehensive Project Proposals, which are due November 6, 2017.

Report

Overview of the National Trade Corridors Fund

The NTCF program is one component of the Federal Governments Investing in Canada Plan which is to address the long-term infrastructure needs in Canada and support middle class growth and jobs. The NTCF will help address transportation bottlenecks, vulnerabilities and congestion and is delivered by Transport Canada.

National Trade Corridors Fund Projects

The types of projects and initiatives that are eligible under the NTCF are ones that:

- Add capacity to transportation system (such as adding lane-kilometers);
- Improve the time it takes for goods to move from the beginning of the supply chain to the end;
- Increase transportation system productivity (volume of freight); and
- Increase northern transportation infrastructure and efficiency.

Available funding is up to 50% of total eligible expenditures of a project to a maximum of \$500 million.

In this first round of funding, Transport Canada will commit \$400 million of the \$2 billion available. There will be future calls for proposals over the 11 years of the program and Transport Canada has stated that the priorities for these future calls may differ from this call.

The priorities for this call are projects that can proceed in 2018-19, have funding secured and the benefits of the project align with the objectives of the NTCF program.

Projects Invited to Submit Comprehensive Project Proposal

The application process was split into two phases for the NTCF. The first phase was the submittal of an EOI. The initial EOI was to ensure that applicants demonstrated that the project meets the eligibility criteria of the program. If the applications were accepted through the initial EOI phase then they were invited to phase two of the application process which is to submit a Comprehensive Project Proposal. If the EOI did not meet the program criteria then they were discontinued from the application process and were not invited to go to phase two. The Comprehensive Project Proposal is an in-depth application to fully explain the project details, timing, and confirm funding sources. The invitation to submit the Comprehensive Project Proposal does not guarantee Federal funding for any project. Transport Canada will use the Comprehensive Project Proposals to select the specific projects that will receive funding from the NTCF.

On September 5, 2017, the Administration submitted two EOI's for the following projects:

- Highway 11 and Highway 16 Interchange Upgrades
- West Connector Route

Both of these projects are identified in the Capital Budget as unfunded future projects and were suitable candidates for the criteria as outlined in the NTCF program. Functional designs for both projects are well underway and public engagement has occurred.

On October 6, 2017, the City was notified that both EOI's had been accepted by Transport Canada. The City's projects were among more than 357 projects that submitted an EOI. The total dollar value of the initial EOI's submitted was \$16.9 billion so the amount of the applications far exceeded the amount of available funding. 200 projects that met the screening criteria passed the initial EOI phase and are now invited to submit Comprehensive Project Proposals.

Highway 11 and Highway 16 Interchange Upgrades

In 2016, City Council approved an award of contract for a functional planning study to identify improvements to the existing interchange and/or replacement structures to improve safety and function of the interchange. The details of the functional plan, which can be implemented in phases, will be presented to the Standing Policy Committee on Transportation in early 2018.

An ultimate interchange configuration has been developed to support the long-term travel demands in the area and it is anticipated that the re-build of this interchange into the ultimate configuration would happen when the existing structure is near the end of its service life (approximately 10 to 15 years). The first phase of the upgrades will be compatible with the ultimate interchange configuration and would help in alleviating the existing operational issues such as the insufficient capacity during peak demand, ineffective moving of traffic, and the substandard vertical clearance on the bridge structure. This project will:

- Increase capacity for southbound to westbound and southbound through movements;
- Remove the weaving condition from the mainline and allow for weaving to occur at lower speeds;
- Will allow vehicles greater time to complete weaves, as well as merge onto the mainline;
- Will help to protect the bridge structure from being struck by providing a low-speed high-load bypass lane for northbound traffic; and
- Include an overheight load detector and guide signs to divert overheight trucks to the bypass.

Total cost of the first phase of the Highway 11 and Highway 16 Interchange Upgrades is estimated to be \$6 million (\$600,000 estimated in 2018 and \$5.4 million in 2019). If approved, the NTCF would cover 50% of the eligible costs of the project and the City would be responsible for the remaining costs. The Administration is exploring funding options within the Major Transportation Infrastructure Funding Plan and the Gas Tax Allocation Plan to support the City portion of costs on this project.

West Connector Route

The West Connector Route project includes components for improving Neault Road, the intersection at Neault Road and Beam Road, as well as improvement of Beam Road. This project would require a partnership between the City, Saskatchewan Ministry of Highways and Infrastructure and the Rural Municipality of Corman Park No. 344. The Administration has begun discussions with both parties but, due to the tight timelines for the funding application, are unable to secure a formal funding arrangement for this project. The Comprehensive Project Proposal for the NTCF must demonstrate that the funding is secured between all partners, which is not yet in place, therefore the Administration will not be submitting a comprehensive proposal for further consideration for this project at this time. The Administration will continue to work with the other partners to come to an agreement so that this project can be considered for upcoming calls for applications for this funding program. The total cost of the West Connector Route is estimated to be \$16 million.

In preparation for future intake for projects for NTCF, the Administration will prioritize projects that meet the criteria for City Council's consideration.

Public and/or Stakeholder Involvement

For the Highway 11 and Highway 16 Interchange Upgrades a Value Engineering Session was held on October 24, 2016. Stakeholders included the Saskatchewan Trucking Association and the Rural Municipality of Corman Park. The first public open house was held on November 28, 2016, at Circle Drive Alliance Church. A total of 127 people attended the meeting and 32 comments were received. The purpose of this meeting was to collect feedback from participants, narrow the options to be considered, and identify specific concerns to be addressed in developing the short and long-term plans. In general, participants were supportive of the study and the development of a long-term solution to traffic problems at this interchange. The second public open house was held on April 12, 2017, at Circle Drive Alliance Church. A total of 98 people attended the meeting, and six comments were received.

Discussions will continue with Saskatchewan Ministry of Highways and Infrastructure and the Rural Municipality of Corman Park No. 344 to reach an agreement on funding for the West Connector Route for a future application.

Options to the Recommendation

The Standing Policy Committee on Transportation and City Council could choose not to endorse the application of the Highway 11 and 16 Interchange Upgrades Project. This is not recommended by the Administration as the NTCF program is a good opportunity to obtain funding from senior levels of government for projects that are currently not funded. Due to tight timelines for application, the Administration will proceed with submission following the Standing Policy Committee on Transportation's direction, with the understanding that if not endorsed by City Council, the submission will be retracted.

Financial Implications

The financial implications are addressed in the body of this report.

Other Considerations/Implications

There are no options, communication, policy, environmental, privacy, or CPTED implications or considerations, and a communication plan is not required.

Due Date for Follow-up and/or Project Completion

The Administration will report back to the Standing Policy Committee on Transportation upon receiving notification of the decision regarding NTCF funding for the Highway 11 and Highway 16 Interchange Upgrade project. If approval is received for the project, the report will include a proposed funding plan for the City's contribution. A further report prioritizing all projects that may be eligible for future NTCF will be presented in 2018.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Report Approval

Written by: Kari Smith, Manager of Financial Planning
Reviewed by: Jay Magus, Acting Director of Transportation
Approved by: Clae Hack, Acting CFO/General Manager, Asset & Financial
Management Department
Approved by: Angela Gardiner, Acting General Manager, Transportation &
Utilities Department

TRANS KS – National Trade Corridors Fund Project

“Approved by Angela Gardiner, Acting/GM of T & U Department, October 31, 2017”

Plan for Growth – Bus Rapid Transit Preferred Configuration

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council that the preferred configuration and conceptual network for the Bus Rapid Transit system, as outlined in this report, be approved as the basis for further engagement and design.

Topic and Purpose

This report identifies the components of a Bus Rapid Transit system and requests City Council's approval of a "preferred configuration" to form the basis for more detailed planning, design, and engagement work.

Report Highlights

1. HDR Corporation (HDR) has reviewed the Growth Plan to Half a Million (Growth Plan) and Saskatoon's existing transit system and has submitted a preferred configuration for Saskatoon's Bus Rapid Transit (BRT) system.
2. HDR's preferred configuration identifies the main components of the Red and Blue BRT lines, which includes Transit Signal Priority Measures, Roadway Geometric Measures, Stations, Customer Systems, and Runningways.
3. Based on its experience developing BRT systems in other markets, HDR has identified a preliminary cost estimate of \$120 million, plus or minus 25%, to implement the preferred configuration.
4. The project timeline is intended to position the City of Saskatoon (City) for the second phase of the Public Transit Infrastructure Fund (PTIF) program.

Strategic Goals

This report supports the City's Strategic Goals of Moving Around and Sustainable Growth by taking the next steps toward implementation of the Transit Plan component of the Growth Plan.

Background

At its July 26, 2017 meeting, City Council awarded a contract to HDR for Bus Rapid and Conventional Transit Planning, Design, and Engineering Services. The major deliverables of this project include:

- a) Existing Conditions Assessment;
- b) a BRT Functional Plan;
- c) BRT Station Design;
- d) BRT Detailed Design;
- e) a Park and Ride Study and Concept Design;
- f) a Transit System Plan; and
- g) an Implementation Plan.

Report

Review of Growth Plan and Existing Transit System

To prepare for later stages of transit planning and design work, HDR has reviewed the Growth Plan with a focus on the Transit Plan component. HDR has also reviewed Saskatoon's existing transit system. Attachment 1 is the summary of this work, identifying the benefits of BRT, the major components of BRT systems, and a preferred configuration for Saskatoon's BRT.

Bus Rapid Transit Components and Preferred Configuration

Each of the components of BRT systems can be included to a greater or lesser degree, providing flexibility in building a system at a scale to match community aspirations, passenger demand, and funding availability.

Based on the Growth Plan and assessment of the current transit system, HDR has identified a preferred configuration of the Red and Blue BRT lines that will focus the planning and design effort on the most appropriate BRT system for Saskatoon.

The preferred configuration for each BRT component is as follows:

1. Transit Signal Priority Measures – apply at all beneficial locations.
2. Roadway Geometric Measures – apply at select beneficial locations.
3. Stations – develop medium-scaled stations that will accommodate 12 to 20 waiting customers in a safe, protected, and well-lit environment that will be seen as a positive influence on the public realm and adjacent community. Stations should have a common design theme; however, each one would be sized to accommodate the expected customer traffic at specific locations.
4. Customer Systems – provide good destination, wayfinding, route, schedule, next bus information, and security monitoring. Off board fare processing could be added in the future.
5. Runningways – develop a mixed-traffic system with exclusive lanes in select short road sections along 3rd Avenue in the downtown, Broadway Avenue, and College Drive.

Preliminary Cost Estimate and Construction Timing/Phasing Approach

HDR has identified a rough order of magnitude cost for implementation of the preferred configuration of \$120 million, plus or minus 25%. This estimate is expected to be refined as a result of the next stages of the project – Functional Planning and Detailed Design.

Subject to available funds, the above system could be fully implemented over a three-year construction schedule.

The Administration supports this preferred configuration as it balances cost implications with improvements to transit system speed, reliability, and customer experience, while supporting the city building objectives outlined in the Growth Plan.

Options to the Recommendation

City Council has the option to adjust the “levels” of each of the five BRT components from those recommended in the preferred configuration. Adjusting the levels at this stage will not significantly affect HDR’s timeline to complete the Functional Planning or Detailed Design, though that may affect the capital cost to construct.

HDR has identified Transit Signal Priority Measures as the foundation of a successful BRT system. Significant reductions to the use of Transit Signal Priority Measures in the system will impact the future BRT system’s ability to function successfully.

City Council could choose to not approve any configuration at this time. This would impact the timeline to deliver the project and could impact PTIF funding eligibility as a result. Further direction would be required.

Public and/or Stakeholder Involvement

Applicable City divisions have been working closely with HDR through the development of the preferred scenario to ensure it aligns with both the City’s policies and standards and the input received from the community through development of the Growth Plan.

Opportunities for specific stakeholder and public engagement are identified in HDR’s work plan and will occur as the project progresses to the next stages.

Communication Plan

The Administration has developed a comprehensive communication and engagement plan for the Growth Plan implementation initiatives, including the BRT/Transit Plan Implementation project.

This plan identifies numerous opportunities to communicate project progress with the public through the project website, the City’s forthcoming engagement page, news releases, press conferences, monthly Plan for Growth newsletters, and a range of social media and public space communication channels. Also, each component of the Growth Plan has identified stakeholder and public engagement touchpoints.

A communication and engagement timeline is attached (see Attachment 2). This timeline may be adjusted as necessary to accommodate project circumstances.

Financial Implications

There are no financial implications as a direct result of this report. More detailed plans/designs and an implementation plan with funding options will be brought forward in due course.

Safety/Crime Prevention Through Environmental Design (CPTED)

CPTED Review will be conducted at the appropriate times during the functional planning and detailed design phases.

Other Considerations/Implications

There are no policy, environmental, or privacy implications or considerations.

Due Date for Follow-up and/or Project Completion

A decision-oriented report regarding the BRT Functional Plan and Implementation Plan will be submitted to the Standing Policy Committee on Transportation early in 2018, with a target for completion of detailed design by mid-2018.

The project schedule is based on the timelines prescribed under the PTIF. Eligibility for PTIF reimbursement may be affected by significant delays in the project.

This timeline is intended to position the City to seek support under the second phase of the PTIF program and to facilitate the potential for BRT system preconstruction activities to commence in the summer of 2018 (using existing capital funds supported by the PTIF). BRT construction is expected to be possible as early as 2019, subject to final City Council approval and the availability of funding.

Public Notice

Public notice, pursuant to Section 3 of Public Notice Policy No. C01-021, is not required.

Attachments

1. Saskatoon Bus Rapid Transit – Preferred Configuration
2. Communication and Engagement Timeline

Report Approval

Written by: Chris Schulz, Growth Plan Manager, Planning and Development

Reviewed by: Lesley Anderson, Director of Planning and Development

James McDonald, Director of Saskatoon Transit

Jay Magus, Acting Director of Transportation

Approved by: Randy Grauer, General Manager, Community Services Department

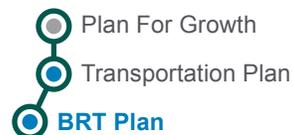
Angela Gardiner, Acting General Manager, Transportation and Utilities Department

S/Reports/2017/PD/TRANS – Plan for Growth – Bus Rapid Transit Preferred Configuration/lc

Saskatoon Bus Rapid Transit - Preferred Configuration

Preferred Configuration

FUTURE BUS RAPID TRANSIT PLANS



October 2017



BRT OVERVIEW

The City of Saskatoon Growth Plan identified two Bus Rapid Transit (BRT) corridors as key elements which will help shape the future of Saskatoon.

The Red and Blue BRT corridors will:

- Be major organizing elements of the Growth Plan
- Form the structural backbone of Saskatoon Transit
- Support a mode shift to transit
- Support land use intensification along major corridors
- Anchor the Transit Villages developments

This report defines the concept or preferred configuration of the Red and Blue BRT lines which will focus the planning and design effort on the most appropriate BRT system for Saskatoon for the foreseeable future.

The preferred configuration will define the scale and scope of the transit signal priority measures, geometric priority measures, station design, customer systems and runningways.

This approach will facilitate fast-tracking of the BRT system development through Stakeholder Engagement, Functional Planning, Detailed Design and Implementation.

Growth Plan

Between 2009 and 2011, the City reviewed the planning and funding strategy for community growth, and conducted a visioning process (**Saskatoon Speaks**) to identify residents' expectations and aspirations for Saskatoon. These processes determined that:

If trends continue, the costs required for growth would be 'extremely significant' and the future shape and characteristics of the city would not meet citizen expectations. The conclusion was reached that Saskatoon needed to consider 'fundamental changes' in our approach to transit, transportation and land use.

In 2012, City Council adopted **Strategic Plan 2013 – 2023** based on public feedback from the Saskatoon Speaks visioning process and initiated the **Growth Plan to Half a Million** to address the Sustainable Growth and Moving Around strategic goals.

In 2016, City Council adopted the **Growth Plan to Half a Million**. It charts a path for how the city will develop and how people will move about based on the following key components:

| | |
|----------------------------|---|
| Strategic Infill | Support development of Downtown, North Downtown and University of Saskatchewan "endowment lands" to accommodate more people and jobs within Circle Drive. |
| Corridor Growth | Encourage growth and redevelopment near existing major corridors. |
| Transit and BRT | Make transit more attractive to more people as the population increases. |
| Core Area Bridges | Make the best use the existing road capacity and planning for the future. |
| Employment Areas | Ensure the right amount of employment in the right areas. |
| Active Transportation Plan | Provide support for greater use of walking and cycling for work and personal use. |
| Financing Growth | Plan ahead for the costs of growth. |

Saskatoon Transit

Saskatoon’s current transit system is a hub-and-spoke configuration that brings most routes and passengers to the downtown and the University of Saskatchewan. The system provides good coverage with 95% of Saskatoon’s population within 450m of transit; however, the network lacks directness of travel. The Saskatoon transit mode share is only 4.5% which compares poorly with similar cities such as Victoria and Winnipeg which have transit mode shares of 10% and 14%, respectively.

Many of the routes are circuitous loops that start and end downtown, at the University or at a transit terminal. As the city grows, it will become difficult to expand these looped routes, and those that are expanded will have longer trip distances and travel times. This will also necessitate additional transit terminals and multiple transfers for longer distance trips.

Saskatoon Transit has a 2043 target objective to increase transit mode share to 8% system-wide and 25% to downtown. Under a “business as usual” strategy, these targets are not achievable, and deterioration in current performance is likely. Buses currently operate in mixed traffic with no transit priority measures. This means that without changes to bus operation, increases in future traffic congestion due to growth will negatively impact transit customer travel times and operating costs.

The Growth Plan calls for a restructuring of Saskatoon Transit to more of a grid network with direct two-way routes serving major corridors and development nodes. The Red and Blue Line BRT would be the core services around which a new transit network would be developed.



BRT BENEFITS

Bus Rapid Transit is defined as:

“a rubber tired bus based rapid transit system that improves travel speed, reliability, capacity and customer experience through enhancements to bus priority measures, stations, customer systems and runningways.”

BRT may be implemented in phases or at a scale to match community aspirations, passenger demand and funding availability.

There are five benefit categories that can be achieved with a BRT system implementation. These expected system improvements directly support the Growth Plan transit objectives:



Reduce transit travel times – BRT passenger travel times will decrease 5 to 20% compared to existing bus routes.



Improve reliability – On time performance defined as leaving a timepoint within 0 to 3 minutes late increases to over 90%.



Create a positive experience for customers – Safe, comfortable, accessible passenger waiting areas, active transportation connections to the community and real time schedule information will attract and retain transit customers.



City Building – Creating a positive image and the synergy with corridor and Transit Villages development will influence urban form and development patterns.



Responsible Investment - BRT development will be at a scale appropriate to the transit market, community aspirations and available funding. Attracting new ridership will increase farebox revenue.

BUILDING A BRT SYSTEM

There are five major components that make up a BRT system:

- Transit Signal Priority Measures;
- Roadway Geometric Measures;
- Stations;
- Customer Systems; and
- Runningway Improvements.

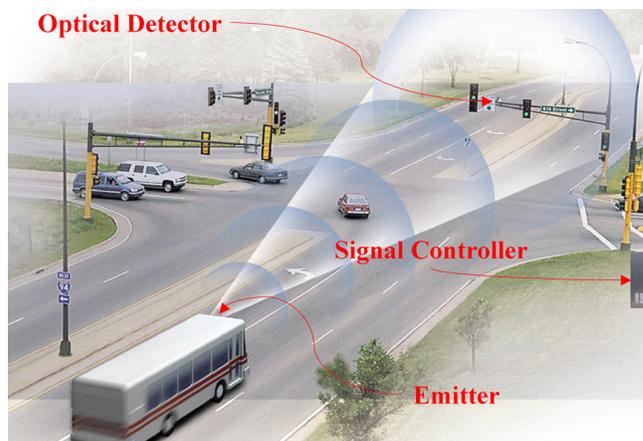
Each of the system components may be applied through a range of options that will define the scale, functionality and cost of the BRT system.

Transit Signal Priority Measures

Transit signal priority (TSP) measures are considered the foundation of a BRT system. They can provide significant travel time and reliability improvements at a relatively low cost.

TSP uses the existing traffic signal infrastructure, bus arrival detection and software logic to determine the optimum way to limit bus delay at traffic signals.

TSP is developed by analyzing traffic movements at all signalized intersections along the BRT route to determine the functionality and value of specific TSP applications. The impact to auto traffic, pedestrian and cycle movements are considered within the scope of the analysis. TSP can be applied at limited locations, multiple select locations or at all beneficial locations.

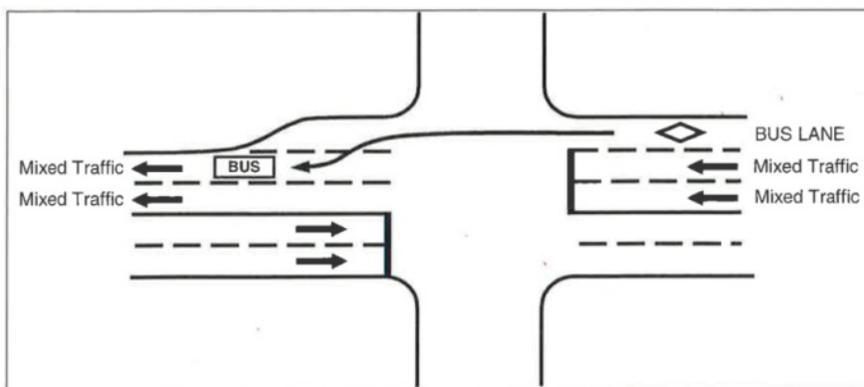
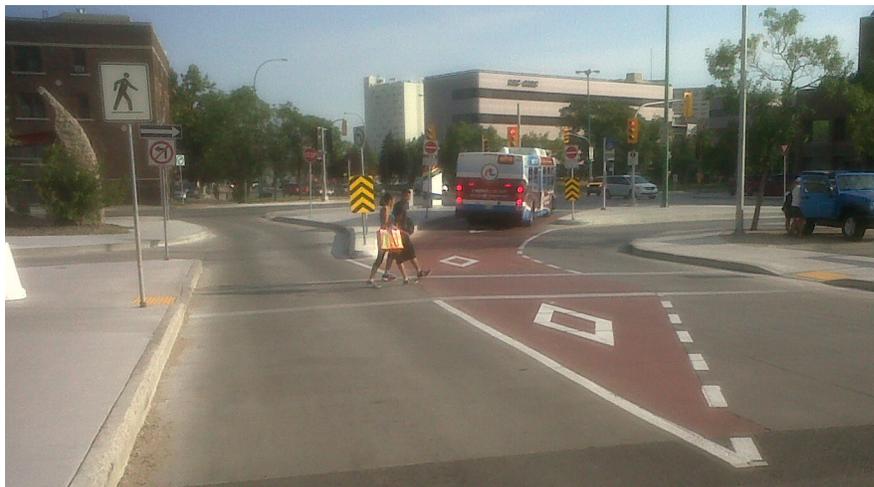


The preferred configuration for the Saskatoon BRT is to apply TSP at all beneficial locations.

Roadway Geometric Measures

Congestion within the Saskatoon road network occurs primarily at major intersections and bridge approaches. Geometric improvements such as queue jump lanes, removal of bus bays, bus bypass lanes, and other similar measures will provide buses with a time advantage at the most critical points along the corridor. When used in conjunction with transit signal priority, the ability to bypass congestion at critical points will provide travel time savings and reliability improvements that are comparable with exclusive transit lanes.

Roadway geometric measures are developed by analyzing traffic movements and bus by-pass opportunities along the BRT route. The impact to auto traffic flows, pedestrian and cycle movements are considered within the analysis. There are usually relatively few opportunities to apply geometric improvement measures; however, they can be very effective at strategic locations.



The preferred configuration for the Saskatoon BRT is to apply Roadway Geometric Measures at select beneficial locations.

Stations

All transit customers begin and end their journey as a pedestrian, and the station is the point where they transition from being a pedestrian to a passenger. The station environment and connections to the adjacent community are critical to creating a positive customer experience that is welcoming, safe, convenient and comfortable.

The relationship between transit and active transportation is focused at the stations. It is important that each station is connected to the community active transportation network in a safe and legible manner.

Stations can have a positive influence on the adjacent public space and private development. Stations that are developed to support and compliment corridor and nodal development can make a significant contribution to city building.

Station components include the curb, pad, identification pylon, shelter, lighting, waste receptacle, bike racks, branding and allowance for public art. Stations may be developed at varying scales; from loading pads with simple small glass shelters to medium sized, pedestrian scale, highly functional, and comfortable facilities to large “signature” facilities. The cost of each station can vary considerably from under \$100,000 to the \$250,000 - \$500,000 range to over \$1 million.



The preferred configuration for the Saskatoon BRT stations is to develop medium scaled stations that will accommodate 12 to 20 waiting customers in a safe, protected and well lit environment that will be seen as a positive influence on the public realm and adjacent community. Stations should have a common design theme; however, each one would be sized to accommodate the expected customer traffic at specific locations.

Customer Systems

Customer systems include destination and wayfinding information, route and schedule information, real time next bus information, commercial advertising, security monitoring and help phones, and off board fare processing.

The provision of accurate and timely customer information can have a very positive influence on customer confidence, transit system image and ridership.



The preferred configuration for the Saskatoon BRT customer systems is to provide good destination, wayfinding, route, schedule, next bus information and security monitoring. Off-board fare processing could be added in the future.

Runningways

Runningways are the path that a BRT bus follows. Runningways may vary from an operation in mixed traffic curb running on an existing roadway to exclusive lanes within an existing road right of way to exclusive roadways separate from other traffic. Determining the appropriate runningway application is a function of the traffic environment, travel time savings and expected ridership.

Most congestion in Saskatoon is related to intersections. There is generally sufficient capacity in the existing travel lanes to allow transit vehicles to move freely, provided they can move through intersections with minimal delay. There are some critical sections within the inner city where exclusive lanes would provide some advantage in travel time, promote the primary transit corridor or compliment the adjacent community functions.

Higher end runningways may be relatively expensive and should be evaluated based on the speed, functionality and capacity improvements achieved in relationship to the investment.



The preferred configuration for the Saskatoon BRT runningways is to develop a mixed traffic system with exclusive lanes in select short road sections along 3rd Avenue in the downtown, Broadway Avenue and College Drive.

Preferred Configuration Summary

In summary, the preferred configuration can be described as follows:

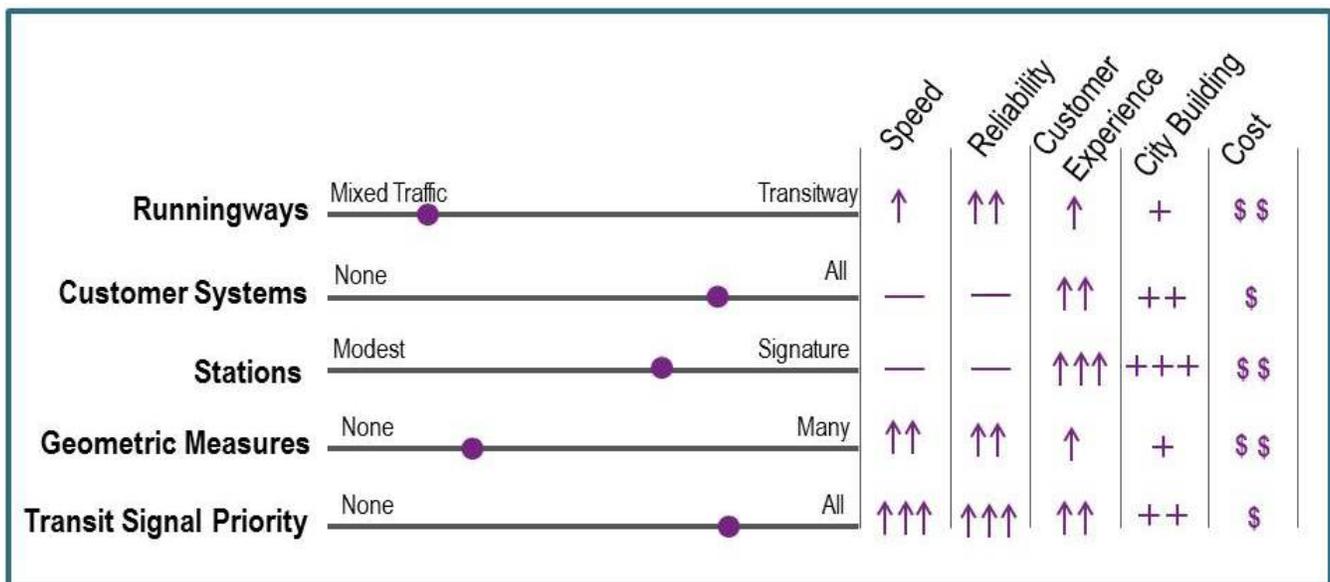
- Transit signal priority measures would be provided at all locations where analysis determines the installation would be beneficial.
- Geometric priority measures, including queue jump and by-pass lanes, would be provided in select locations where analysis determines the installation would be beneficial.
- Station design will be at the high end of a medium scale shelter following the general design criteria. Stations would have a common design theme; however, would be provided in three varying sizes depending on customer volumes.
- A full suite of standard Customer System elements would be provided. Provision (ducting) for security monitoring, help phones and off board fare processing would be included with a decision on the inclusion of items later.
- The majority of the runningways will be a mixed traffic curb running operation with exclusive lane runningways in three or four sections within the inner city.

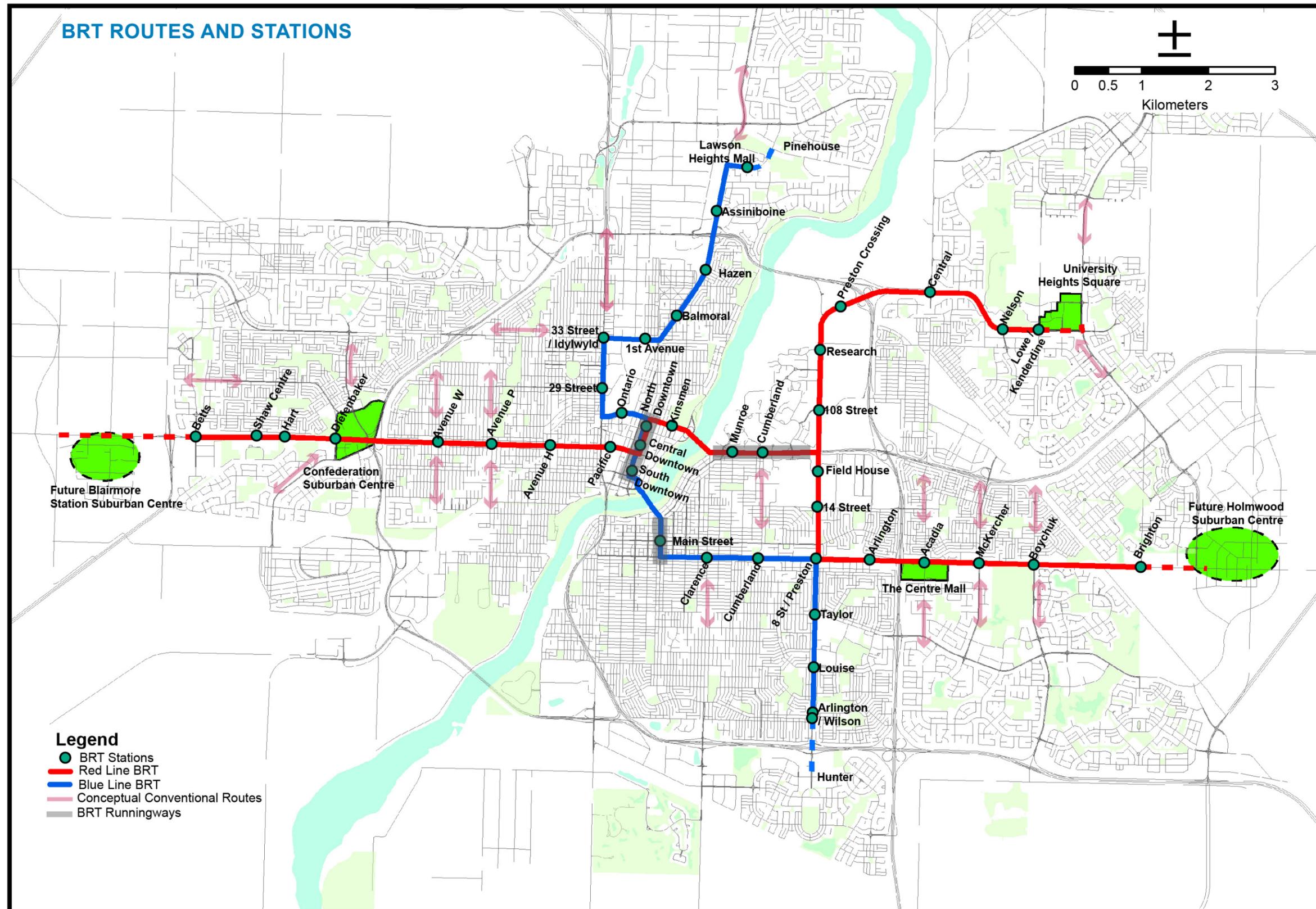
Benefits Summary

The expected benefits would include:

- Substantial improvement in transit operating speeds.
- Substantial improvement in schedule reliability.
- Significant improvement in the transit customer experience.
- Positive community image and support for corridor and Transit Villages development.
- Investment appropriate for the transit market, community aspirations and available funding.

The exhibit below illustrates the preferred configuration of Saskatoon's BRT system and the expected benefits.





BRT PROJECT TIMELINE

The major project milestones are as follows:

- **August to November 2017** – Validating the BRT system concept and identifying a “preferred configuration”.
- **December 2017 to February 2018** – Stakeholder engagement and refinement of the BRT Functional Plan, Station Design, Transit Network Plan, Park and Ride Strategy, and Implementation Plan.
- **April 2018** – Completion of BRT Detailed Design.
- **Summer/Fall 2018** – Potential BRT pre-construction work (survey, utility locates, geo-technical work, etc.).

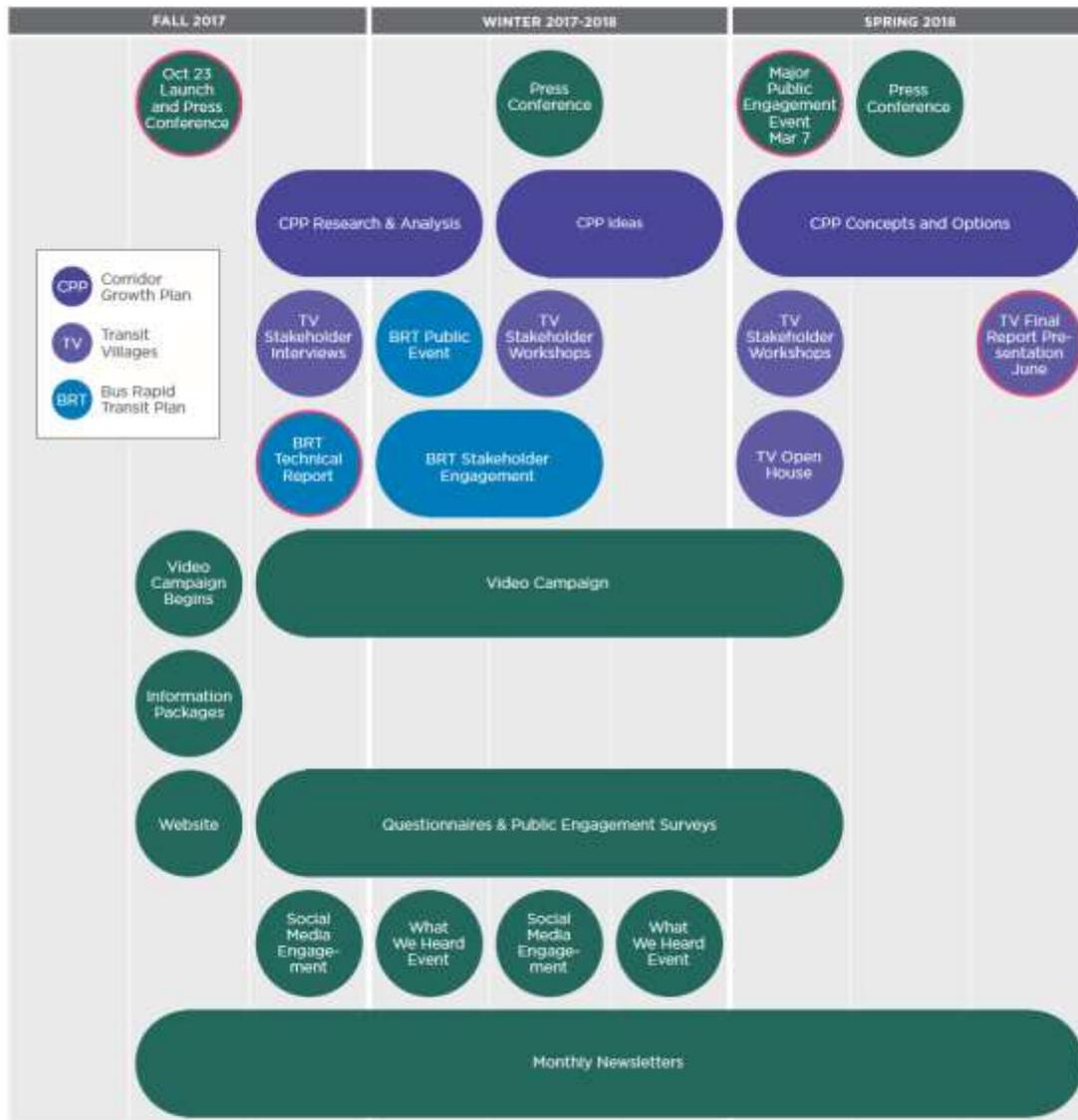
BRT IMPLEMENTATION AND COST

The BRT system described above could be implemented over a three year construction schedule for a rough cost of approximately \$120 million plus or minus 25%. However, it must be recognized that the construction schedule and approximate cost are being put forward prior to completion of the Functional Plan and Detailed Design. The project cost noted is a very rough approximation and is based on similar BRT experience in other jurisdictions. The schedule may also be influenced by available funding.



Communication and Engagement Timeline

COMMUNICATIONS AND ENGAGEMENT ACTIVITIES



Protected Bike Lane Demonstration Project – Evaluation and Next Steps

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:

1. That a provision for protected bike lanes be included in the Downtown All Ages and Abilities cycling network;
2. That the Administration develop a Downtown All Ages and Abilities cycling network (including protected bike lanes) in concert with other downtown policy and planning initiatives in 2018; and
3. That the existing protected bike lanes on 23rd Street (from Spadina Crescent to Idylwyld Drive) and 4th Avenue (from 20th Street to 24th Street) be retained until the Downtown All Ages and Abilities cycling network is developed.

Topic and Purpose

This report provides an evaluation of the Protected Bike Lane Demonstration Project and outlines the next steps for the provision of the All Ages and Abilities (AAA) cycling network in the Downtown.

Report Highlights

1. The demonstration project created a 1.6 km network of protected bike lanes to improve cycling as a strategy to increase the attractiveness of, and access to, the Downtown for businesses, residents, visitors, employers, and their employees.
2. The Protected Bike Lane Demonstration Project showed that bike lanes could be implemented successfully in a temporary, retrofit situation.
3. Opportunities to make further improvements to the protected bike lanes have been identified in order to improve operations and address some of the concerns identified through the demonstration project.
4. A Downtown Cycling Network Plan, to be complete in 2018, will recommend the locations and designs for a permanent AAA cycling network in the Downtown.

Strategic Goals

This report supports the Strategic Goal of Moving Around, Environmental Sustainability and Quality of Life, as well as the Active Transportation Plan and the City Centre Plan which identified the need for improved facilities for people who want to cycle in the Downtown.

Background

City Council, at its meeting held on March 23, 2015, resolved:

- “1. That the protected bike lanes be installed on 23rd Street (from Spadina Crescent to Idylwyld Drive) as a demonstration projects in 2015;

2. That the protected bike lanes be installed on 4th Avenue (from 19th Street to 24th Street) as a demonstration project in 2016; and
3. That the curb parking be installed on the north side of 24th Street between Ontario Avenue and Idylwyld Drive.”

The need for improved cycling facilities within the Downtown was identified through several City plans and initiatives. The City Centre Plan, approved by City Council in 2013, identified the need to improve cycling as a strategy to increase the attractiveness of, and access to, the downtown for businesses, residents, visitors, employers and their employees. The Growth Plan, endorsed by City Council in 2016, provides guidance for civic investments in infrastructure and support programs over the short, medium, and long term that will shape growth patterns and increase transportation choices, in order to achieve the social, economic, and environmental aspirations of the community. The Active Transportation (AT) Plan, endorsed by City Council in 2016, also identified the need to improve cycling for people of all ages and abilities, and recommended the Administration develop a Downtown AAA network.

Report

Demonstration Project

The demonstration project created a 1.6 km network and showed that bike lanes could be implemented successfully in a temporary, retrofit situation. The demonstration period allowed sufficient time to install the protected bike lanes, obtain feedback from stakeholders and the community, and apply changes to the protected bike lanes based on the feedback received. This process proved to be very effective as the changes to the bike lanes in the spring of 2017 further improved their operation. Some of the notable changes included:

- Replacing the “No Right Turn on Red” restriction with a “Drivers Yield to Cyclists” warning to improve the Level of Service (LOS) for motorists making right turns while maintaining cyclist safety.
- Shifting the bike lane closer to the traffic lane at intersections along 4th Avenue in order to improve visibility of cyclists.
- Improving the alignment of traffic lanes at the intersection of 4th Avenue and 23rd Street to reduce the offset of the northbound through lane.

The Administration has identified additional improvements to further improve their operations and address issues identified through the demonstration as outlined in Attachment 1.

Evaluation

The purpose of the demonstration project was to assess the feasibility of installing permanent protected bike lanes in the Downtown (see Attachment 1 for Project Background). Part of determining feasibility was to identify areas in the design of the protected bike lanes that may require refinement, identify gaps in the City’s policies and operations, and provide flexibility to apply those changes as the project progressed. In addition to providing an opportunity to trial changes to the bike lanes, the demonstration period provided sufficient time to evaluate and determine if the objectives of the project

were being met. A set of criteria was developed to assist with the evaluation and provide information to help inform the final decision on the demonstration project.

Satisfaction among all road users is divided; however, all other criterion has demonstrated success and the following objectives of the demonstration project have been achieved:

- The majority of people cycling in the protected bike lanes report their Downtown trips are more comfortable and they feel safer cycling in the Downtown;
- The overall trends for the frequency and severity of collisions between all modes are decreasing along these corridors;
- An increase in the number of people cycling along the protected bike lanes was observed;
- The impacts to people walking or driving have been modest or neutral;
- The impacts to businesses have been largely neutral, with the exception of concerns over parking availability;
- Gaps in civic operations were identified and rectified, where possible; and
- Cost to install and maintain is in-line when compared to bike lane demonstration projects in other Canadian cities (lower than Calgary, Edmonton, Ottawa, and higher than Halifax and Toronto.)

Additional information on the evaluation criteria can be found in Attachment 1.

Public satisfaction with the protected bike lanes remains largely divided. Motorists frequently report increased traffic delays along 4th Avenue, confusion when travelling along these corridors and challenges with finding parking. The impact to pedestrians remains largely unchanged, however, challenges for persons with mobility aids accessing parking and businesses have been noted. Cyclists largely support the protected bike lanes, but feel that improvements to the surrounding network (improving their access to the Downtown network), as well as increased visibility at conflict points would improve their experience. Additional information on the public input received can be found in Appendix A of Attachment 1.

Highlights of the evaluation analysis indicate:

- A slight increase in delay to motorists, however, the Level-of-Service remains at B, which is consistent with the prior condition.
- Additional overhead signage is recommended to improve driving lane clarity for motorists.
- Parking availability has decreased along 4th Avenue and 23rd Street by 17%. However, in the downtown parking demand during the afternoon peak period is only 60% of the parking supply. There is some loss of 'convenient' parking on 4th Avenue and 23rd Street, however, sufficient parking remains available in the downtown.
- Generally, there is a decreasing trend in the frequency and severity of collisions (for all modes) along 4th Avenue and 23rd Street.

Post-Demonstration Improvements

Opportunities to make further modifications to the protected bike lanes have been identified in order to improve operations and address some of the concerns identified through the demonstration project. These issues were not addressed during the demonstration as the work was more costly or substantial than the limitations of a temporary installation would permit, but can be upgraded after the demonstration. The recommended improvements have been informed by a review of best practices for protected bike lanes and are summarized in Appendix D of Attachment 1. These include:

- Improving disabled person parking and loading zones;
- Improving transit stops;
- Installing overhead signage to improve driver clarity of the lane assignments along 4th Avenue; and
- Modifying the barrier in the buffer.

These improvements will be incorporated into the permanent design of the protected bike lanes.

Some concerns identified indicate that further education of all road users would be of benefit. A review of the Saskatchewan Government Insurance (SGI) Driver's Handbook identified an educational gap as there does not appear to be any instruction identified on how motorists are to interact with people using protected bike lanes. Going forward, the Administration recommends increased education and awareness for all road users on how to safely navigate streets with protected bike lanes. The Administration intends to produce and deliver an educational campaign to coincide with the bike lane improvements in the spring of 2018 and will work with SGI to include information regarding protected bike lines in future editions of the Driver's Handbook.

Downtown AAA Cycling Network Plan

Several comments were received from all road users that questioned if the protected bike lanes are on the 'right' Downtown streets, citing other streets may be more appropriate for a variety of reasons. Additionally, the Administration notes that there are several imminent changes to City Centre streets that could impact how all users get around in the Downtown, notably the Traffic Bridge that will be reopened in fall of 2018 and the Bus Rapid Transit Implementation project that has begun and will identify street redesigns and station area designs. The AT Plan identified the need to complete a Downtown AAA Cycling Network Plan as a foundational action in achieving improved cycling in Saskatoon. This fall, the Administration began working on the Downtown AAA Cycling Network Plan and intends to continue this work into 2018. The Downtown AAA Cycling Network Plan will take into consideration the public input obtained through the Protected Bike Lane Demonstration Project, the operational lessons learned, and the imminent changes to Downtown's transportation network to ensure that the most appropriate streets host AAA facilities. Further engagement to determine permanent locations for protected bike lanes will be undertaken in 2018 and help to form the recommendations for the Downtown AAA Cycling Network Plan.

Options to the Recommendation

City Council may choose to remove the protected bike lanes from Downtown streets until the Downtown AAA cycling network analysis is complete. The Administration does not recommend this option as it would remove the only AAA cycling facilities currently available in the Downtown. The cost to remove the protected bike lanes is estimated to be \$37,000. Removal could take place in the spring of 2018.

Public and/or Stakeholder Involvement

Extensive and thorough engagement with external stakeholder groups, internal civic divisions, and the general public has occurred throughout the entirety of the project. Engagement occurred primarily in three phases: before the demonstration project, during the demonstration project, and near the end of the demonstration period. In addition, community input was received throughout the project via emails to the City's cycling@saskatoon.ca email account. Consultation with the Cycling Advisory Group also occurred at their regular business meetings throughout the demonstration project.

A variety of tools were used in order to provide stakeholders and the community with options to participate in ways that were convenient for them. This included open houses, stakeholder meetings, online surveys, and intercept surveys. A total of 25 engagement events occurred from August 2014 to September 2017. Public input was utilized throughout the process to improve the demonstration project. Many of these changes were implemented in the spring of 2017, with some operational changes taking place as the project evolved.

Public and stakeholder input on the demonstration project has been mixed. The majority of people who use the bike lanes commonly reported that they appreciated having their own space to ride in, making their trip downtown feel more safe and comfortable. Many users also cited that they would often go out of their way to use the bike lane as it improved their experience riding Downtown. A minority of cyclists reported that they did not like the bike lanes stating that they preferred to cycle with traffic. The majority of people who drive along these streets were dissatisfied with the protected bike lanes, commonly citing concerns such as decreased availability of parking along 4th Avenue, increased traffic delays along 4th Avenue, and that the number of cyclists observed was too low to warrant the costs to install and maintain the protected bike lane. Impact to pedestrians largely remained unchanged, with the notable exception of persons with mobility aids accessing parking along this corridor. Feedback from businesses located in the Downtown at the end of the demonstration project indicated that the bike lanes had little impact on their operations.

A summary of all the engagement events and the results of the final phase of engagement can be found in Appendix A of Attachment 1. Further engagement to determine the permanent locations for bike lanes will be undertaken in 2018 as part of the development of the Downtown AAA cycling network.

Communication Plan

Communication going forward on the protected bike lanes will focus on educational elements to improve awareness for all road users. Commonly cited concerns that will be addressed in the education plan include: how to use bike boxes, how to treat conflict points, parking next to bike lanes, and what to look for when making right-turns as a motorist. This educational campaign will be produced and delivered in spring 2018.

Future communications will also put an emphasis on fostering a forward-thinking vision for the City of Saskatoon that considers many modes of transportation for a growing population.

Policy Implications

There are no policy implications as a direct result of this report. As the Administration continues to work toward providing an AAA cycling network in the Downtown, any policies requiring changes or new policies identified will be brought forward to City Council at the appropriate time.

Financial Implications

The cost to retain the existing protected bike lanes until the Downtown AAA cycling network is developed is estimated at approximately \$80,000. These costs relate to ongoing maintenance including snow clearing and sweeping. Funding for this maintenance is included in Capital Project #2468 - Active Transportation Plan Implementation.

Other Considerations/Implications

There are no privacy, environmental or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

The Administration will report back to City Council in 2018 with the Downtown AAA Cycling Network Plan.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. Downtown Protected Bike Lane Demonstration Project – Project Summary – November 2017

Report Approval

Written by: Danae Balogun, Active Transportation Program Manager
Mariniel Flores, Transportation Engineer, Transportation

Reviewed by: David LeBoutillier, Acting Engineering Manager, Transportation
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TRANS DB - Protected Bike Lane Demonstration Project – Evaluation and Next Steps.docx

Downtown Protected Bike Lane Demonstration Project

Project Summary | November 2017

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Current Downtown Cycling Network

Legend:

- - - - Protected Bike Lanes
- - - - Shared-Use On-Road Cycling Lane
- ● ● Multi-Use Trails or Pathways
- Exclusive Bike Lanes
- ● ● ● Sharrows Wide Lane and Narrow Lanes
- - - - On Road, Sharing the Road or Bike Route

Project Background

The City's Strategic Plan and the City Centre Plan identified the need to improve cycling as a strategy to increase the attractiveness of, and access to, the Downtown for businesses, residents, visitors, employers, and their employees.

The Protected Bike Lanes Demonstration Project was established with the goal of assessing the feasibility of installing permanent protected bike lanes in the Downtown as a means to create a more accessible, attractive and friendly Downtown and promote active transportation.

Rather than committing to permanent infrastructure at the start, City Council endorsed a demonstration period to allow for the flexibility to make changes and apply lessons learned during the demonstration period. Downtown is a complex neighbourhood and getting the balance right between traffic, pedestrian, transit and cyclist circulation; parking location and availability; and business success is a part of that complexity.

In July, 2015 the protected bike lane was installed along 23rd Street from Spadina Crescent to Idylwyd Drive in both directions. This route was chosen because of its capacity to accommodate the lane with little disruption to Saskatoon Transit buses and parking. The lane also brings people who bike directly to the centre of downtown and connects with other popular cycling routes. In May of 2016, the protected bike lane along 4th Avenue was installed. This lane runs between 20th Street East and 24th Street East in both directions, and connects to the Broadway Bridge. This route was chosen because it connects to the Broadway Bridge and replaced the existing conventional bike lanes along 4th Avenue.

The implementation of the protected bike lanes required some changes to the configuration of the traffic lanes, with most of those changes occurring along 4th Avenue. 4th Avenue was reconfigured with a bidirectional (two-way) left-turn lane and one lane of traffic in each direction for the duration of the project. In addition to reconfiguration, new signs and pavement markings were installed to communicate to road users the new operations of the street. Radio advertisements, media advisories, Public Service Announcements, and instructional videos were utilized to communicate and educate road users on the changes.

In spring of 2017, the Administration made improvements to the bike lanes prior to the final summer of the demonstration utilizing feedback obtained from stakeholders and the public throughout the demonstration period. In fall of 2017, the demonstration project will conclude and City Council will make a decision on how to proceed with providing 'All Ages and Abilities' cycling facilities in the Downtown.

Engagement Summary

Extensive and thorough engagement with external stakeholder groups, internal civic divisions, and the general public has occurred throughout the entirety of the project.

Engagement occurred primarily in three phases: before the demonstration project, during the demonstration, and near the end of the demonstration period. The following targeted audiences were identified at the outset of the project. These groups were identified as having an interest in the project and were seen as valuable players to engage with in order to achieve a successful project outcome.

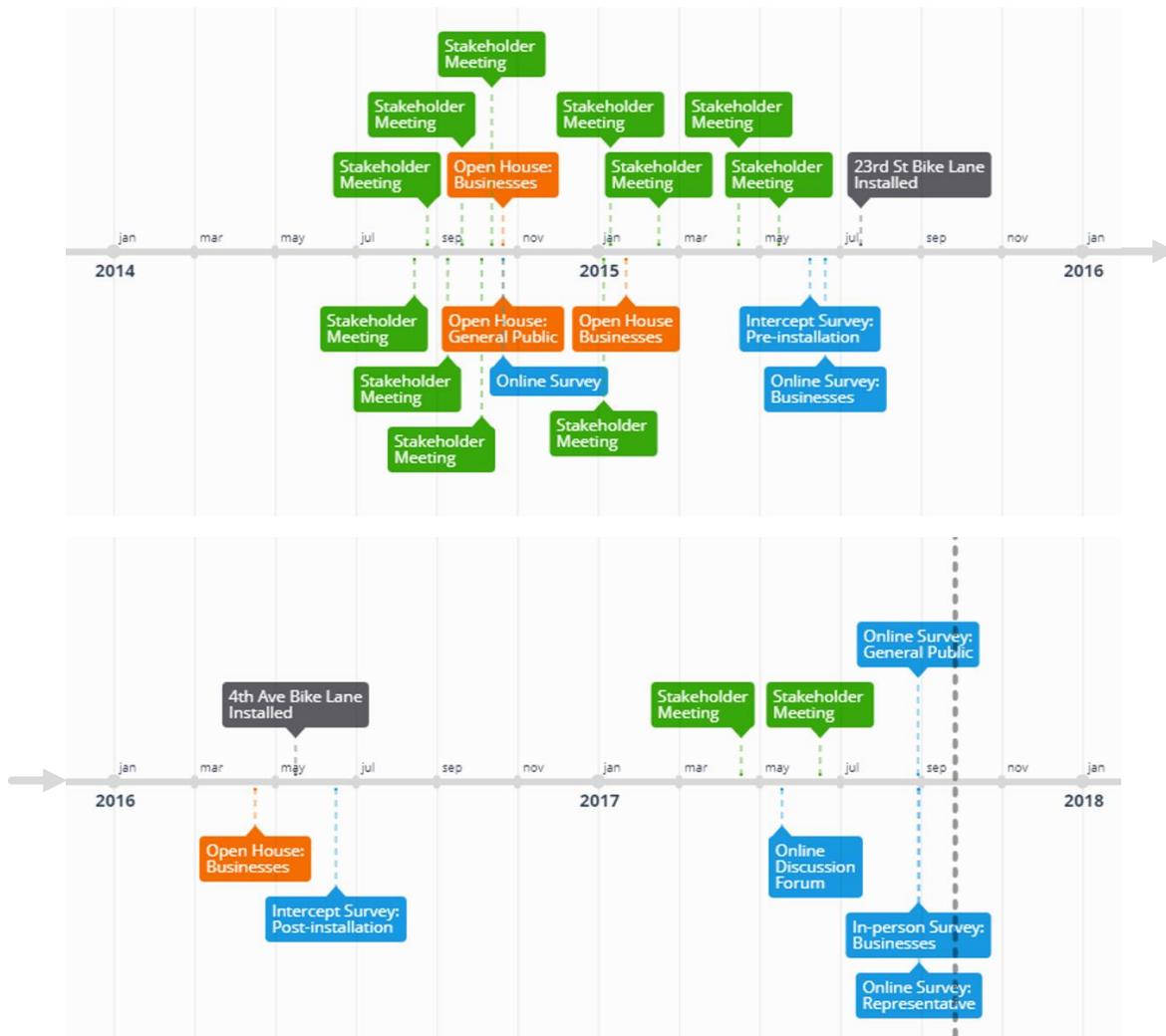
1. **City of Saskatoon Residents/General Public**
2. **External Stakeholders**
 - Downtown Business Improvement District (BID)
 - Saskatoon Cycles
 - Cycling Advisory Group
 - Tourism Saskatoon
 - Combined Business Group
 - Business & Property Owners along 23rd Street and 4th Avenue
 - Riversdale BID
- Broadway BID
- Meewasin Valley Authority
- Saskatoon Chamber of Commerce
- North Saskatoon Business Association
3. **Internal Stakeholders**
 - Fire Department
 - Roadways Division
 - Transportation Division
 - Saskatoon Transit Services
 - Saskatoon Police Service
 - Community Services Department

In addition, community input was received throughout the project via emails to the City's cycling@saskatoon.ca email account. Consultation with the Cycling Advisory Group also occurred at their regular business meetings throughout the demonstration project. A variety of tools were used in order to provide options for people to participate in a way that was convenient for them. This included open houses, stakeholder meetings, online surveys, and intercept surveys. A total of 25 engagement events occurred from August 2014 to September 2017. Public input was utilized throughout the process to make changes to the demonstration project. Many of these changes were implemented in the spring 2017, with some operational changes happening as the project evolved.

Public and stakeholder input on the demonstration has been mixed. The majority of people who use the bike lanes commonly reported that they appreciated having their own space to ride in, making their trip Downtown feel more safe and comfortable. Many users also cited that they would often go out of their way to use the bike lane as it improved their experience riding Downtown. A minority of cyclists reported that they did not like the bike lanes stating that they preferred to cycle with traffic. The majority of people who drive along these streets were dissatisfied with the protected bike lanes, commonly citing concerns such as decreased availability of parking along 4th Avenue, increased traffic delays along 4th Avenue, and that the number of cyclists observed was too low to warrant the costs to install and maintain the protected bike lanes. Impact to pedestrians largely remained unchanged, with the notable exception of persons with mobility aids accessing parking along this corridor. Feedback from businesses located in the Downtown at the end of the demonstration project indicated that the bike lanes had little impact on their operations. The Engagement Summary (Appendix A) contains additional detail on each of the events identified below.

25 Total Events

- 13 Stakeholder Meetings**
- 2 Intercept Surveys**
- 4 Open Houses**
- 1 In-person Survey**
- 4 Online Surveys**
- 1 Online Community Discussion**



Evaluation Plan

To help evaluate the success of the demonstration project, an evaluation plan was put together.

The primary success factors are related to increasing the accessibility and attractiveness of the Downtown by providing safe and viable cycling facilities. The following measures were used to evaluate the success of the demonstration project. Additional details on how each of the measures were evaluated are on the following pages.

Accessibility

| Measure | Desired Outcome | Project Outcome |
|---------------------------------|--|-----------------|
| Collision Rates | Collision rates involving cyclists are neutral or decreasing | On track |
| Bicycle Volumes | Bicycle volumes along the Project are increasing | On track |
| Automobile Travel Time | Automobile travel time is neutral | On track |
| Unlawful Sidewalk Riding | Unlawful sidewalk riding is neutral or decreasing | Watching |

Attractiveness

| Measure | Desired Outcome | Project Outcome |
|---|---|-------------------|
| Satisfaction with the Project | Satisfaction with the Project amongst road users is neutral or positive | Needs Improvement |
| Perceptions of Safety by Protected Bike Lane Users | Perceptions of Safety by Protected Bike Lane Users are positive | On track |
| Economic Vitality | Businesses are neutrally or positively impacted by the Project | On track |

Measuring Accessibility: Collision Rates



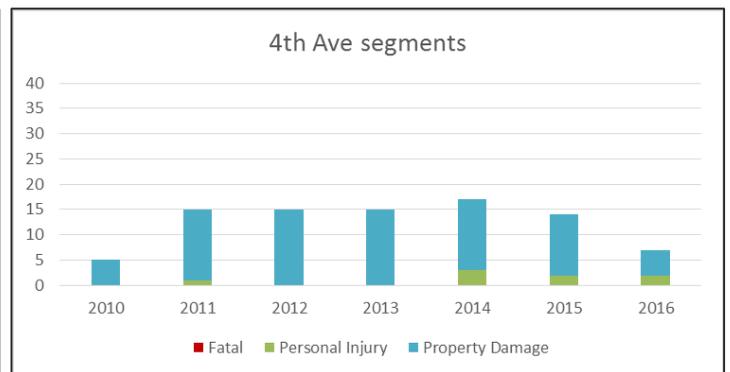
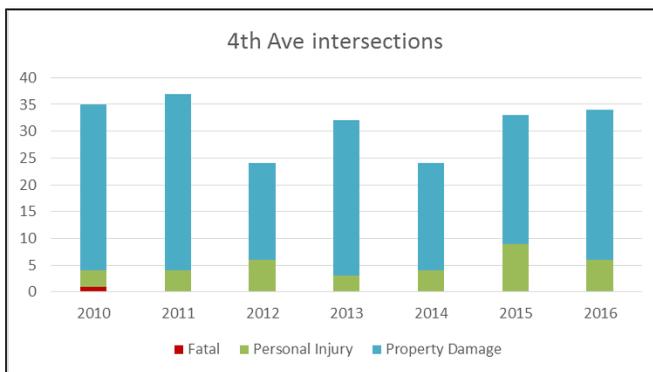
The frequency and severity of collisions are decreasing

Collisions reported along the protected bike lane routes are shown in the charts in below. Collision data is provided by SGI and includes data for all modes. 2017 data is not included as it is not yet complete (only available up to February 2017).

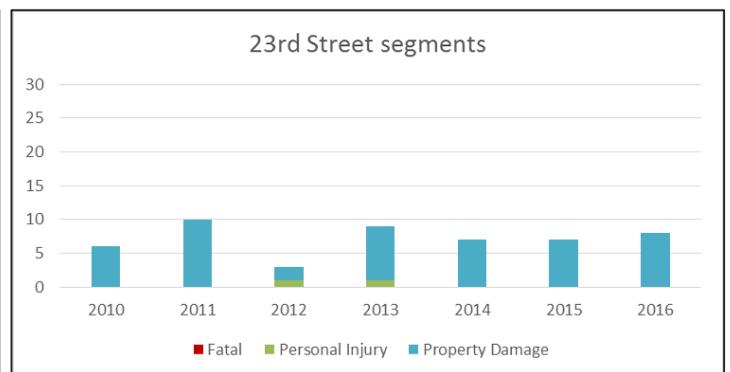
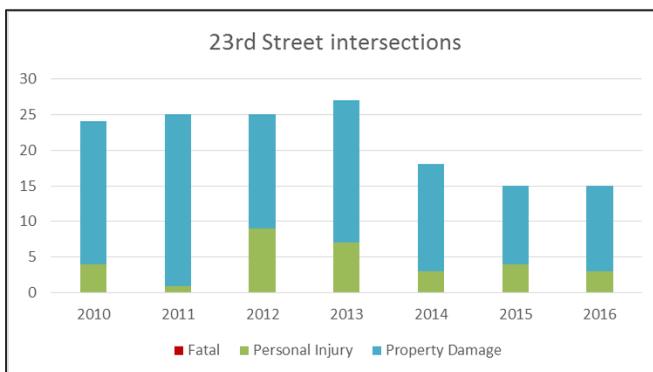
Collisions Reported For All Modes

Generally, there is a decreasing trend in the frequency and severity of collisions along 23rd Street and 4th Avenue as shown in the graphs below. The data has been categorized into incidents occurring at intersections and incidents occurring in segments (between intersections).

4th Avenue Collision Data (all modes)



23rd Street Collision Data (all modes)

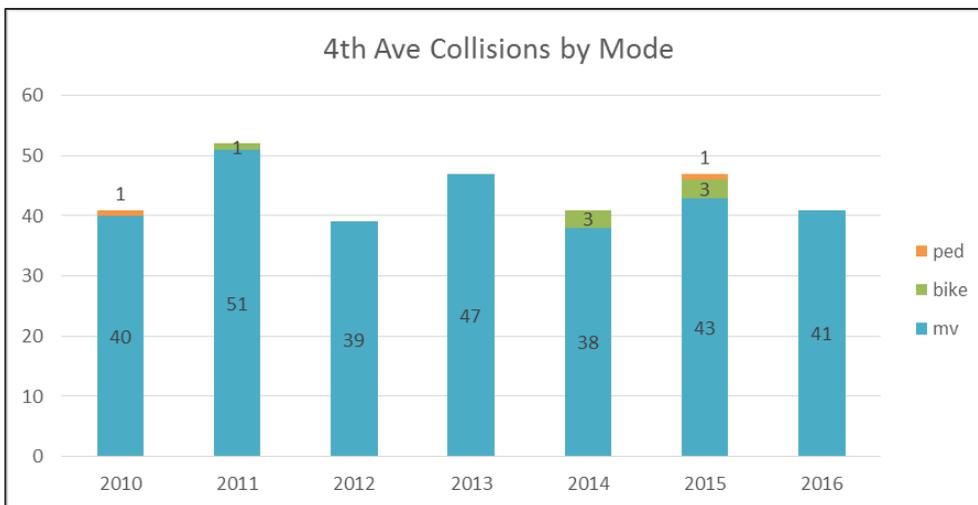


Measuring Accessibility: Collision Rates

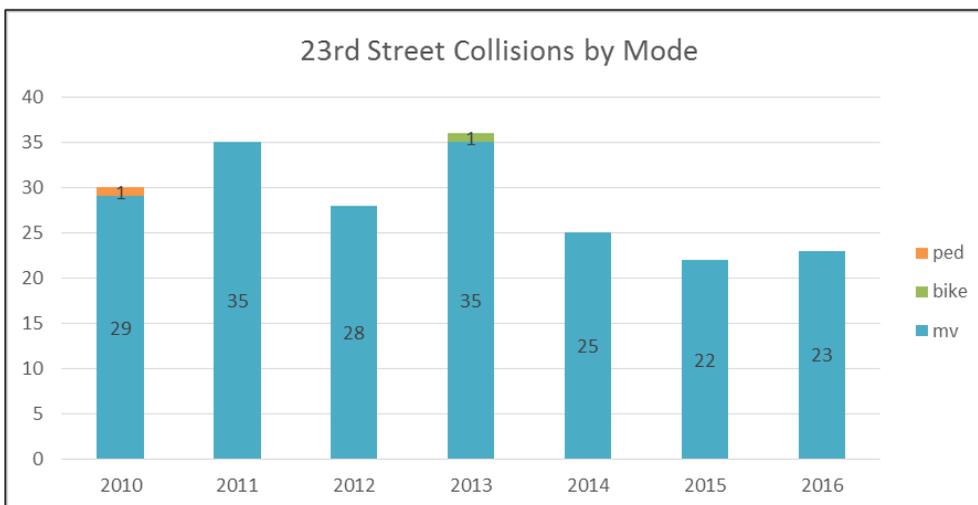
Collisions Reported by Mode

Generally, there is a decreasing trend in the frequency of collisions along 23rd Street and 4th Avenue involving cyclists as shown in the graphs below.

4th Avenue Collision Data by Mode



23rd Street Collision Data by Mode



Measuring Accessibility: Protected Bike Lane Volumes



Bicycle volumes along the Project are increasing

As the table indicates below, the average volume of cyclists per day counted along 23rd Street and 4th Avenue has increased every year since the lanes were installed.

Count data was collected throughout the duration of the project to monitor the volume of people using the bike lanes. Two different types of counters have been installed in the protected bike lanes along 23rd Street and 4th Avenue to measure cyclist volumes. Both of these counters use the same technology as the counters used to monitor motor vehicle volumes, but are more sensitive to bicycles. As with motor vehicle counts, counters do not distinguish between unique users. In other words, any time a bicycle crosses the counter, it is recorded.

During the demonstration, annual average daily bicycle traffic (AADBT) was calculated for data collected in 2014 and 2016. The 2017 AADBT will be calculated once data collection is complete for the year. For 2017, the Average Daily Bike Traffic (ADBT) is determined as the average of daily totals during the period in which data was collected.

Average Cyclists per Day (in both directions)

| | AADBT (factored) | | ADBT Average (unfactored) |
|-------------------------|---------------------|------|------------------------------|
| | 2014 | 2016 | 2017 |
| 23rd Street | | | |
| Wall St to Pacific Ave | | 140 | |
| Ontario Ave to 1st Ave | 60 | 120 | 150 |
| 1st Ave to 2nd Ave | | 80 | |
| * 3rd St to 4th St | 30 | 90 | 110 |
| 4th Ave to 5th Ave | | 70 | |
| 5th Ave to Spadina Cres | | 70 | 80 |
| 4th Avenue | | | |
| 20th St to 21st St | 50 | 190 | 310 |
| 21st St to 22nd St | 40 | 160 | |
| * 22nd to 23rd St | | 170 | 230 |
| 23rd St to 24th St | | 110 | 220 |

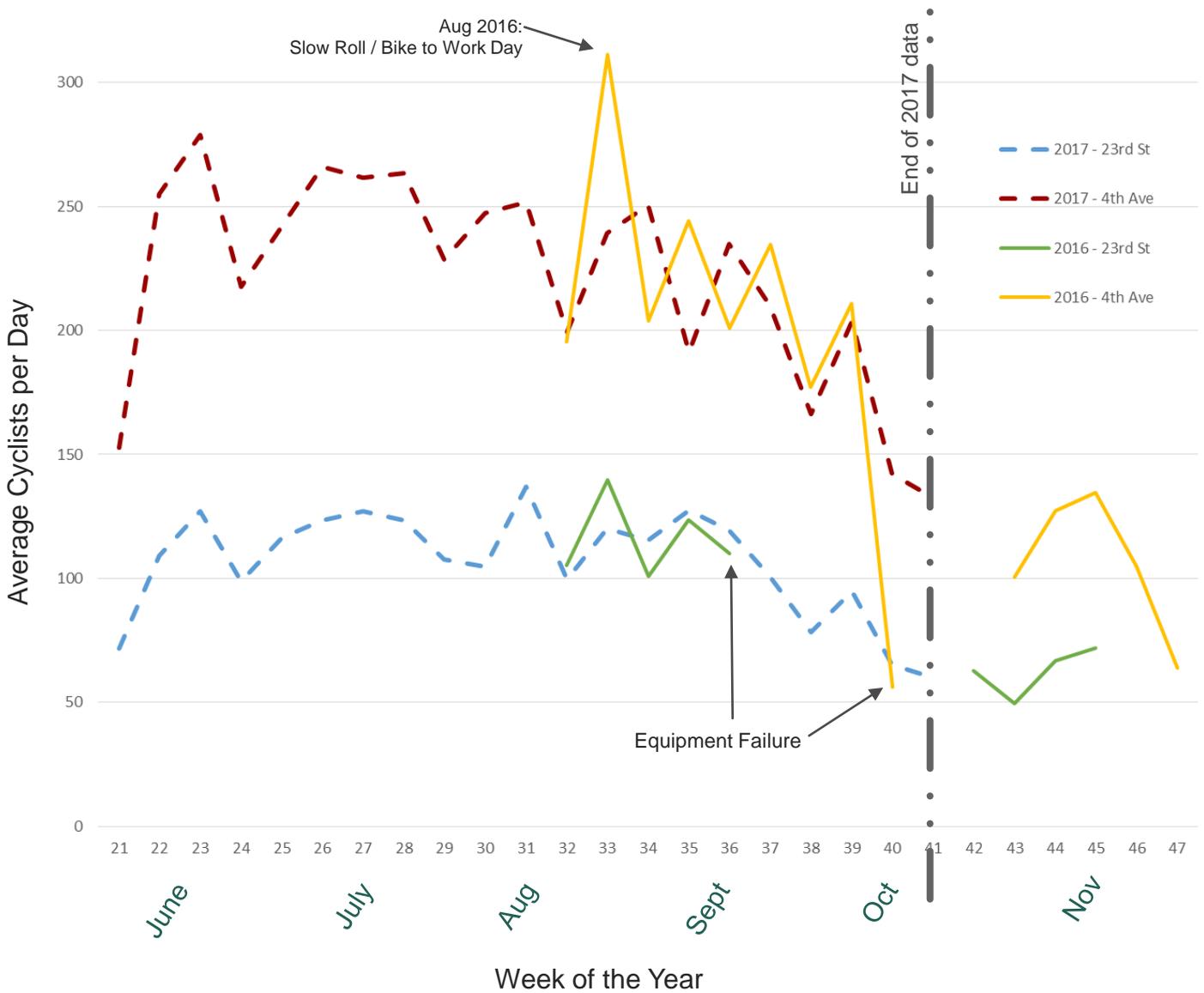
*Continuous Bicycle Counters

Count data is collected through the spring, summer and fall, but cannot be collected in snow conditions as the tubes interfere with snow removal. To determine the annual average daily bicycle volumes for the months without count data, counts are factored by tying into the permanent counters along the MVA trail. More information on the count data is included in Appendix B.

Measuring Accessibility: Protected Bike Lane Volumes

The graph below shows the average cyclists counted per day on a given week of the year. The data shows that while there are weekly fluctuations in the average number of people using the lanes, in the late spring, summer and early fall of 2017 the average number of cyclists recorded along 4th Avenue oscillated between 200 and 250, with a few days exceeding 250. Along 23rd Street, these volumes are lower, but still remain fairly constant between 100 and 125 average cyclists per day.

Average Cyclists per Day (in both directions)



Measuring Accessibility: Automobile Travel Time



Increases in automobile travel time are modest or neutral

Traffic conditions before and after the installation of protected bike lanes were assessed and compared. Two metrics of the analysis are presented below:

- **Level of service (LOS)** ratio is a term used to qualitatively describe the operating conditions of a roadway based on factors such as speed, travel time, manoeuvrability, delay, and safety. The LOS of a facility is designated with a letter A to F, with A representing the best operating conditions and F the worst.
- **Average travel time** is the average time it takes a driver to travel the length of the corridor.

The table below shows that the overall intersection LOS remained at LOS B for both 4th Avenue and 23rd Street in the p.m. peak hour. LOS B indicates that traffic is flowing well with little delay.

Additionally, the table below indicates that the average travel time for motorized vehicles traveling along 4th Avenue and 23rd Street has increased by approximately 20 seconds during the p.m. peak hour.

Although travel times for motorists have increased along these streets, the increase has not resulted in any change to the level of service along 4th Avenue and 23rd Street.

Motorized Traffic Summary (p.m. peak hour)

| Street | 2014 | | 2017 | | Difference | |
|---|------------------|---------|-------------------|---------|------------|---------|
| | Pre-Installation | | Post-Installation | | | |
| 4th Avenue (19th Street to 24th Street) | | | | | | |
| | NB | SB | NB | SB | NB | SB |
| Intersection Level of Service (LOS) | B or better | | B or better | | / | |
| Average Travel Time | 154.2 s | 156.5 s | 173.2 s | 178.1 s | + 19 s | +21.6 s |
| 23rd Street (Idylwyld Drive to Spadina Crescent) | | | | | | |
| | EB | WB | EB | WB | EB | WB |
| Intersection Level of Service (LOS) | B or better | | B or better | | / | |
| Average Travel Time | 130.4 s | 127.7 s | 149.4 s | 151.5 s | + 19 s | +23.8 s |

Detailed results from the traffic analysis can be found in Appendix C.

Measuring Accessibility: Unlawful Sidewalk Riding



Unlawful sidewalk riding remains unchanged

Sidewalk riding in Downtown largely remains unchanged with the installation of the bike lanes. However, these incidences of sidewalk riding are low. Education and enforcement are suggested approaches to continuing to reduce the occurrence of sidewalk riding in the Downtown. Incidences of sidewalk riding was anecdotally collected through staff observation during the Project.

Measuring Attractiveness: Road User Satisfaction



Satisfaction with the Project amongst road users is divided

Community feedback indicated that motorists feel that the protected bike lane have disrupted traffic flow along 4th Avenue, often citing increased congestion, discomfort making right turns across the bike lanes, and increased challenges with finding parking along 4th Avenue. Similar sentiments were expressed for 23rd Street, although less so than 4th Avenue. Pedestrian experience seems to be largely unchanged due the bike lanes, although a slight majority of the survey respondents indicate that the bike lanes have improved the safety of people walking Downtown (53%). People using the bike lanes did indicate that they found the bike lanes improved their accessibility through the Downtown, with some stating that they go out of their way to use the bike lanes when travelling to or through Downtown. Users did note that the transit mall on 23rd Street decreased the accessibility of the east-west route. Several comments were received that indicated improved network connections beyond the Downtown protected bike lanes would improve their ability to access the Downtown, asking that more protected bike lanes be installed in areas outside the Downtown.

Additional information on feedback obtained through the Project can be found in Appendix A.

Representative Survey

Thoughts on Protected Bike Lane Demonstration:

(Open-ended question)

| | |
|---|---|
| <p>Positive Sentiments</p> <p style="font-size: 2em; color: #00a0e3; font-weight: bold;">41%</p> | <p>Top Positives:</p> <ul style="list-style-type: none"> • Good idea/like it (24%) • Safety of cyclists from motorists (12%) • Promotes alternative transportation (6%) |
| <p>Negative Sentiments</p> <p style="font-size: 2em; color: #c00000; font-weight: bold;">66%</p> | <p>Top Negatives:</p> <ul style="list-style-type: none"> • Poorly planned/confusing (16%) • Never or rarely used (14%) • Waste of taxpayer money (14%) |

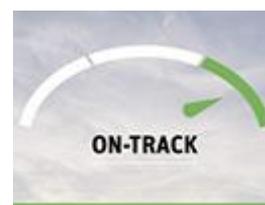
Measuring Attractiveness: Bike Lane User Perception of Safety



Protected bike lane users feel safer using the bike lanes

The majority of comments received from people using the protected bike lanes indicated that the bike lanes have made their trips Downtown by bicycle more comfortable and safe. They attribute this increased feeling of safety to the added protection provided by being physically separated from moving traffic, the provision of their own space where they can travel at their own pace, and a reduced fear of being passed too closely by a vehicle or dodging a car door. Further supporting these comments, 73% of Representative Survey respondents who ride their bike downtown felt that the bike lanes have had a positive impact on safety. A minority of bike lanes users feel that the lanes make them feel unsafe, especially at conflict points such as driveway crossings and intersections, as they feel 'hidden' behind parked cars.

Measuring Attractiveness: Economic Vitality



Businesses are neutrally or positively impacted by the Project

Broadly speaking, six in ten businesses believe the protected bike lanes have had a positive impact on downtown, whereas three in ten feel that it has had a negative impact. A majority of downtown businesses believe that protected bike lanes have had no impact on their business. Modest proportions believe the bike lanes have had a positive impact in specific areas noted below, with the exception of parking availability.

Additional information on feedback obtained through the Project can be found in Appendix A.

| | Positive | Negative | No Change | Not Sure |
|--|----------|----------|-----------|----------|
| Overall impact | 33% | 18% | 47% | 2% |
| Your employees | 27% | 6% | 59% | 8% |
| Foot traffic in general | 26% | 5% | 65% | 4% |
| Reaching new customers that you wouldn't have otherwise | 25% | 0% | 70% | 5% |
| Ease of accessing your business | 24% | 14% | 59% | 3% |
| Customer mood | 19% | 15% | 61% | 5% |
| Parking availability for customers | 11% | 26% | 60% | 3% |
| Curb appeal of your business | 9% | 5% | 80% | 6% |

Project Adjustments

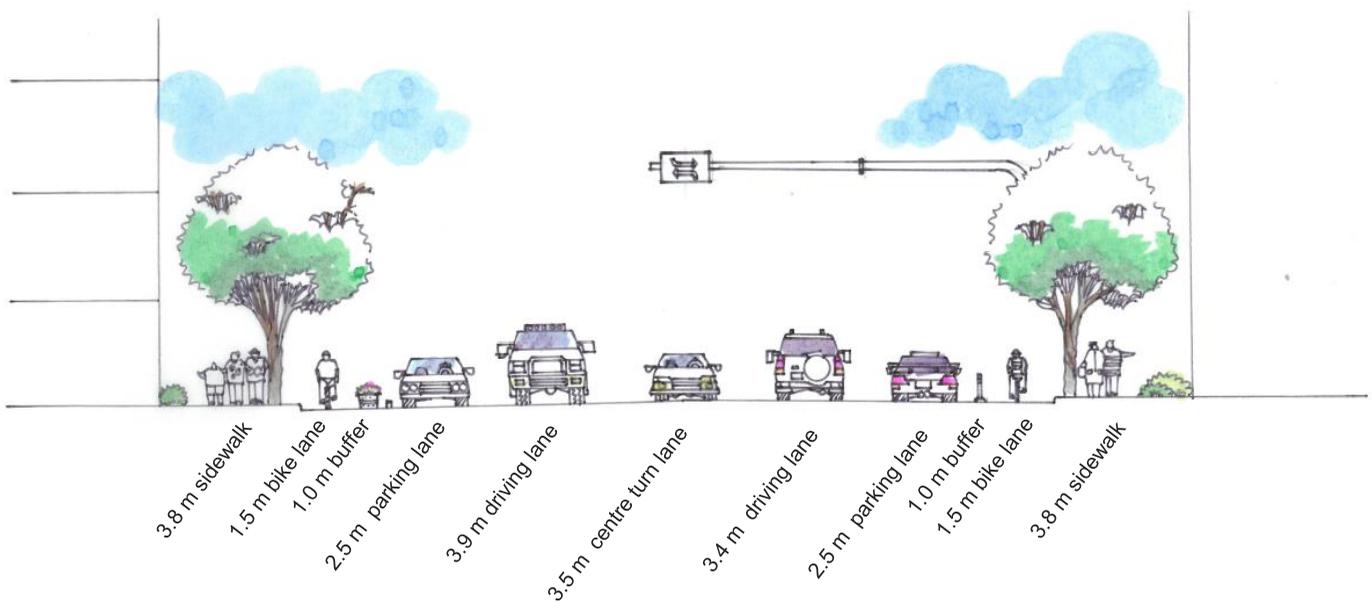
Adjustments were made to the bike lanes during the demonstration period based on public input and monitoring by the Administration.

| CONCERN | WHAT WE HEARD | WHAT WE'VE CHANGED |
|--|--|---|
| Signs for motorists are not easily visible | Signs reminding motorists making right-turns to yield to people riding in the bike lanes are hard for drivers to see. | The signs were originally placed on the curb on the sidewalk. To improve visibility of these signs for motorists on 4 th Avenue, these signs were moved in the buffer between the bike lane and the driving lane. These changes were not made to 23 rd Street because transit bus stops near the corner does not allow this adjustment. |
| Driving lane shifts through intersections (driving lanes don't match) | After installation, the driving lane lines at some intersections on 4 th Avenue did not line up perfectly. | The driving lane widths were adjusted to improve the traffic lane transitions. |
| Poor visibility of cyclists at intersections | Right turning motorists have found it difficult to see cyclists approaching intersections, especially if there are several parked cars. | To improve visibility, the bike lanes on 4 th Avenue have been reconfigured. A "bend-in" design at the intersection moves the cyclists in line with the traffic lanes and provides better sight-lines for all users. The "bend-in" design was not applied to 23 rd Street as the current conditions of the street facilitate visibility at intersections. |
| Motorists turning in and out of driveways | Motorists and cyclists had safety and visibility concerns at driveways. | The painted buffer at driveways were changed from a 20 degree angle to a 90 degree angle to promote a slower turn and improve visibility. This change encourages drivers to approach the driving lane at a right angle, improving sight lines and reducing right turn speeds. |
| Delays due to No Right Turn on Red restriction | The "No Right Turn on Red" restrictions on cross-streets were put in place to prevent motorists from entering the bike boxes where cyclists may be waiting. Motorists found this restriction unnecessarily increased delay, especially when the bike box was unoccupied. | The "No Right Turn on Red" restriction was removed. Motorists are now permitted to turn right at a red light. A "Turning Vehicles Yield to Bikes" sign has been put up in its place. This sign still requires motorists turning right at a red light to yield to a cyclist in the bike box. If a cyclist isn't present, motorists may proceed with their right turn. |
| Confusion about parking next to the protected bike lanes | Although most people are now familiar with how to park next to the protected bike lanes, those encountering the bike lanes for the first time may require additional instruction. | Additional signs have been installed on bike lane delineator poles, which have been effective in marking "No Parking" areas. |

Proposed Project Adjustments

Opportunities to make further improvements to the protected bike lanes have been identified in order to improve operations and address some of the concerns identified through the demonstration project.

These issues were not addressed during the demonstration because the work was more costly or substantial than the limitations of a temporary demonstration would allow, but can be upgraded after the demonstration. The cost to improve the existing protected bike lanes along 23rd Street and along 4th Avenue is estimated at \$150,000. This would include costs for overhead signage, concrete parking curbs, planters, and transit platforms. Additional details on the proposed design elements can be viewed in Appendix E.



1. Overhead Sign & Structure



Overhead signs and structures can be added to clearly mark the lane designations, improving clarity of lane assignments for motorists.

2. Concrete Parking Curb



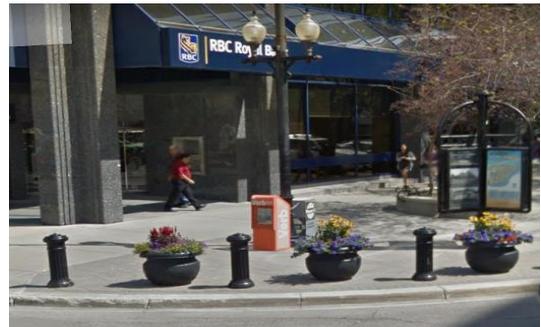
The addition of pre-cast curbing placed in the existing painted buffer area provides additional guidance for people parking, as well as additional protective barrier for people using the bike lane.

3. Delineator Post



The white delineator posts would be used primarily at conflict points to provide guidance for motorist turning movements and additional protection for cyclists.

4. Planter



At intersections, decorative planters could be used instead of white delineator poles to guide traffic movements and provide protection for cyclists, as well as making the bike lanes more visually appealing.

5. Transit Platform



Transit platforms provide a raised landing area for passengers boarding and alighting transit. The platform eliminates grade changes for pedestrians, while providing a ramp on either end to accommodate cyclists passing over the platform. Shown is a temporary transit platform.

6. Accessible Parking Space



Improvements include a wider parking space to permit adequate space for ramps to be deployed, a buffered connection to an existing curb ramp, and a narrowed bike lane to slow cyclists adjacent to the accessible parking stall.

Appendices

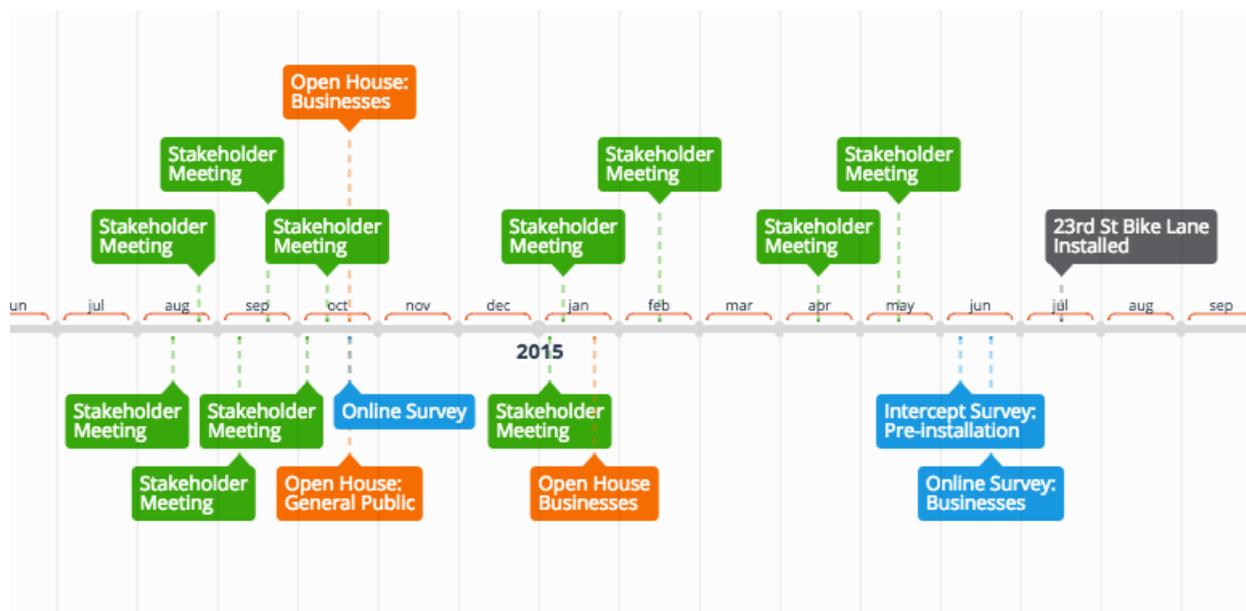
- Appendix A** Engagement Summary
- Appendix B** Count Methodology
- Appendix C** Detailed Traffic Analysis
- Appendix D** Best Practices
- Appendix E** Design Elements
- Appendix F** Maintenance Summary

A variety of tools were used in order to provide options for people to participate in a way that was convenient for them. This included open houses, stakeholder meetings, online surveys, and intercept surveys. The following sections discuss each phase in more detail.

Pre-Demonstration Phase
August 2014-July 2015

The purpose of engaging prior to the installation of the protected bike lanes was to work with key stakeholders and civic divisions to identify potential issues, possible solutions, discuss communication strategies, and establish project success factors. Open Houses were also held to gauge community support for the project prior to installation.

A total of 17 different engagement events occurred prior to the installation of the protected bike lanes on 23rd St. Below is a summary of those events.



Engagement Events Aug 2014 - Jul 2015

Open Houses

Approximately 70 people attended the two public open houses in October 2014: one in the afternoon for businesses and stakeholders, a second in the evening advertised to the general public. Twelve comment forms were received from stakeholders or businesses. 43 comments forms were received at the public open house in the evening.

A third open house was held in January 2015 to report back to the businesses on what the installation along 23rd Street would look like.

Online Survey

The content at the open houses in October 2014 was also made available on the *Shaping Saskatoon* website. The online forum generated another 15 comments, and a survey posted on the website was completed by 482 respondents.

Stakeholder Meetings

A total of 11 stakeholder meetings occurred in the first phase of engagement. Eight of these stakeholder meetings were presentations and discussions with individual organizations to address specific questions or concerns, while the remaining three involved all stakeholders to the table at the same time to ensure effective issue identification and problem solving.

Street Intercept Survey – Pre-installation

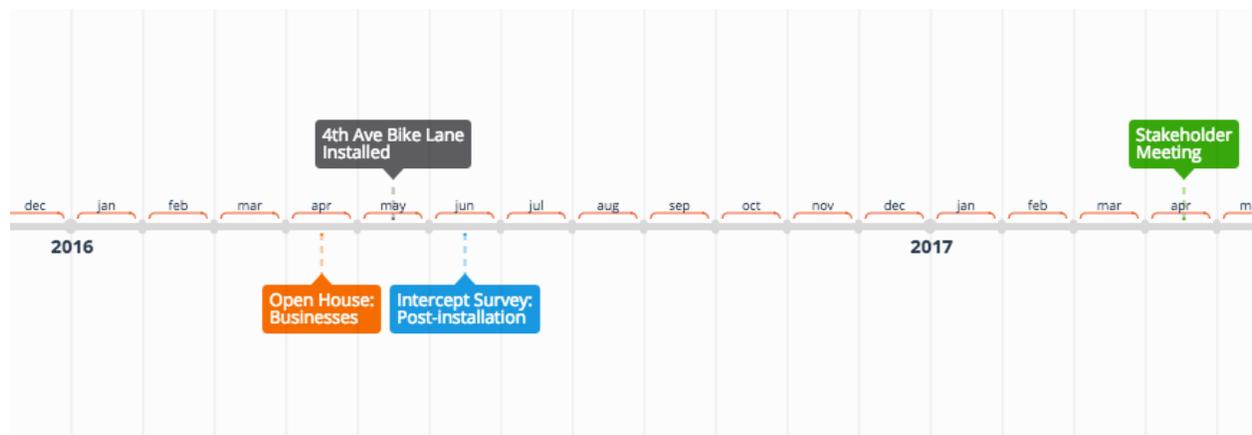
Intercept surveys were conducted by City staff to determine why and how people currently access 23rd and 24th streets and to determine perceptions of safety, accessibility and vibrancy of 23rd Street and 24th Street pre-project. A total of 61 people were interviewed.

Online Survey – Businesses

As part of the Demonstration Project, we asked business owners in the Downtown area to complete a short online survey prior to the opening of the 23rd Street protected bike lane. The survey was designed to measure businesses’ perceptions of how protected bike lanes in the Downtown may impact various aspects of their business. A total of 59 businesses completed the online survey.

**Mid-Demonstration Phase
April 2016-April 2017**

The purpose of engagement during the demonstration project was to provide a mechanism for sharing updates on how the demonstration was proceeding as well as provide an opportunity to discuss with key stakeholders improvements that could be made mid-project. One open house for businesses, one intercept survey, and one stakeholder meeting occurred during this phase. In addition to these scheduled tools, a number of email communications were received throughout the duration of the project. It should also be noted that during the mid-demonstration phase, a number of changes were made to the bike lanes as a result of the feedback obtained throughout the demonstration project (see Attachment 1).



Engagement Events Apr 2016 - Apr 2017

Open House: Businesses

An information meeting was held in April 2016 prior to the installation of the protected bike lane along 4th Avenue. The purpose of this meeting was for businesses along 4th Avenue to have an

opportunity to learn about the project, ask questions prior to installation, and provide an update on the timelines for installation.

Intercept Survey – Post Installation

Intercept surveys were conducted by City staff to learn what transportation mode they used to arrive Downtown and to determine their perceptions of accessibility and vibrancy of 23rd Street and 4th Avenue. A total of 290 pedestrians were interviewed.

Stakeholder Meeting

A stakeholder meeting was held in April 2017 to present what the City had heard so far, the changes were being implemented to address comments and concerns received during the demonstration period, as well present the findings of the data collection to date. Following this meeting, a follow up presentation was requested by the North Sask Business Association.

Final Demonstration Phase May 2017-September 2017

The purpose of engagement during the final phase of the demonstration was to provide an opportunity for the community to share their comments on the project after improvements had been made based on what we learned through the demonstration. A total of 4 tools were used in this phase to receive feedback from the community and included an online community discussion on Shaping Saskatoon, an online survey open to the public, a statistically representative survey, and in-person interviews with businesses near the demonstration project area. It should also be noted that 79 emails were received during the period of the discussion forum as some individuals had technical difficulties accessing the online forum.



Engagement Events May 2017 - Sep 2017

Shaping Saskatoon Online Discussion

Near the end of the demonstration and evaluation period of the project, two questions were posted on the Shaping Saskatoon website. The City asked the community to comment on what they liked about the protected bike lanes, and what could be improved. 115 people participated on the forum, leaving 252 comments. A summary of the findings is contained in Attachment 2.

Online Survey: Public Input Survey

To wrap up the demonstration project, the City conducted a survey to identify the best ways that people can share the streets, whether they choose to drive, cycle, or walk. The purpose of this survey was to help the City plan the Downtown transportation network and active transportation infrastructure.

1,363 people responded to the survey. The input received through this survey will be used to inform the Active Transportation Plan and Downtown 'All Ages and Abilities' (AAA) cycling network, help make decisions about any desired tweaks to the current temporary protected bike lanes, and understand design preferences for permanent protected bike lanes in the future.

Online Survey: Representative Survey

The same survey that was made available to the public was also administered to Inshtrix's SaskWatch Panel. The purpose of this survey was to obtain input from a population sample that is representative of Saskatoon's residents. 1004 people completed this survey.

The results of both the Public Input Survey and the Representative Survey can be found in Attachment 3.

Business Intercept Survey

To collect opinions from downtown businesses, intercept interviews were conducted. Specifically, Inshtrix Research interviewers entered randomly selected businesses located in the downtown core (between the river, 25th Street and Idylwyld Drive) and approached business decision makers to participate in a short interview. The purpose of this survey was to understand the businesses' perceptions of the protected bike lanes and understand any impacts that the demonstration project may have had on their business operations. 100 businesses were interviewed.

The results of the Business Intercept Survey can be found in Attachment 4.

Protected Bike Lane Demonstration Project: Recent Improvements

Based on feedback obtained from stakeholders and the public before May 2017, some improvements have been made to the bike lanes for the final summer of the demonstration. The following information outlines what we heard, and what has been changed to address the concerns.

| CONCERN | WHAT WE HEARD | WHAT WE'VE CHANGED |
|--|--|---|
| Signs for motorists are not easily visible | Signs reminding motorists making right-turns to yield to people riding in the bike lanes are hard for drivers to see. | The signs were originally placed on the curb on the sidewalk. To improve visibility of these signs for motorists on 4 th Avenue, these signs were moved in the buffer between the bike lane and the driving lane. These changes were not made to 23 rd Street because transit bus stops near the corner does not allow this adjustment. |
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| Confusion about parking next to the protected bike lanes | Parking next to the bike lanes can be confusing. Although most people are now familiar with how to park next to the protected bike lanes, those encountering the bike lanes for the first time may require additional instruction. | Additional signs have been installed on bike lane delineator poles, which have been effective in marking "No Parking" areas. |

Protected Bike Lane Demonstration Project: Potential Improvements

If the bike lanes become permanent, additional improvements may be made in the future. The following information outlines what we heard prior to spring 2017 and what could be considered for future improvements.

| CONCERN | WHAT WE HEARD | WHAT COULD BEEN DONE IN THE FUTURE |
|---|--|--|
| The bidirectional (two-way) left-turn lane on 4th Avenue is confusing | The two-way left-turn lane on 4th Ave was causing confusion. People driving were not sure if the lane was available for all purposes (left turns, passing, driving) or designated for specific functions. | Overhead signs can be added to clearly mark the lane designations. |
| Cyclist delay due to two-stage left turns in bike boxes | Two-stage left turn bike boxes are complicated and inconvenient for both cyclists and motorists. | One-stage left turns in bike boxes may be considered to reduce cyclist delay in the bike boxes. However, these would require cyclists to move into the traffic stream, thereby reducing safety. |
| Inability to park adjacent to the curb for people with disabilities | The installation of the bike lane prevents people with disabilities from being able to park adjacent to the curb in the protected bike lane locations. | Accessible parking can be provided next to a raised platform that connects to the sidewalk. This would include a highly visible crosswalk with warning signs for cyclists to slow down. |
| The paint for the bike lane wears off | The paint used for the demonstration project wore away quickly. | Durable pavement markings can be used. |
| The bike lanes do not connect to other cycling infrastructure. | <ul style="list-style-type: none"> • 4th Avenue Although the bike lane connects to the shared pathway at the bottom of the Broadway Bridge at the south end, it ends abruptly at 19th and 24th streets. • 23rd Street At the east end, the bike lanes connect to Spadina Crescent's on-street bike lanes. At the west end, the bike lanes end abruptly at Idylwyld Drive. | <ul style="list-style-type: none"> • Planning for a downtown All Ages and Ability network was identified as a high priority in the Active Transportation Plan. • Intersection improvements at 19th Street and 3rd Avenue and 4th Avenue are being developed and will include cycling accommodation. • The Imagine Idylwyld project is redesigning the intersection at 23rd Street to provide cycling facilities to connect to the Blairmore Bikeway (23rd Street bike boulevard). |

Protected Bike Lane Demonstration Project: Ongoing Improvements and Education

| | |
|---|--|
| <p>Traffic seems to move slower on 4th Avenue</p> | <ul style="list-style-type: none"> • Monitoring of traffic flow has shown that travel times increased about 20 seconds for the average trip along 4th Avenue during a peak period. Queuing time for motorists at intersections has not increased beyond an average of 25 seconds per vehicle during the afternoon peak hour. • Although the amount of road space devoted to motor vehicles is reduced, the assignment of left-turn lanes increases traffic predictability throughout the corridor. • Turning in and out of driveways during the evening rush hour may take longer for drivers to find a gap in traffic. |
| <p>Snow / Ice / Water</p> | <p>The City’s goal is to have the bike lanes cleared 48 hours after the end of a major snowfall event. The lanes are cleared and treated with sand as needed between snow events.</p> <ul style="list-style-type: none"> • Businesses pushing snow into bike lanes In the downtown, snow removal is timed to allow properties to push their snow onto roadways - parking or bike lane – up to 24 hours after a snow event. The City then removes this snow during clean-up. Most downtown businesses are able to comply. Notices were issued to several businesses this winter who were repeatedly piling snow into the lanes that had already been cleared by the City. The City relies on calls to Public Works Dispatch to identify these locations and proceed with getting them cleared. • Water/ice accumulating in the bike lane This is a function of the bike lane placement adjacent to curb as well as pavement condition. Water drains to gutters and catch basins on either side of the street and are the lowest points on the road. Typically, accumulated water and ice is covered by parked vehicles. During the spring thaw, some accumulation is natural although catch basins may become obstructed and need City intervention. <p>Pavement deterioration on 23rd Street has definitely contributed to drainage issues. Resurfacing is planned for 2018 between 4th Avenue and Spadina Crescent.</p> |
| <p>Debris in the bike lanes</p> | <p>The gutters will naturally accumulate natural debris including grass clipping and leaves. The City is pleased to partner with the Downtown Saskatoon Business Improvement District (DTN YXE) in sweeping the bike lanes in 2017.</p> |
| <p>Missing/damaged Poles</p> | <p>Poles near bus stops and some corners were being hit repeatedly and were removed. The City relies on notification of damaged poles so that they can be repaired quickly.</p> |

| | |
|--|---|
| <p>Immediate response to maintenance issues</p> | <p>Every block of the bike lanes cannot be inspected daily. The City requests that people call Public Works Dispatch to identify hazardous conditions and their specific location in order to get the problem fixed quickly. This includes:</p> <ul style="list-style-type: none"> • Snow pushed into the bike lanes after they have been cleared • Clogged catch basins • Dangerous glass or debris in the bike lanes • Poles damaged or knocked down |
| <p>White delineator poles</p> | <p>White “delineator” poles along with a painted buffer were used to physically separate and protect people cycling in the bike lanes. Since this is a demonstration project, this separation treatment was selected as it was the quickest and least expensive.</p> <p>If the protected bike lanes become permanent, different separation options will be considered. Different types of barriers that can be used between the parking and bike lane include: planters, raised concrete curbs and different pole or bollard designs.</p> |
| <p>Vehicles blocking the bike lanes</p> | <p>While protected bike lanes separate cyclists from motor vehicles, conflict points will remain as people need access to back lanes and parkades in a busy downtown centre. Everyone needs to remain alert.</p> |
| <p>Continuing education</p> | <p>Motorists, cyclists, pedestrians and transit users are still adjusting to the introduction of the protected bike lanes. Flyers/pamphlets or other communications can be considered to further educate road users.</p> |
| <p>Transit terminal location</p> | <p>Cyclists are required to dismount and walk their bike across the transit terminal. However, the transit terminal is expected to be relocated in the not too distant future with the implementation of Bus Rapid Transit.</p> |
| <p>Buses stopping in the protected bike lanes</p> | <p>Cyclists are required to wait behind a bus that is stopped in the bike lane to load/unload passengers. Transit platforms could be installed outside the bike lanes so that buses would no longer block the bike lane.</p> |
| <p>People with mobility limitations (wheelchairs and scooters) using bike lanes</p> | <p>People may find that the bike lanes offer a smoother path. The City will look into the bylaw ramifications and how best to accommodate all users.</p> |
| <p>Proper work zones</p> | <p>It is important that proper work zones are set up when there is construction in the protected bike lane. Guidelines will be developed to ensure proper work zones are barricaded and signed appropriately.</p> |

Shaping Saskatoon Online Discussion: Summary

 May 15 – June 15, 2017

 Total Participants: 115

 Total Comments: 252

Introduction

The online discussion forum was an opportunity for Saskatoon residents to tell us what they liked about the protected bike lane demonstration project, and what the City could improve. 252 comments were received. Two primary questions were asked, 'What do you like about the bike lanes?' and 'What could be improved?'. Below is a summary of all comments received, categorized by question.

Common Goals for All Users

Upon reviewing the comments received from all users of 4th Avenue and 23rd Street, the following are common goals that all users would like to see achieved on these streets:

Safe: All users want to arrive at their destination safely.

Efficient: All users want to arrive at their destination as efficiently as possible.

Predictable: All users want to know and understand how to interact with one another.

Cost-Effective: All users would like civic dollars allocated in an efficient manner.

Access to Parking: All users want access to convenient end-trip facilities (parking).

Respect: All users wasn't to be treated respectfully while commuting to their destination.

What do you like about the protected bike lanes?

Safety and comfort were the two most commonly noted items for what people liked about the bike lanes. Below is a summary of what respondents told us they liked about the protected bike lanes.

SAFETY

A common theme among those who used the bike lanes indicated that the bike lanes made them feel safer cycling on the downtown streets. Reported reasons for feeling safe included:

- being physically separated from traffic
- having a physical barrier between the bike lane and the driving lane

It is important to note that some users felt less safe due to being hidden behind parked cars and less visible to motorists at intersections and driveway crossings.

COMFORT

Users indicated that the protected bike lanes made their ride through the downtown more comfortable. They stated that the protected bike lane made their ride less stressful, as they did

not feel pressure from motorists because they had their own space where they could travel at their preferred speed.

Others commented that riding in the bike lanes was less intimidating than riding on downtown streets, and the protected bike lanes provided them with the opportunity to have their children, and less experienced riders accompany them downtown.

Other reasons people cited for liking the lanes include:

- the northbound connection off of Broadway onto the protected bike lane improved from the previous painted bike lane
- those that acknowledged that they rode on the sidewalk previously appreciated being able to be away from pedestrians
- that the protected bike lanes promoted healthy alternatives for moving around the city
- that having a protected lane prevented vehicles from stopping or parking in the bike lane, as was noted previously by some users on standard bike lanes.

What would you like to see improved?

A number of improvements were identified through the forum. These included:

CONNECTIVITY

- Better connections from the protected bike lanes to the surrounding network (more 'AAA' facilities leading to the downtown)
 - Specific connections identified included:
 - Spadina Cres @ 23rd St
 - 4th Ave @ 25th St
 - Southbound on 4th Ave @ 19th St
 - Connection by bicycle through the transit mall
- Different streets were suggested as potential alternatives
 - 2nd Ave was suggested as it is already a slow moving street
 - 24th Ave was suggested as it connects more directly with the University Bridge access
 - 3rd Ave was suggested as it will connect with the new multi-use pathways on the Traffic Bridge
- Overall, more 'AAA' facilities that connect throughout the city

SAFETY

- More visibility at intersections and driveway crossings.
- Improvements for motorist visibility making right turns. Many respondents indicated that shoulder checking for oncoming motor vehicles, pedestrians, and cyclists approaching from behind was difficult
- Better options for accessible parking spots adjacent to bike lanes

MAINTENANCE + OPERATIONS

- Clearer Pavement Markings / Lane alignments
 - Lane designations were unclear along 4th Avenue creating driver confusion

- Lane alignment along 4th Avenue was unclear and could be improved
- Pavement markings could be applied earlier in the season
- Improvements to Year-round Maintenance
 - Snow clearing into the bike lanes
 - Reduce the volume of gravel and debris in the bike lanes by regularly clearing the lanes
- Improved pavement quality. Users cited poor pavement conditions, especially along 23rd Street.
- Improved delineator treatments, such as planters or different type of post
- Improved signage. Respondents for indicated confusion over what certain signs mean
- Improved transit/bike integration treatments
- A number of respondents indicated that they found the No Right Turn on Red unnecessary (this restriction was removed Spring 2017)

EDUCATION + PROMOTION

- More education for all road users on how all road users should interact
- Clearer explanations or revisions to the street signs to make them more easily understood
- More promotion for cycling in general
- Enforcement of all road users
- Increase awareness for pedestrians of the bike lanes

CONVENIENCE

- Improvements to left turns for cyclists where bike boxes are not present
- More secure bike parking facilities in the downtown

Additional Feedback

A number of comments were also received that did not relate directly to the two questions asked. These primarily included the following observations:

PARKING

- Bike lanes have reduced parking opportunities in the Downtown
- Parking along 4th Avenue is more difficult since the bike lanes were installed

TRAFFIC DELAYS

- Traffic delays occur along 4th Avenue

COSTS

- The protected bike lanes cost too much to install
- The protected bike lanes cost too much to maintain
- The protected bike lanes are not a good use of civic dollars

VOLUME OF USERS

- The volume of people using the bike lane is too low



City of Saskatoon

2017 Protected Bike Lane Survey

insightrix®



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Executive Summary

Study Background & Key Findings

Study Background:

The City of Saskatoon (the City) was interested in gathering feedback from Saskatoon residents about their perceptions and experiences with the bike lanes located on 23rd Street and 4th Avenue. Key objectives included understanding primary modes of transportation used to travel to and from downtown, incidence of cycling into downtown and barriers to doing so more frequently, perceptions of cycling safety, opinions and experiences with respect to the protected bike lanes and preferences for future downtown bike lanes.

To achieve these research objectives, Insightrix conducted two research studies:

- a) a representative online study with 1,004 randomly selected residents
- b) a public input survey placed on the City's website, resulting in 1,363 responses, and

88

Data were collected at the end of August and in the first half of September 2017. Key findings are outlined below.

Incidence of Cycling & Project Awareness:

- Seven in ten residents have access to a bicycle and six in ten report riding a bicycle at least occasionally.
- Three in ten report cycling into downtown at least occasionally (six in ten among those who answered the public survey), most commonly on weekends.
- Nearly all are aware of the current Protected Bike Lane Demonstration Project.

Key Findings (cont'd)

Protected Bike Lane Demonstration Project Impressions:

- Top of mind impressions of the protected bike lanes are mixed with several residents offering negative sentiments related to poor planning, limited use, cost and traffic disruptions. Those positive about the project cite it is a good initiative and is safer for cyclists.
- Motorist experiences as they relate to the protected bike lanes on both 4th Ave and 23rd Street vary, although with some attributes there are a high proportion of “poor” assessments. Cyclist and pedestrian experiences with the two roads are also divided although many are uncertain.
- A majority believe the protected bike lanes have improved cyclist and pedestrian safety, although a minority believe the lanes are visually pleasing.

Downtown Cycling:

- Common reasons for cycling downtown include recreation and exercise, social engagements or passing through the city core. Few downtown cyclists are commuters.
- Barriers to cycling downtown include preferring other methods, distance from downtown and safety, reportedly mostly due to careless drivers and busy streets.

Future Downtown Bike Lane Preferences:

- There is moderate support for most forms of proposed future bike lanes presented to respondents although opposition to painted sharrows is high.
- When asked where residents would like to see future bike lanes in the downtown core, opinions are mixed with Spadina Crescent emerging as the most popular, along with 20th Street, 1st Ave and 2nd Ave. Sizable proportions feel there should be no future lanes at all or are uncertain where lanes should be created.

Key Findings (cont'd)

Demographic Differences:

- Broadly speaking, those more positive and supportive of protected bike lanes include:
 - Younger residents
 - Those who cycle more frequently
 - Those who cycle downtown
 - Winter cyclists (most extreme support)
- Of note, those who cycle but do not do so downtown tend to be less positive towards current protected bike lanes and future bike lane options.



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Background & Methodology

Study Background & Objectives

In March 2015, Saskatoon City Council approved a recommendation to proceed with a Protected Bike Lane Demonstration Project in the downtown area. The purpose of the demonstration project is to assess the feasibility of installing permanent protected bike lanes in downtown as proposed in the City Centre Plan and by Saskatoon Cycles through the Better Bike Lanes initiative. Expanding and enhancing Saskatoon's bicycle network is also part of the City's Active Transportation Plan. The strategic goal of the project is to create a vibrant and healthy downtown by promoting cycling as a safe and accessible mode of transportation to downtown destinations for businesses, residents, visitors, employers and their employees.

As the Protected Bike Lane Demonstration Project entered its final summer this year, the City was interested in gathering feedback from Saskatoon residents about their perceptions and experiences with the bike lanes located on 23rd Street and 4th Avenue in the downtown.

Specific research objectives included:

- ✓ Determine primary modes of transportation used to travel to and from the downtown
- ✓ Incidence of cycling into downtown and barriers to doing so more frequently
- ✓ Perceptions of safety when cycling into and within downtown
- ✓ Measure awareness of the Protected Bike Lane Demonstration Project
- ✓ Assess motorist, cyclist, pedestrian, and transit-user opinions and experiences with respect to the protected bike lanes
- ✓ Understand preferences for future downtown bike lanes

To achieve these research objectives, Insightrix conducted two research studies that gathered feedback from the general public. Saskatoon residents were surveyed through a **representative study** to provide an accurate perspective of opinions from the general population and a **public input** survey placed on the City's website, enabling those interested in voicing their opinions on the topic to provide their feedback to the City.

Methodology

To collect opinions from a representative sample of Saskatoon residents, a quantitative online survey was conducted through the Insightrix Research online panel, SaskWatch Research®, in addition to a link to the same survey on the City website. A comprehensive questionnaire was developed in collaboration with City representatives to meet the study objectives.

Data were collected between August 29 and September 14, 2017. In total, 1,004 residents completed the survey through the online panel (referred to as the representative survey in the report). Another 1,363 residents completed the survey through the City website (referred to as the public input in the report). For the representative sample, quotas were set by gender, age and SDA neighborhoods to ensure a representative mix of respondents was achieved. Because the studies were conducted online, margins of error are not applicable.

Representative Survey

| Demographics | Count | Percent | |
|--------------|-------------|---------|-----|
| | Male | 459 | 46% |
| Female | 543 | 54% | |
| Other | 2 | <1% | |
| Age Range | 18-34 | 328 | 33% |
| | 35-54 | 364 | 36% |
| | 55 or older | 312 | 31% |
| Total | 1004 | 100% | |

Public Input

| Demographics | Count | Percent | |
|--------------|-------------|---------|-----|
| | Male | 717 | 53% |
| Female | 640 | 47% | |
| Other | 6 | <1% | |
| Age Range | 18-34 | 510 | 37% |
| | 35-54 | 625 | 46% |
| | 55 or older | 228 | 17% |
| Total | 1363 | 100% | |

Reporting Notes

- Data have been rounded to zero decimal places; therefore, percentages may not add up precisely to 100% on some graphs.
- Open-ended questions have been themed and coded into categories. The percentages from individual codes could total more than 100%, as comments from each respondent could be relevant to more than one code.
- Questions that have multiple response options will result in percentages that could add up to more than 100%.
- Each survey question on the representative study was analyzed by appropriate demographic variables, such as region, age, gender, etc. Significant differences have been highlighted in this report with a ↑ or ↓. A standard alpha value of less than 0.05 is considered statistically significant. This means there is less than a 5% chance the results would have occurred by chance.
- In some cases, themes have been organized into 'Net themes' based on overarching commonalities in the content of responses (i.e., positive or negative mentions). The percentages of individual codes will add up to more than the Net total as multiple comments from each respondent are possible within each Net.
- Color coding has been implemented to visually differentiate between data from the representative and public input surveys, as outlined below:

Representative Survey

Public Input

- Opinions from the representative study can be considered accurate for the broader Saskatoon population (i.e. the findings within the survey are reflective of opinions of all Saskatoon residents has a census survey had been conducted), whereas the findings from the public input survey are subject to a self-selection bias and should only be considered as reflective of those who completed this survey rather than the broader population.



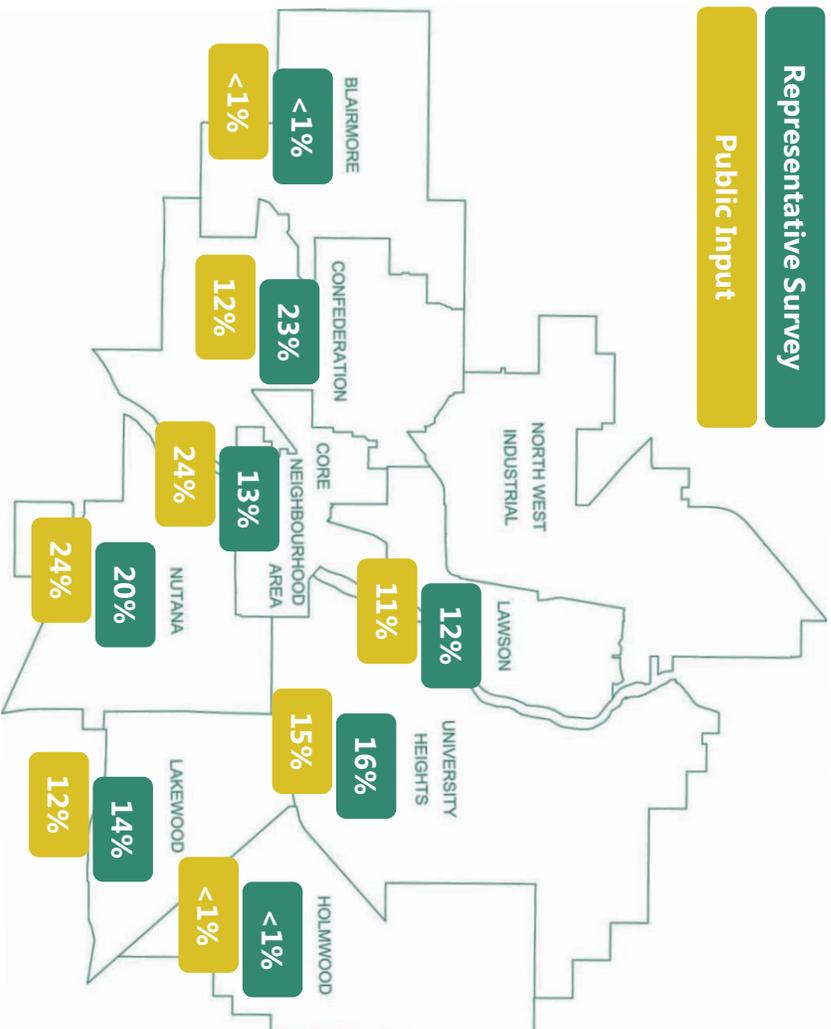
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Resident Profile



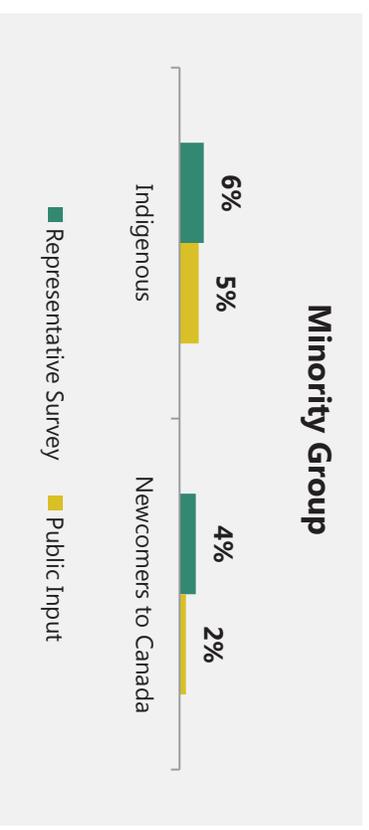
Respondent Profile

Suburban Development Area (SDA)*

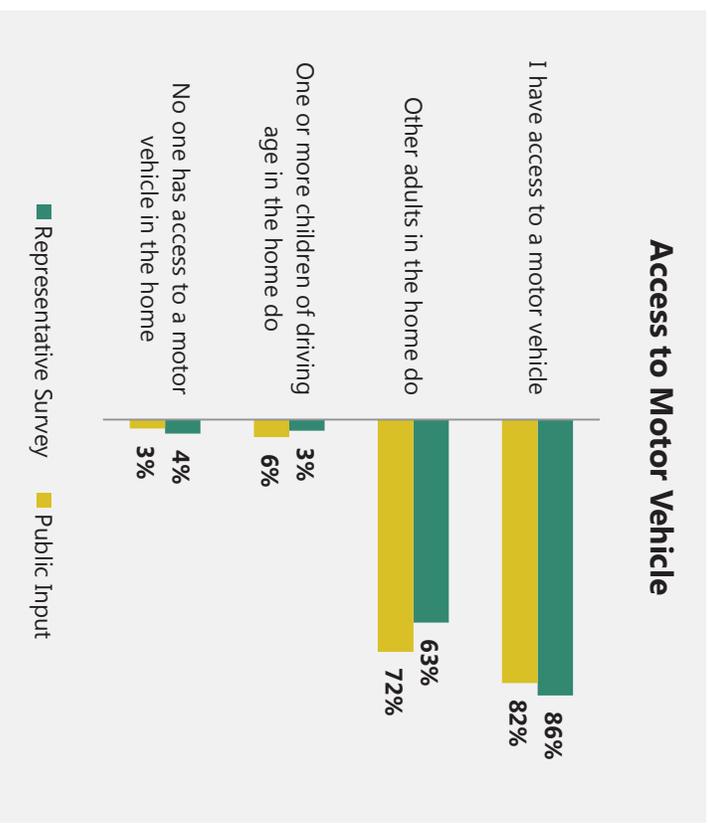
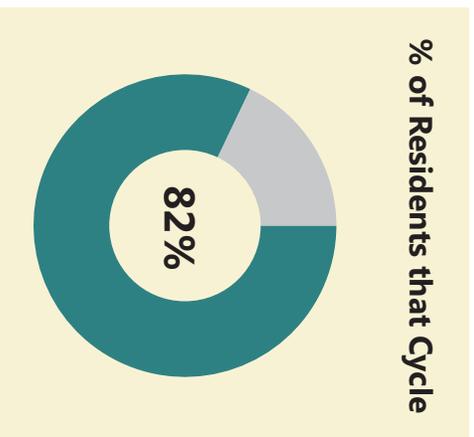
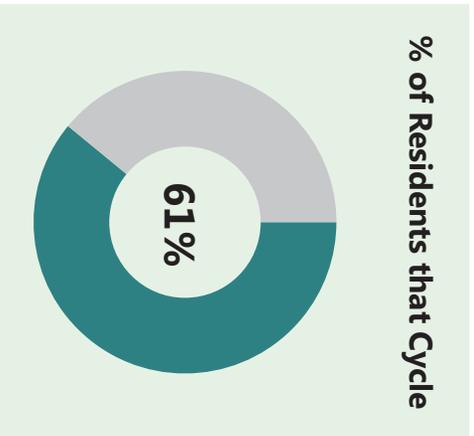
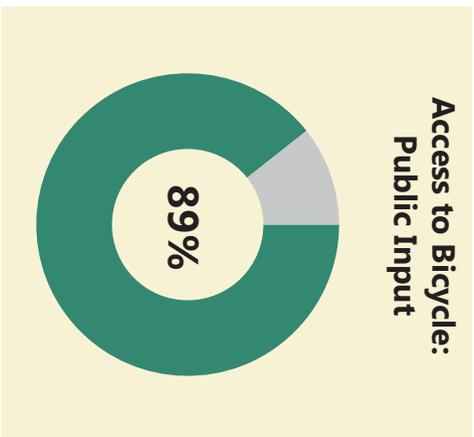
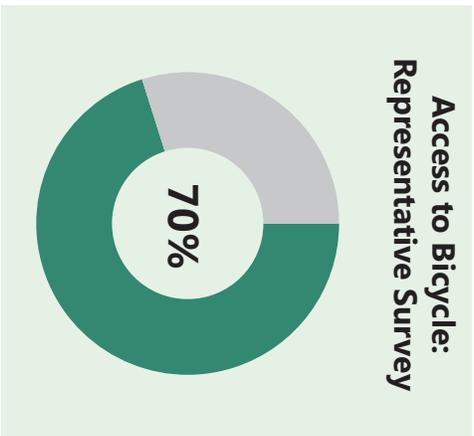


* Suburban development areas (SDA) are a consolidation of several neighbourhoods

5. What neighbourhood do you live in? Base: All respondents, Representative: n=1004, Public: n=1363.
28. Indigenous people are those who identify themselves as First Nations, Métis, Non-status Indian, or Inuit. Do you self-declare as an Indigenous person under this definition? Base: All respondents, Representative: n=1004, Public: n=1363.
29. Have you moved to Canada within the past five years? Base: All respondents, Representative: n=1004, Public: n=1363.



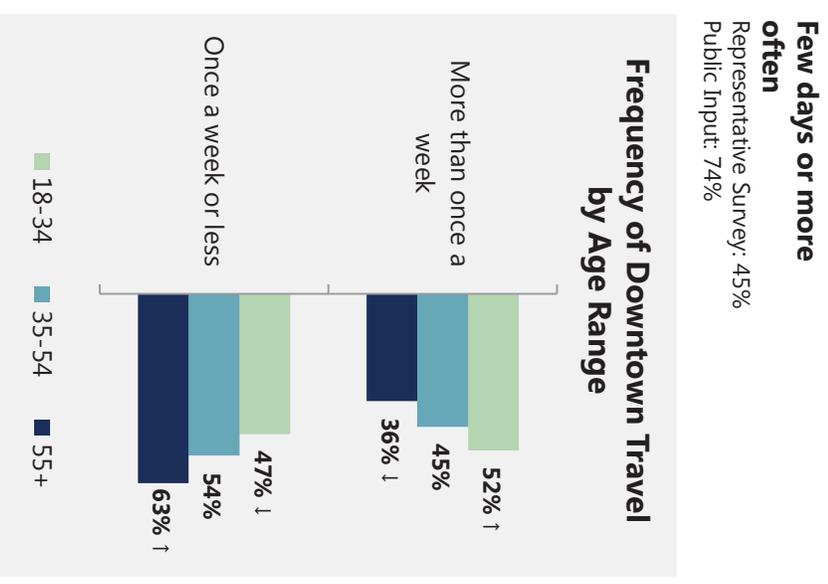
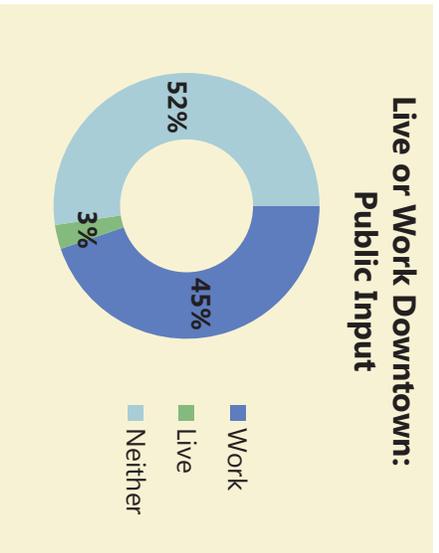
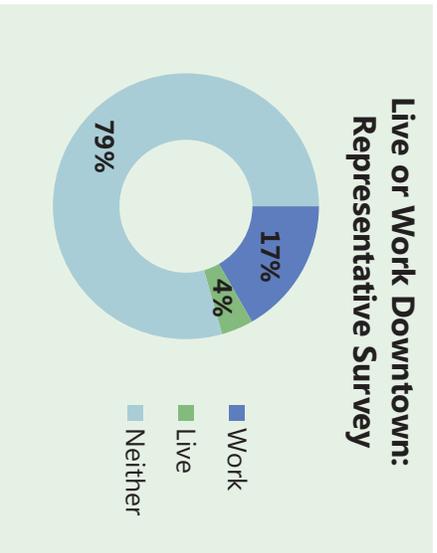
A majority of Saskatoon residents who completed the representative survey say they have access to a bicycle while the incidence of bicycle access is much higher among those who participated in the public input survey. Most also have access to a motor vehicle.



14. Do you own or have access to a bicycle? Base: All respondents, Representative: n=1004, Public, n=1363.

27. Who in your household has access to a motor vehicle? (select all that apply) Base: All respondents, Representative: n=1004, Public, n=1363.

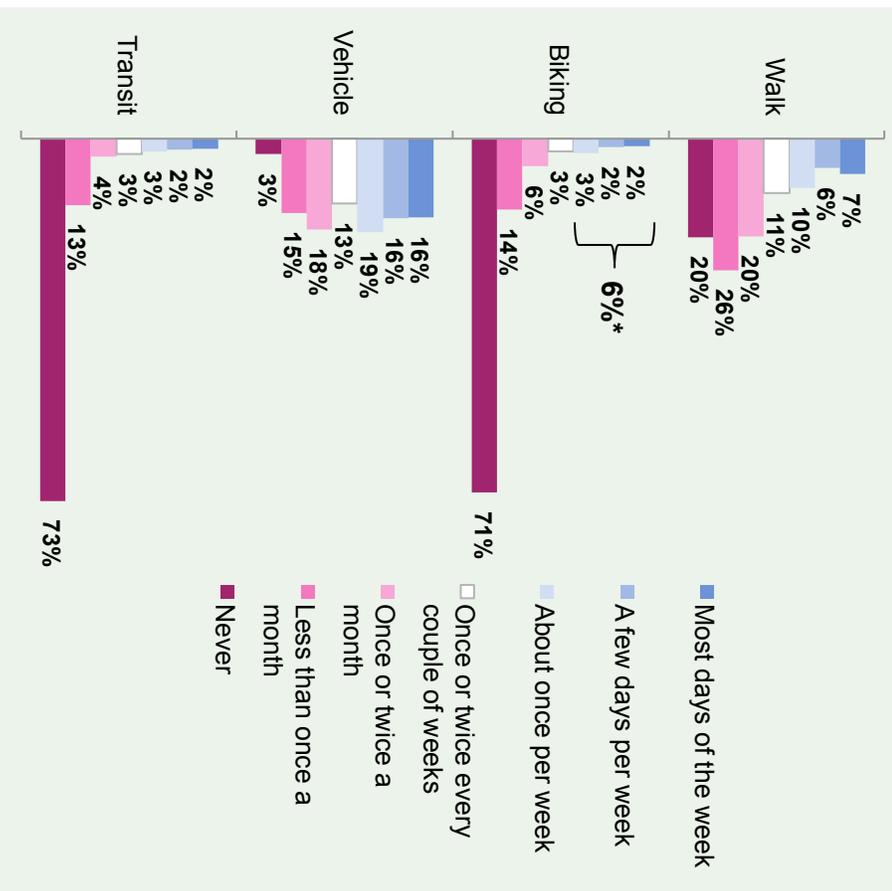
Roughly two in ten Saskatoon residents from the representative study live or work downtown, lower than that of those who completed the public input survey. Nearly one half of residents from the representative study travel into the downtown core at least a few times per week vs. three quarters from the public input survey. Younger residents travel downtown more frequently.



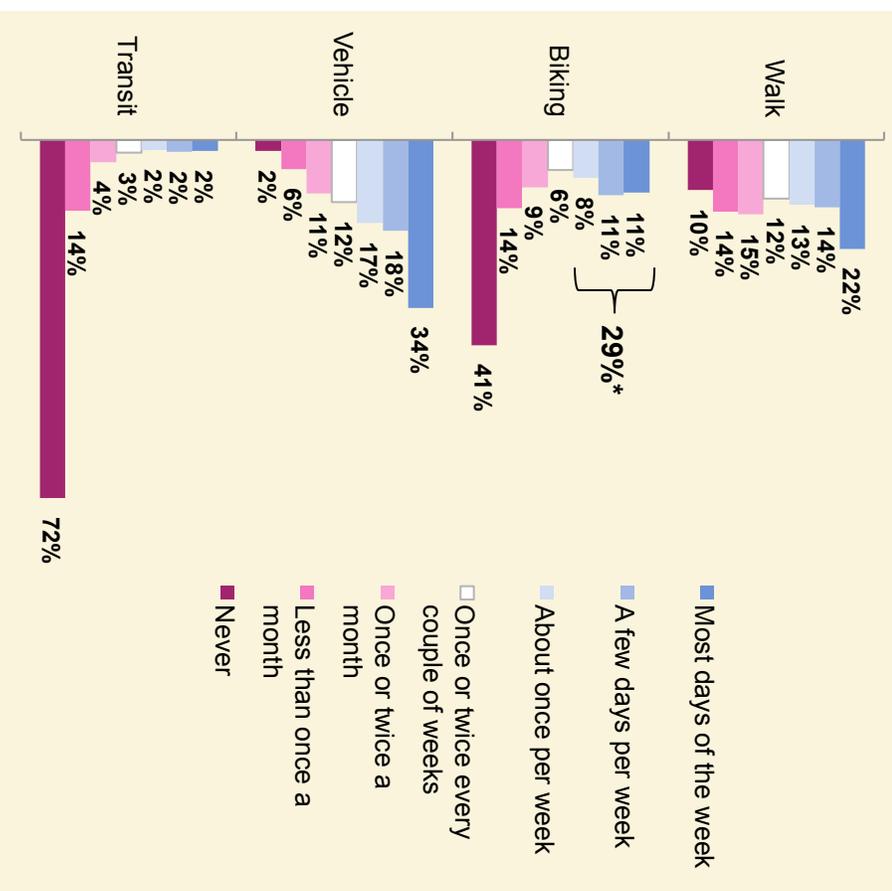
- Do you work or live within the downtown core (i.e. between the river, 25th Street and Idylwyld Drive)? Base: All respondents, Representative: n=1004, Public: n=1363.
- How often do you typically travel into the downtown core? Base: All respondents, Representative: n=1004, Public: n=1363.

Most commonly, Saskatoon residents drive downtown. Fewer than one in ten from the representative study say they ride their bicycle downtown at least once per week. Travel to downtown through all methods other than transit is much higher among those who completed the public input survey.

Method of Downtown Travel: Representative Survey



Method of Downtown Travel: Public Input



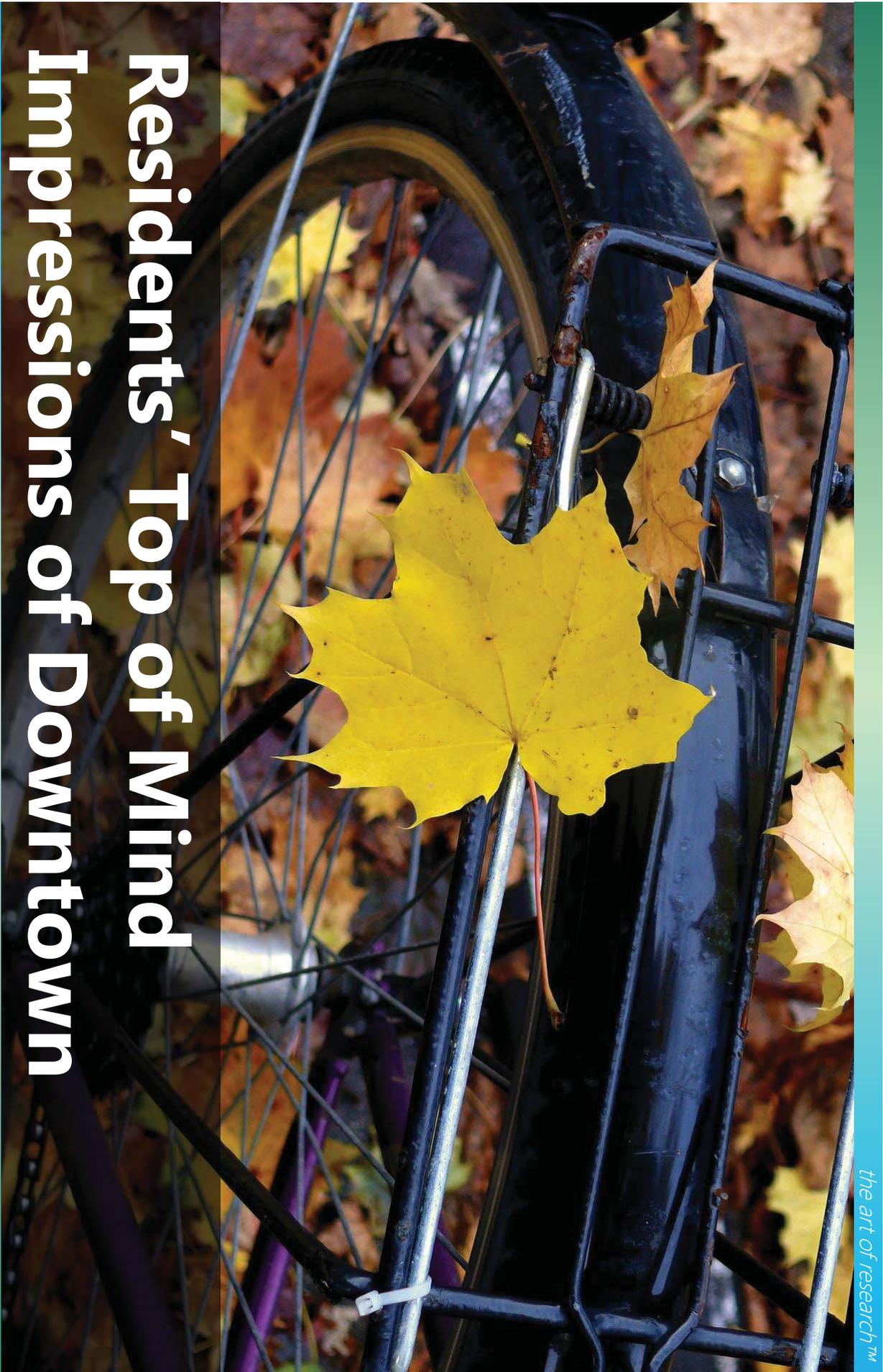
* Differences in summation are due to rounding

15. How often are you travelling into and within the downtown core through each of the following methods? Base: Respondents who travel downtown. Representative: n=1004, Public: n=1363.

A small minority of cyclists ride their bicycles during the winter, most of which also cycle downtown.



- How often are you travelling into and within the downtown core through each of the following methods? Base: All respondents, Representative: n=1004.
- How often do you cycle in the city (not just downtown) during... Base: All respondents that own a bicycle, Representative: n=1004.



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Residents' Top of Mind Impressions of Downtown

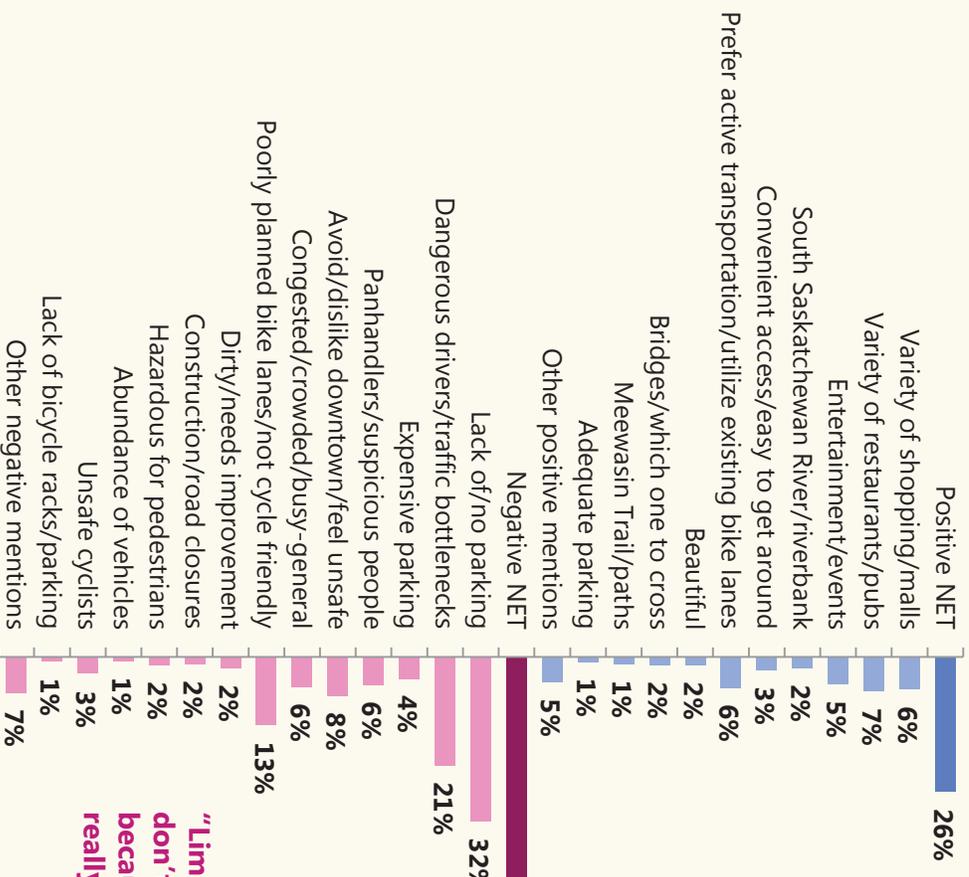
When asked to indicate what first comes to mind when thinking about Saskatoon's downtown, six in ten offer negative sentiments, most commonly, lack of parking, traffic and parking costs. Three in ten offer positive sentiments, often mentioning shopping and food options.



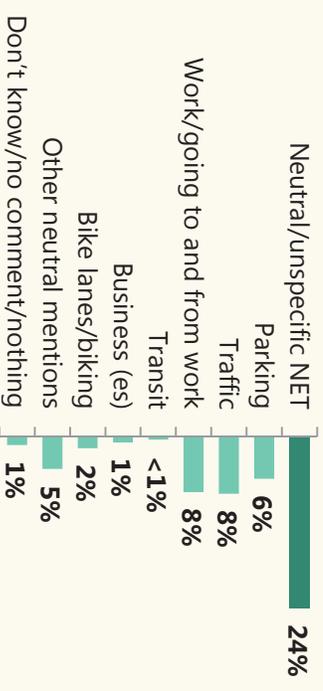
8. What first comes to mind when you think about going downtown? Base: All respondents, except those who live downtown, Representative: n=965.

A larger proportion of respondents to the public input cite negative aspects of the downtown on a top of mind basis, with parking, traffic and poorly planned bike lanes topping the list. One quarter offer a mix of positive opinions about downtown.

Thoughts on Downtown Saskatoon (Open-ended question)



Public Input



“Fun. Downtown is the site of many attractions and amenities that I enjoy.”

“Most of the time it’s for work, so I’m not thinking specifically of downtown. I’m thinking about what I have to accomplish for the day.”

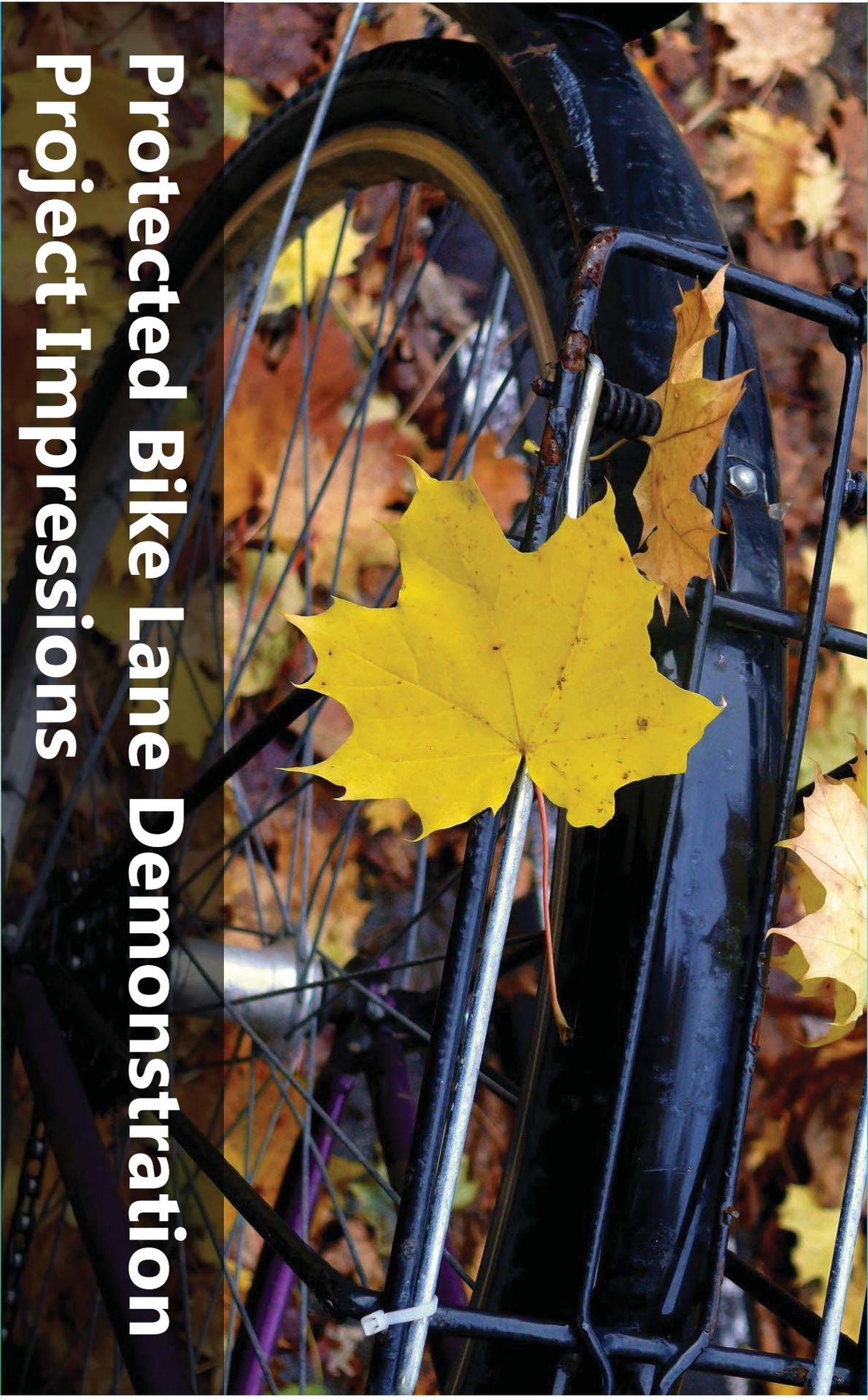
“I love going downtown. I walk most places, including through the downtown to get to work and back, and I like going to the movies and to restaurants downtown. I like the business and vibrancy...”

“Limited and expensive parking for cars, so I don’t want to drive. But unsafe for cycling because of all the vehicle traffic, so I don’t really want to bike either.”

“Traffic flow, there is none!”

“If I’m driving, parking is the biggest issue. If I’m cycling I am just hoping to get through without injury.”

8. What first comes to mind when you think about going downtown? Base: All respondents, except those who live downtown, Representative: n=1323.

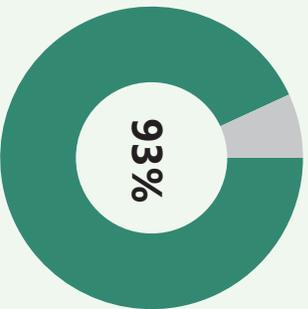


Protected Bike Lane Demonstration Project Impressions

Awareness of the Protected Bike Lane Demonstration Project is very high. Top of mind comments are more commonly negative, with frequent references to poorly planned, underutilized, an unwanted expense and traffic impacts. Four in ten offer positive top of mind sentiments, including that it is generally a good idea and cyclist safety, among other aspects.

Representative Survey

Protected Bike Lane Demonstration Awareness: Representative Survey



Thoughts on Protected Bike Lane Demonstration

(Open-ended question)



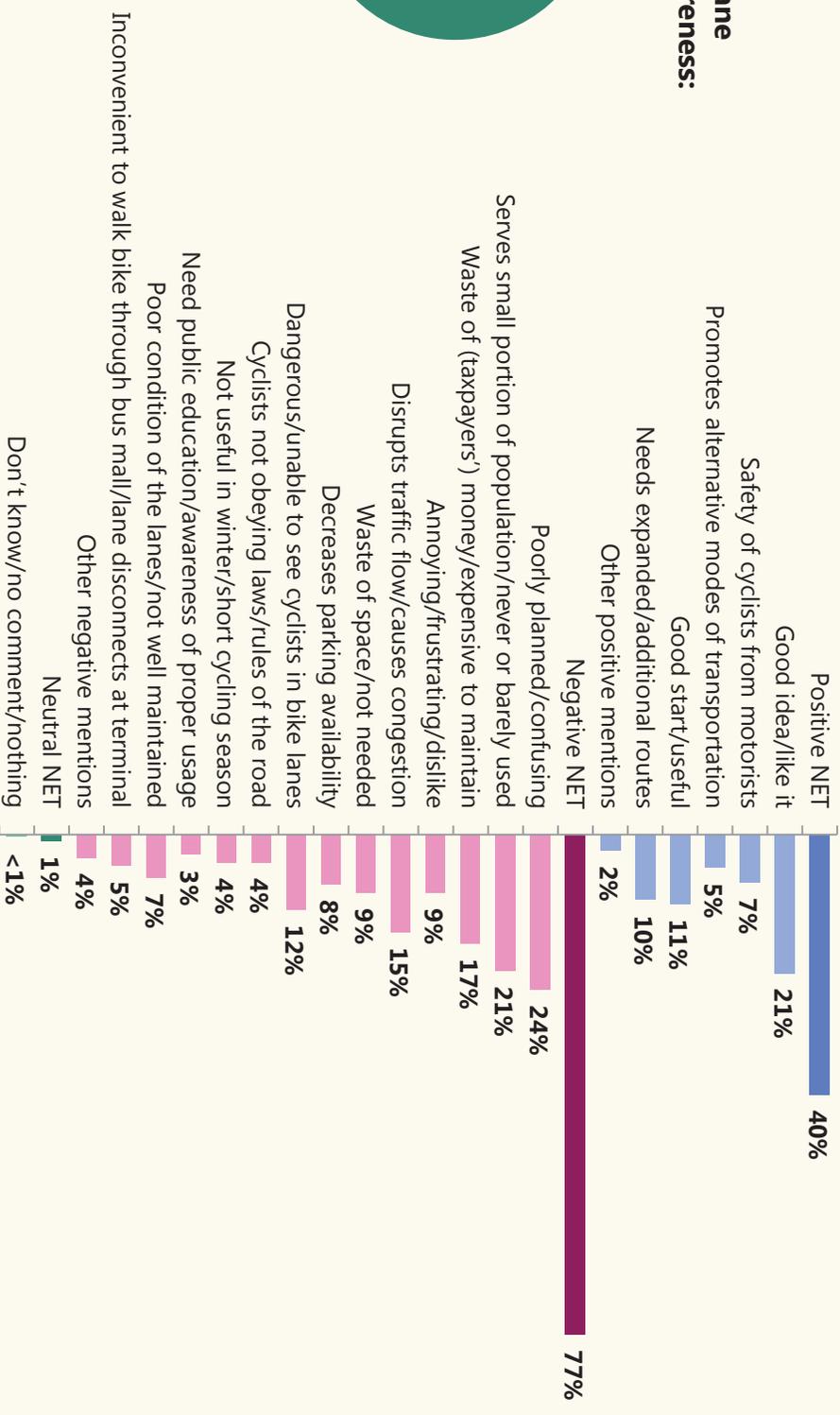
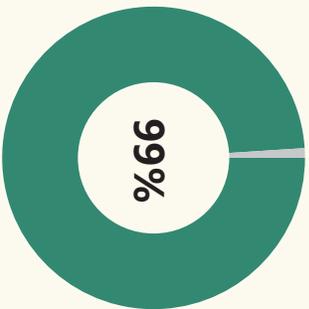
9. Before now, were you aware of the City's downtown Protected Bike Lane Demonstration Project on 4th Ave and 23rd Street? Base: All respondents, Representative: n=1004.
 10. What first comes to mind when you think about this Protected Bike Lane Demonstration Project? Base: All respondents, Representative: n=1004.

Similarly, virtually all who completed the public input survey are aware of the protected bike lane project. Nearly eight in ten offer negative top of mind sentiments, although four in ten offer positive opinions.

Public Input

Thoughts on Protected Bike Lane Demonstration
(Open-ended question)

Protected Bike Lane Demonstration Awareness: Public Input



9. Before now, were you aware of the City's downtown Protected Bike Lane Demonstration Project on 4th Ave and 23rd Street? Base: All respondents, Public: n=1363.

10. What first comes to mind when you think about this Protected Bike Lane Demonstration Project? Base: All respondents, Public: n=1363.

A selection of positive and negative sentiments offered by residents from the representative sample study are outlined below.

Top of mind thoughts on Protected Bike Lane Demonstration Project

Positive Sentiments

- "Great idea to keep them safe and out of the actual road with motorized vehicles."
- "Excellent idea, gives safety. Promotes fitness and environmental benefits."
- "I think it is a good idea as long as both cyclists and drivers respect them."
- "I like protected bike lanes - I wish there were more and longer extensions to connect core neighborhoods"
- "Innovative support for healthy public transport"
- "I hope it expands. I do not feel safe sharing the road with cars in Saskatoon and the bike lanes make me much more comfortable biking"

Representative Survey

Negative Sentiments

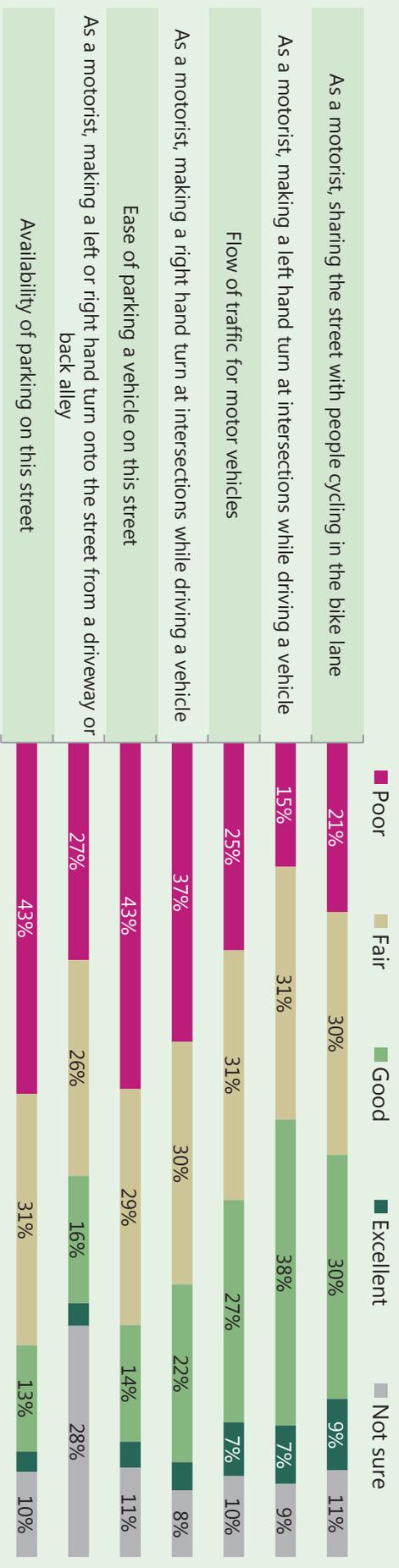
- "Never see a biker using them or if they are they aren't obeying traffic laws."
- "A waste of time and money. Half the people still ride in the traffic lanes."
- "These lanes are NOT PROTECTED. Plastic barriers are not protection. I feel unsafe in these lanes (which I use often)."
- "It's a hassle, waste of time and space to accommodate the few who bike."
- "A waste of money and resources. The downtown is too crowded and dangerous for bikes. Bike riders tend to disobey signs and traffic lights."
- "Not well planned out. Could lead to accidents as they are behind the parked vehicles."

Public Input

10. What first comes to mind when you think about this Protected Bike Lane Demonstration Project? Base: All respondents, Representative: n=1004.

4th Ave experiences from motorist perspectives vary, although with some attributes, there are a high proportion of “poor” assessments.

4th Ave Bike Lane Impressions from Motorist Perspectives: Representative Survey



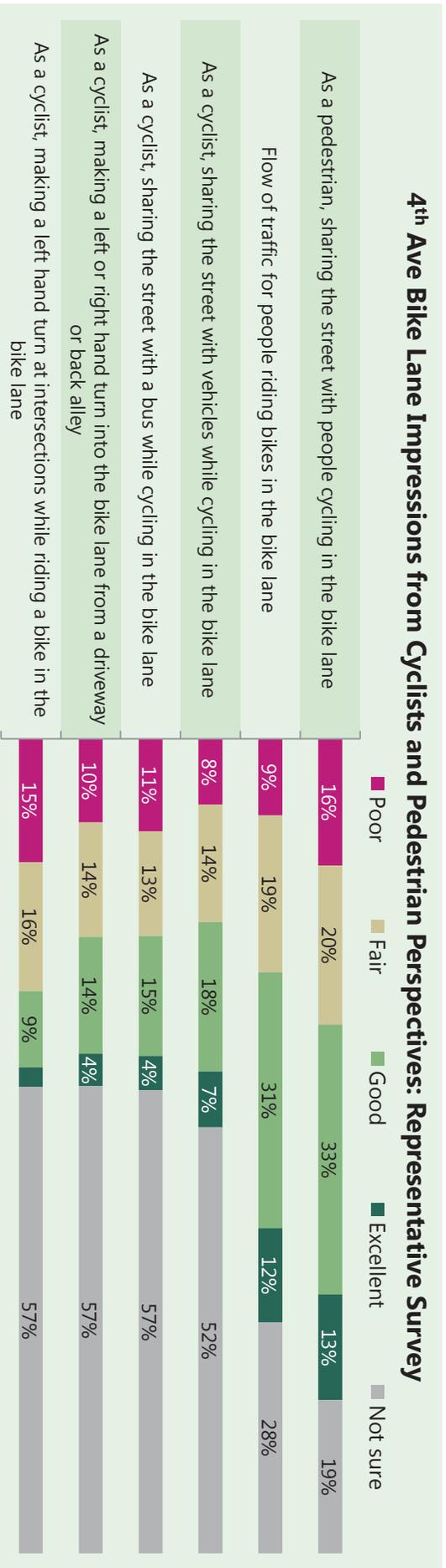
4th Ave Bike Lane Impressions from Motorist Perspectives: Public Input



11. How would you rate your impressions of each of the following as it relates to the protected bike lanes along 4th Ave, from 20th to 24th Street?
 Base: All respondents, Representative: n=1004, Public n=1363.

4th Ave cyclist and pedestrian experiences are mixed although many are uncertain.

4th Ave Bike Lane Impressions from Cyclists and Pedestrian Perspectives: Representative Survey



4th Ave Bike Lane Impressions from Cyclist and Pedestrian Perspectives: Public Input



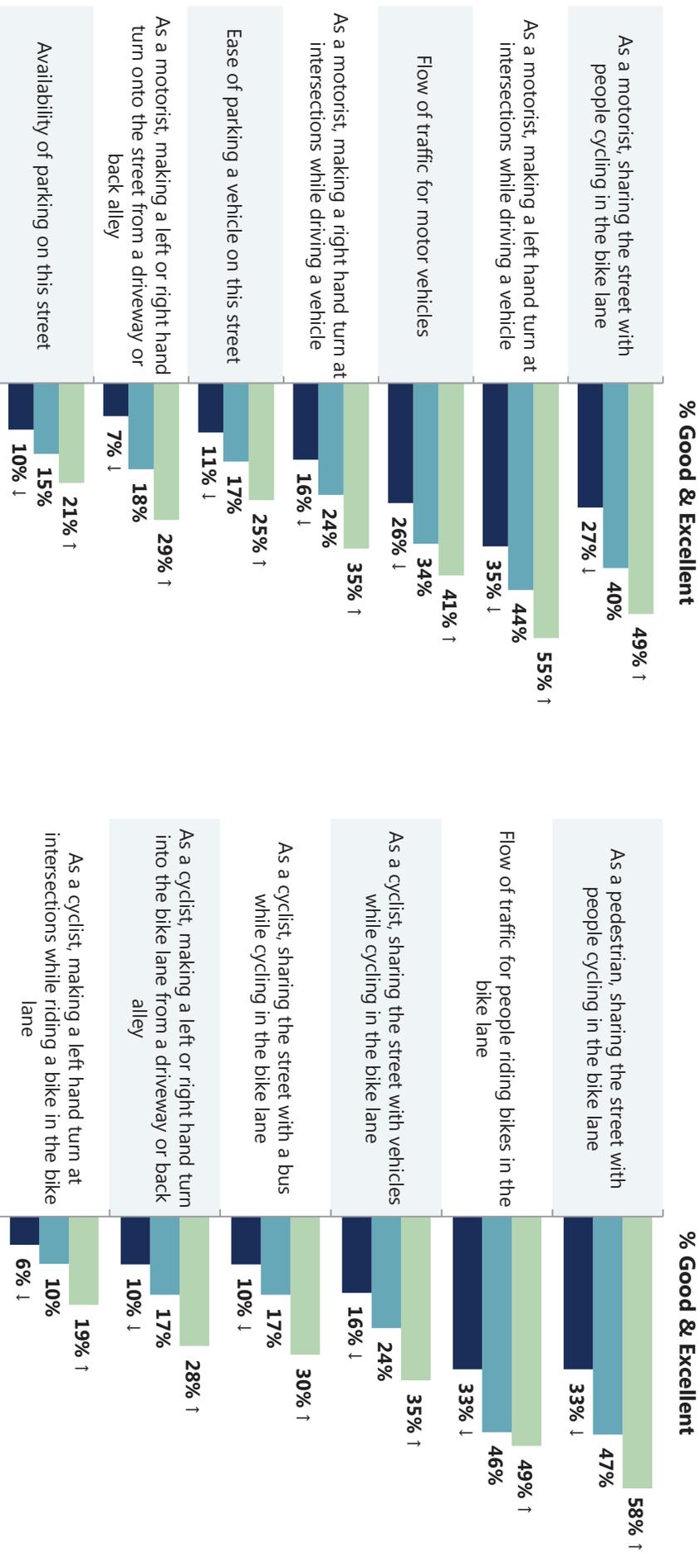
11. How would you rate your impressions of each of the following as it relates to the protected bike lanes along 4th Ave, from 20th to 24th Street?
 Base: All respondents, Representative: n=1004, Public n=1363.

Younger residents tend to have more favourable opinions of 4th Ave travel experiences than their older counterparts.

4th Ave Bike Lane Impressions from Motorist Perspectives by Age Range

Representative Survey

4th Ave Bike Lane Impressions from Cyclist and Pedestrian Perspectives by Age Range

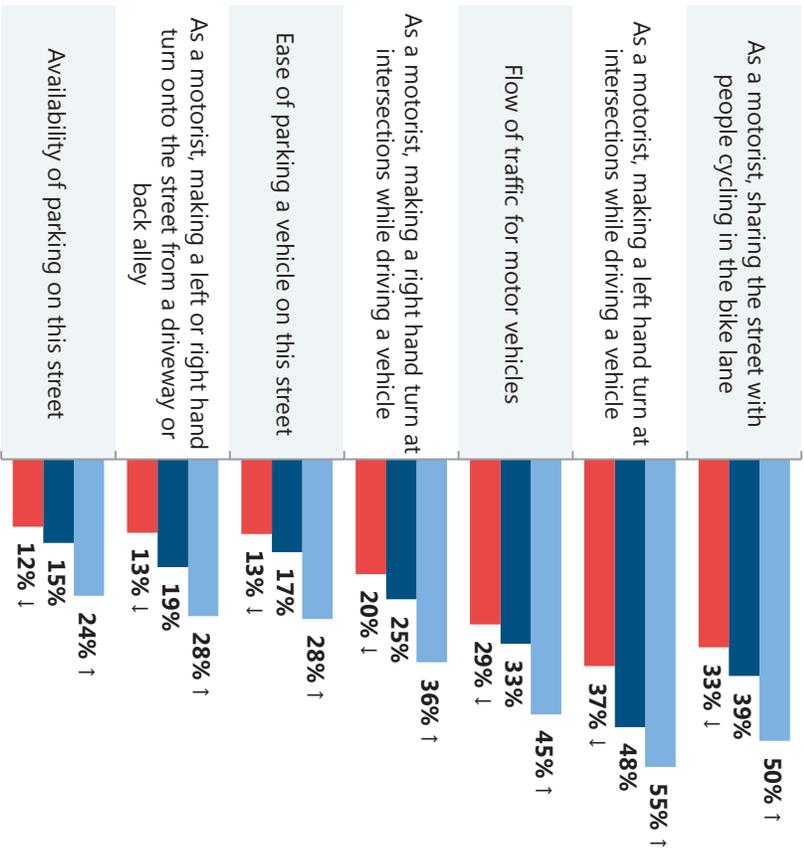


11. How would you rate your impressions of each of the following as it relates to the protected bike lanes along 4th Ave, from 20th to 24th Street?
 Base: All respondents, Representative: n=1004.

Residents who cycle frequently tend to have more favourable opinions of 4th Ave travel experiences than those who never cycle.

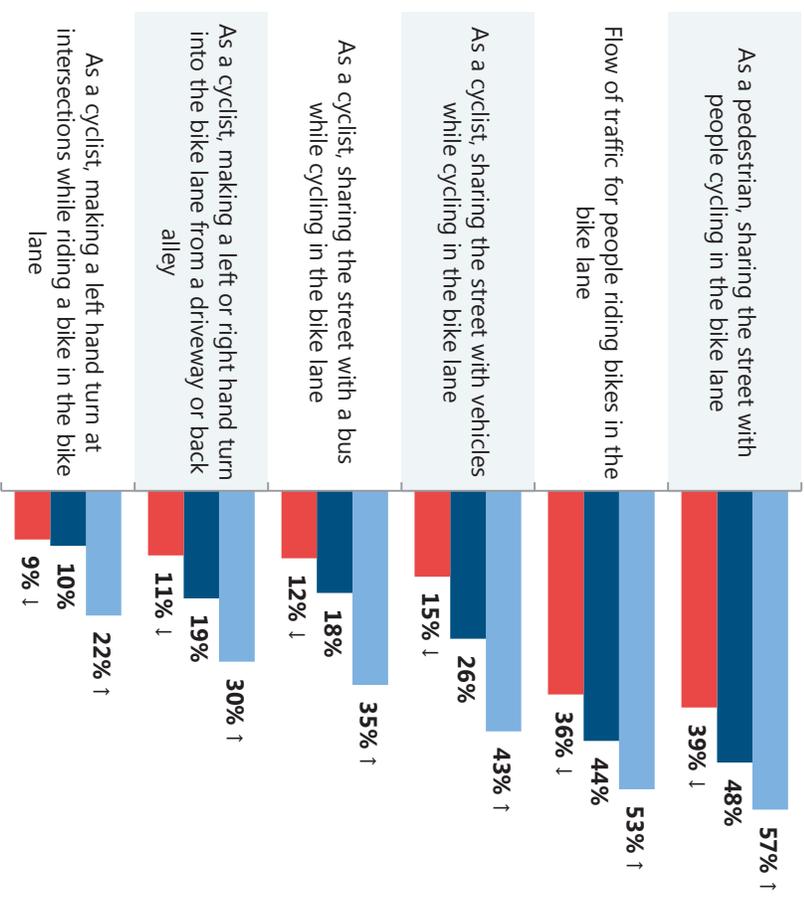
4th Ave Bike Lane Impressions from Motorist Perspectives by Overall Cycling Frequency

Representative Survey



4th Ave Bike Lane Impressions from Cyclist and Pedestrian Perspectives by Overall Cycling Frequency

% Good & Excellent



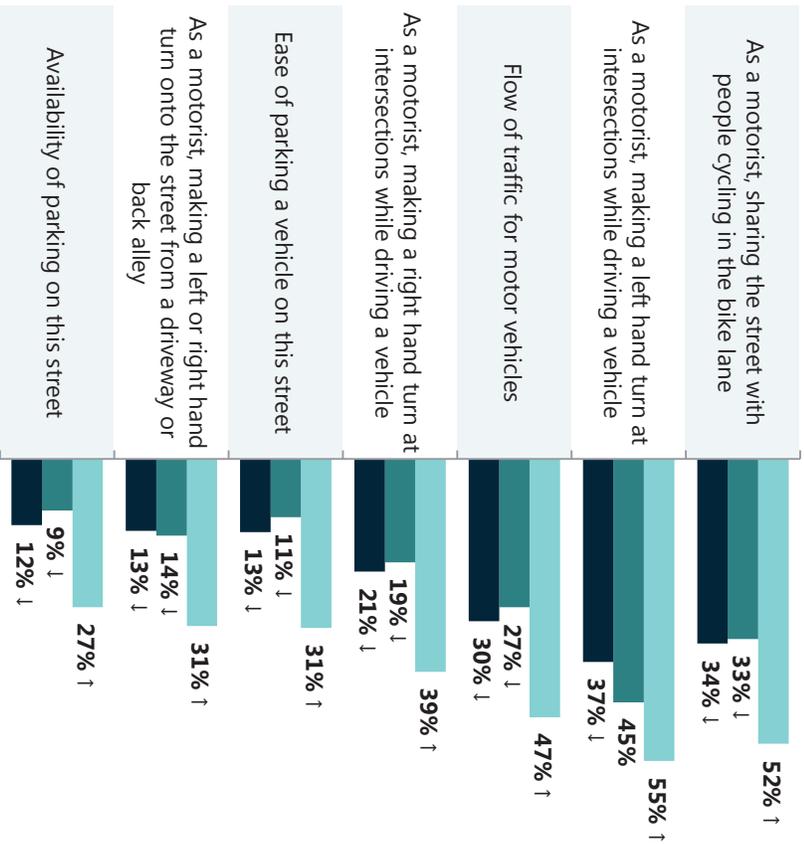
■ More than once a week
 ■ Once a week or less
 ■ Never

11. How would you rate your impressions of each of the following as it relates to the protected bike lanes along 4th Ave, from 20th to 24th Street?
 Base: All respondents, Representative: n=1004.

Residents who cycle downtown tend to have more favourable opinions of 4th Ave travel experiences than those who never cycle downtown or never cycle in general.

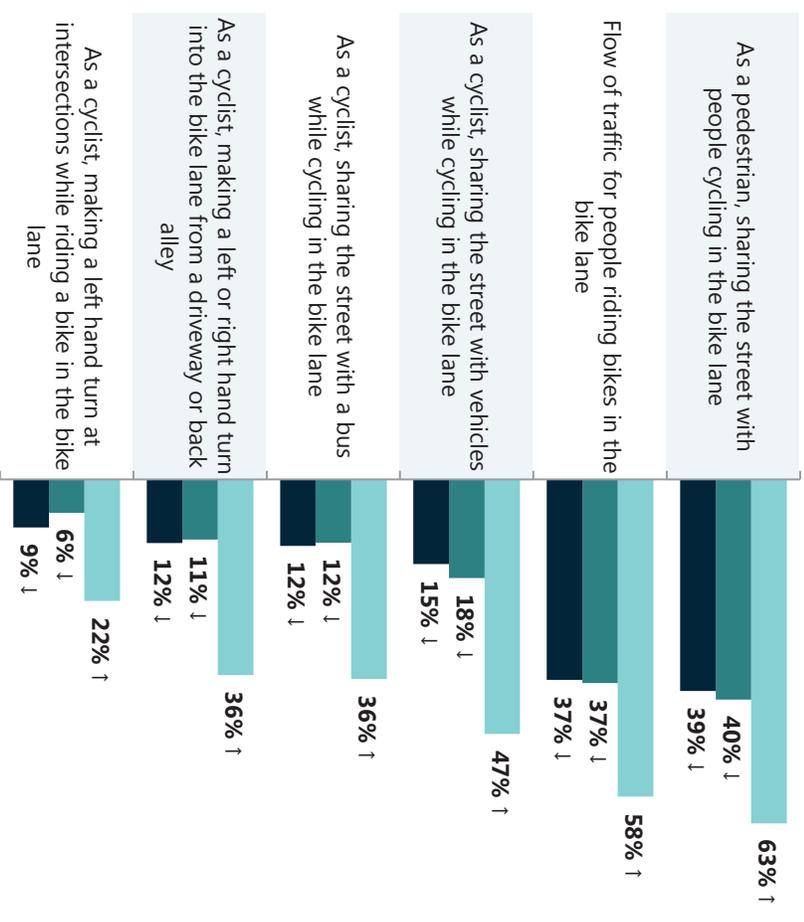
4th Ave Bike Lane Impressions from Motorist Perspectives by Downtown Cycling Frequency

Representative Survey



4th Ave Bike Lane Impressions from Cyclist and Pedestrian Perspectives by Downtown Cycling Frequency

% Good & Excellent

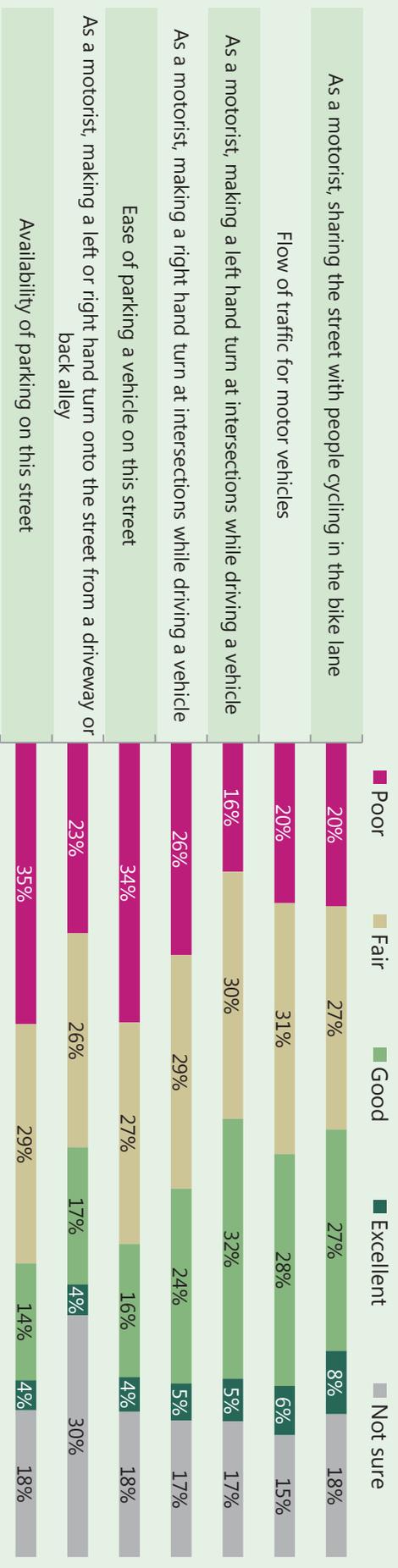


■ Cycle downtown
 ■ Cycle but not downtown
 ■ Never cycle

11. How would you rate your impressions of each of the following as it relates to the protected bike lanes along 4th Ave, from 20th to 24th Street?
 Base: All respondents, Representative: n=1004.

23rd Street experiences from motorist perspectives vary, although with some attributes, there are a high proportion of “poor” assessments.

23rd Street Bike Lane Impressions from Motorist Perspectives: Representative Survey



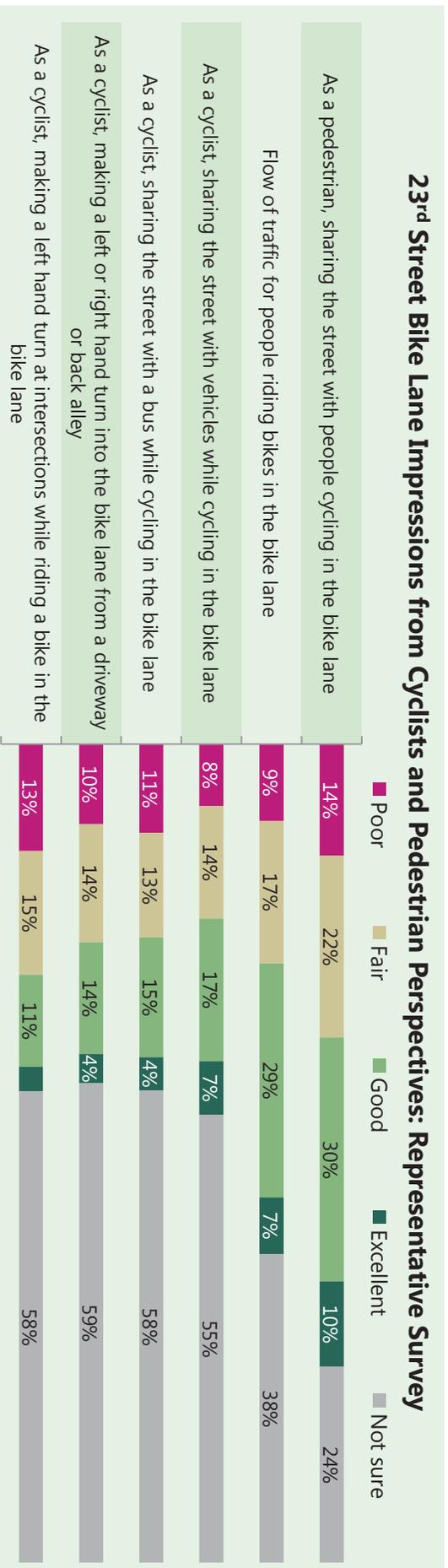
23rd Street Bike Lane Impressions from Motorist Perspectives: Public Input



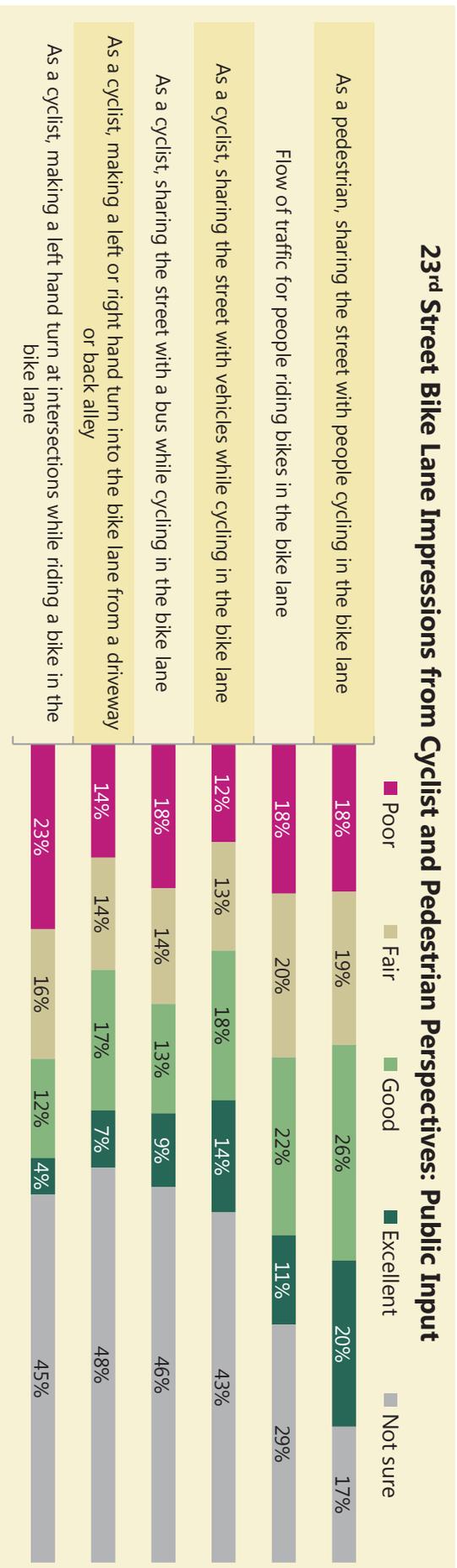
12. How would you rate your impressions of each of the following as it relates to the protected bike lanes along and 23rd Street, from Spadina Crescent to Idylwyld drive?
 Base: All respondents, Representative: n=1004, Public: n=1363.

23rd Street cyclist and pedestrian experiences are mixed although many are uncertain.

23rd Street Bike Lane Impressions from Cyclists and Pedestrian Perspectives: Representative Survey



23rd Street Bike Lane Impressions from Cyclist and Pedestrian Perspectives: Public Input



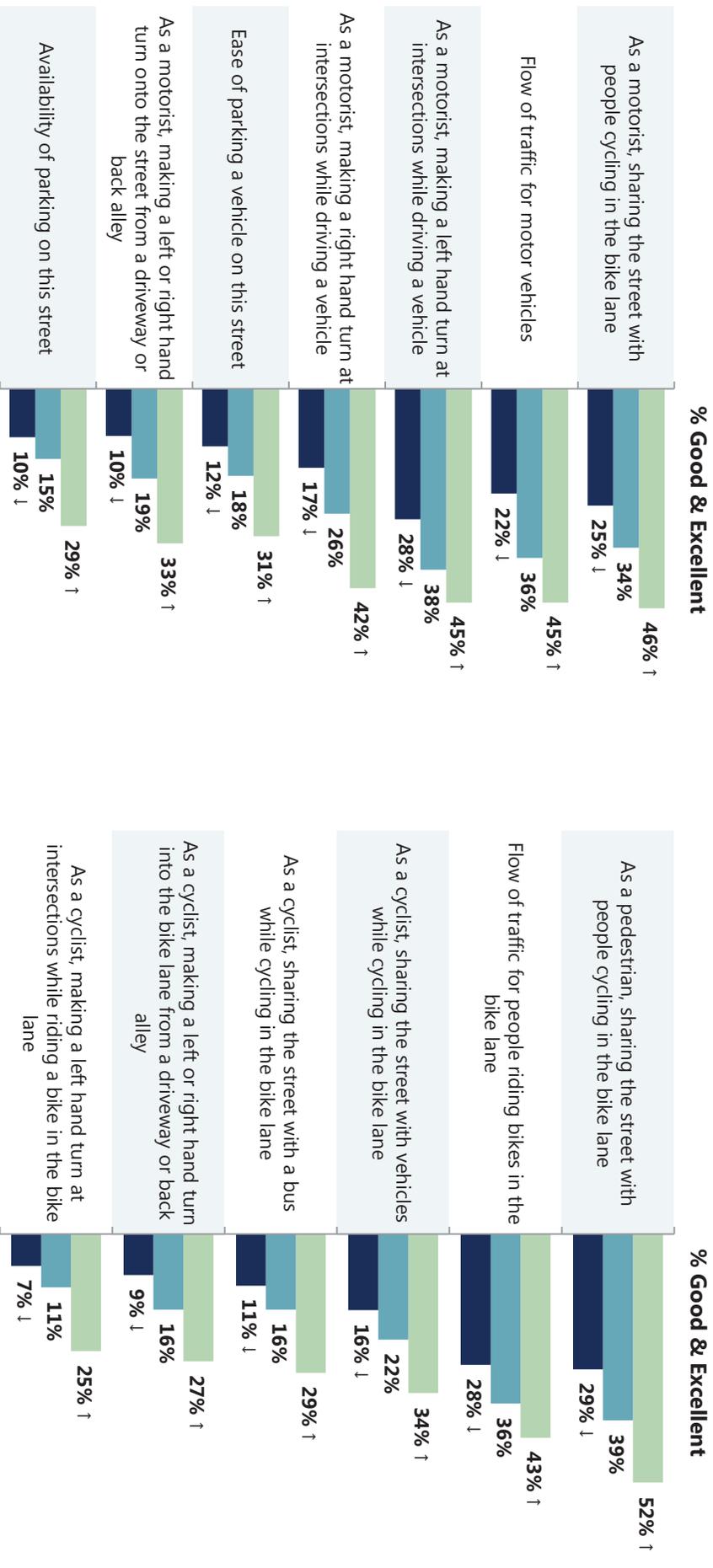
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 Base: All respondents, Representative: n=1004, Public: n=1363.

Younger residents tend to have more favourable opinions of 23rd Street travel experiences than their older counterparts.

4th Ave Bike Lane Impressions from Motorist Perspectives by Age Range

Representative Survey

4th Ave Bike Lane Impressions from Cyclist and Pedestrian Perspectives by Age Range



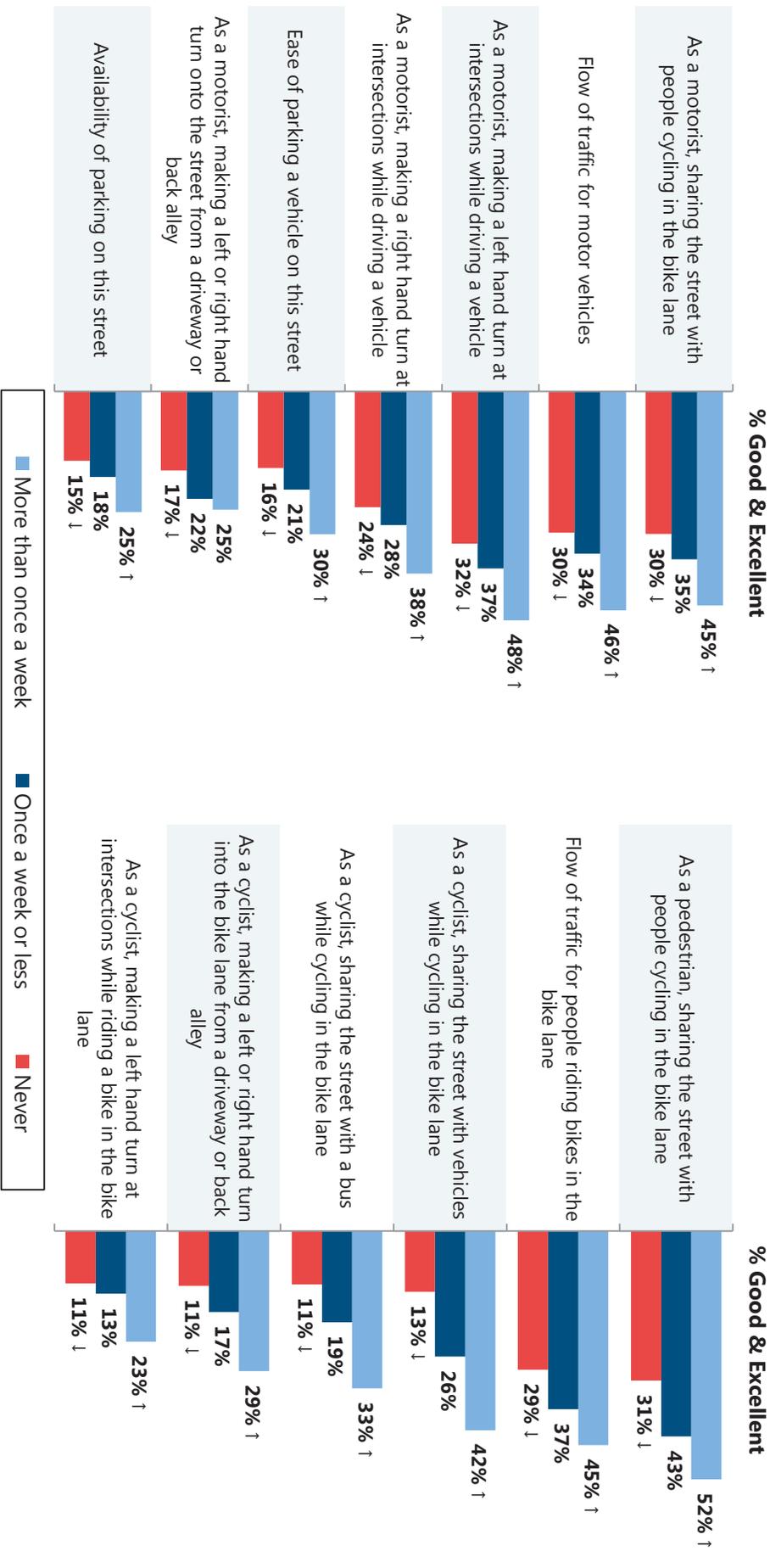
12. How would you rate your impressions of each of the following as it relates to the protected bike lanes along and 23rd Street, from Spadina Crescent to Idylwyld drive? Base: All respondents, Representative: n=1004.

Residents who cycle frequently tend to have more favourable opinions of 23rd Street travel experiences than those who never cycle.

4th Ave Bike Lane Impressions from Motorist Perspectives by Overall Cycling Frequency

Representative Survey

4th Ave Bike Lane Impressions from Cyclist and Pedestrian Perspectives by Overall Cycling Frequency

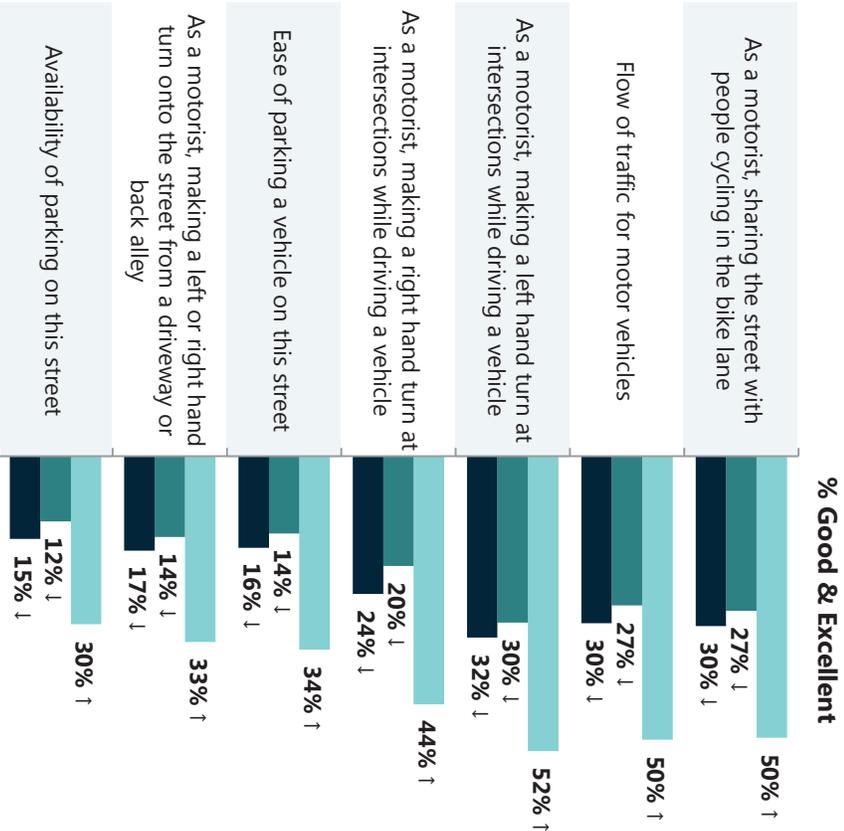


12. How would you rate your impressions of each of the following as it relates to the protected bike lanes along and 23rd Street, from Spadina Crescent to Idylwyld drive?
 Base: All respondents, Representative: n=1004.

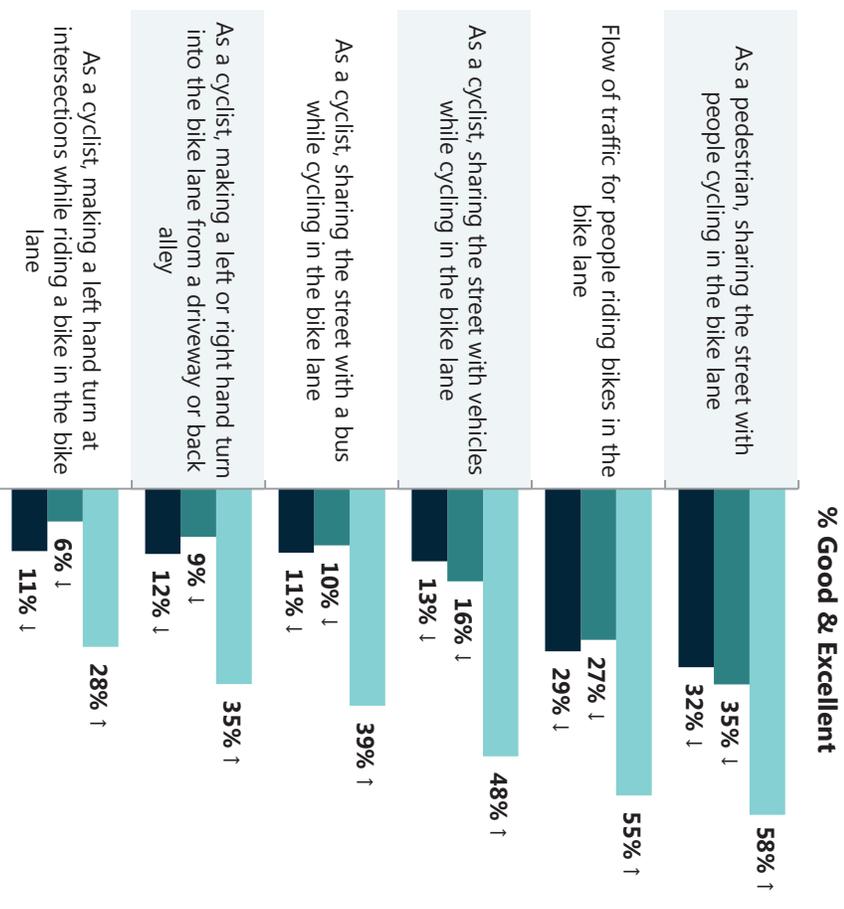
Residents who cycle downtown tend to have more favourable opinions of 23rd Street travel experiences than those who never cycle downtown or never cycle in general.

4th Ave Bike Lane Impressions from Motorist Perspectives by Downtown Cycling Frequency

Representative Survey

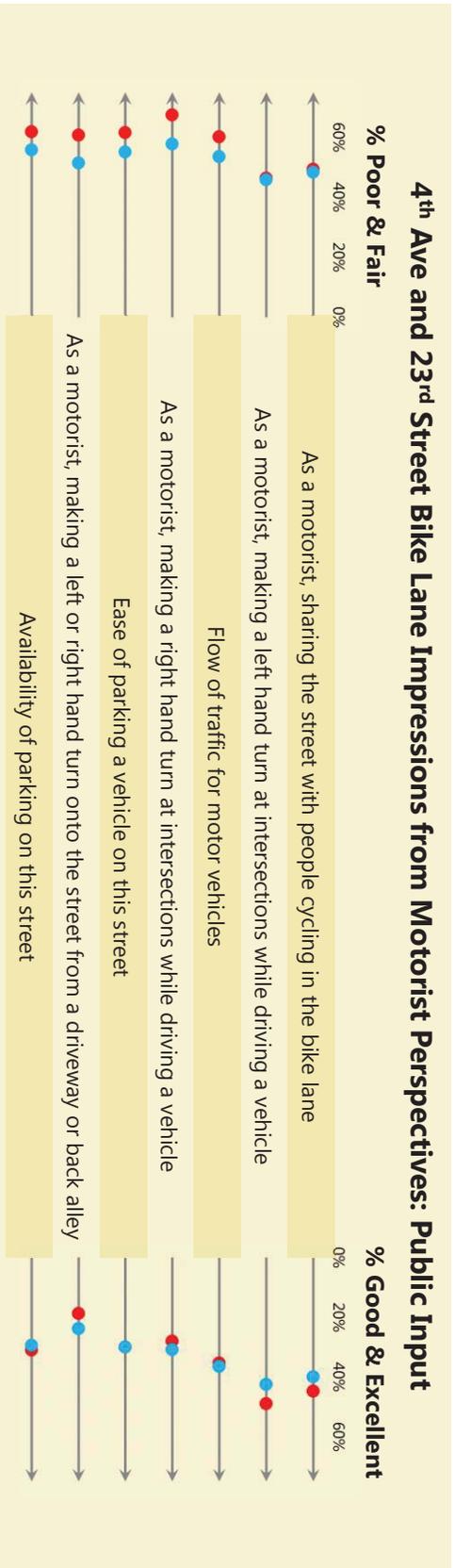
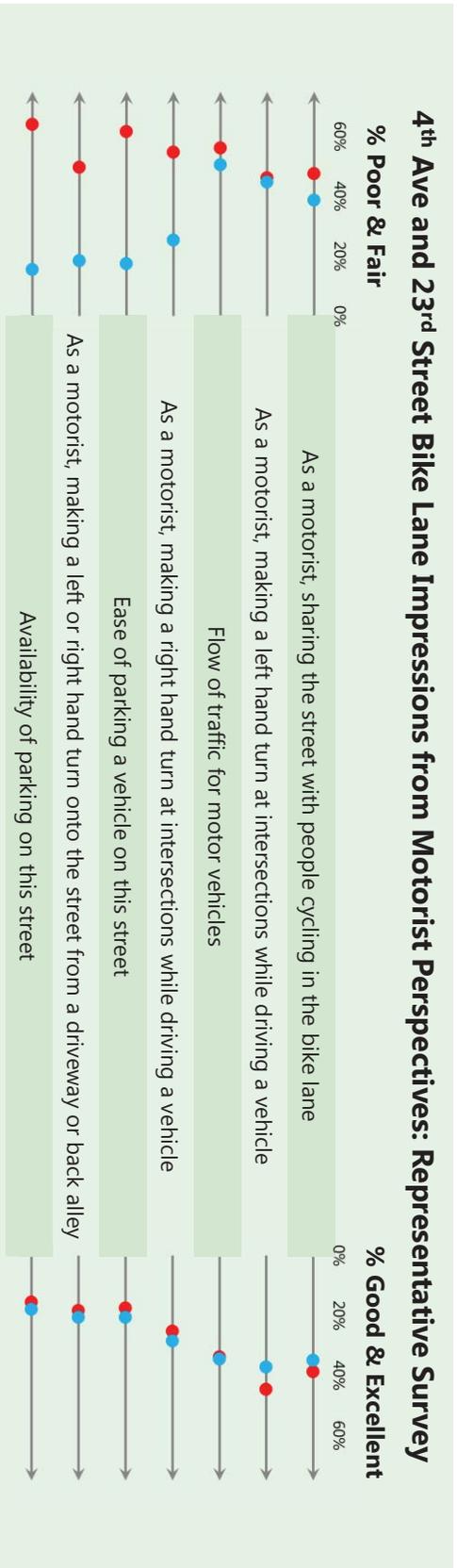


4th Ave Bike Lane Impressions from Cyclist and Pedestrian Perspectives by Downtown Cycling Frequency



12. How would you rate your impressions of each of the following as it relates to the protected bike lanes along and 23rd Street, from Spadina Crescent to Idylwyld drive?
Base: All respondents, Representative: n=1004.

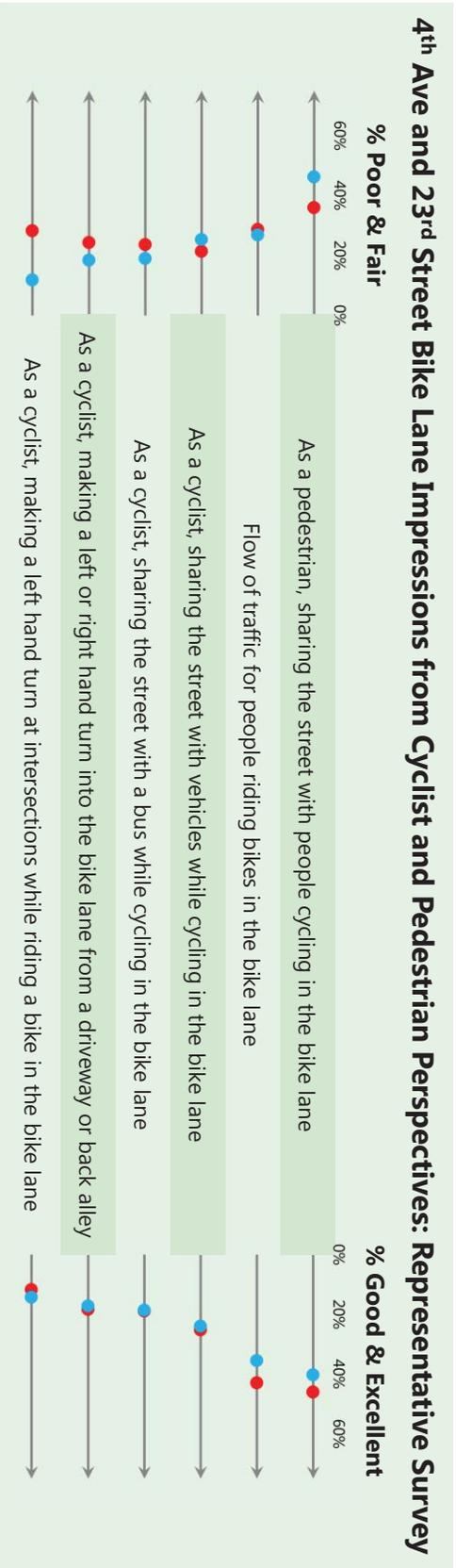
Comparing motorist experiences of 4th Ave and 23rd Street, opinions on both streets are largely consistent, although poor and fair assessments are fewer in select cases for 23rd Street.



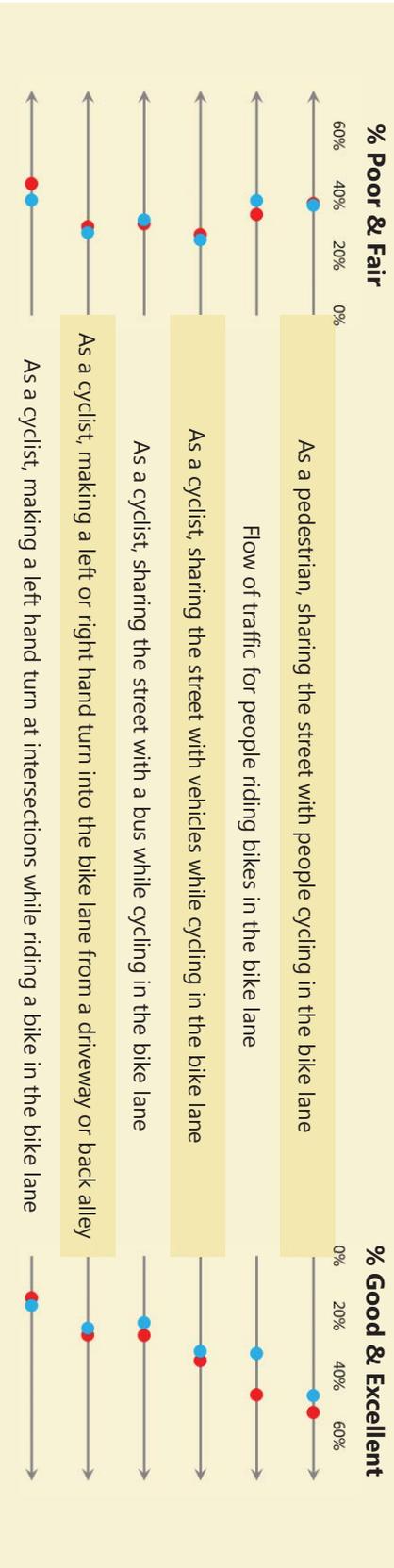
- How would you rate your impressions of each of the following as it relates to the protected bike lanes along 4th Ave, from 20th to 24th Street?
Base: All respondents, Representative: n=1004, Public: n=1363. Not shown: "Not sure".
- How would you rate your impressions of each of the following as it relates to the protected bike lanes along and 23rd Street, from Spadina Crescent to Idylwyld drive? Base: All respondents, Representative: n=1004, Public: n=1363. Not shown: "Not sure".

Comparing pedestrian and cyclist experiences of 4th Ave and 23rd Street, opinions on both streets are also largely consistent.

4th Ave and 23rd Street Bike Lane Impressions from Cyclist and Pedestrian Perspectives: Representative Survey



4th Ave and 23rd Street Bike Lane Impressions from Cyclist and Pedestrian Perspectives: Public Input



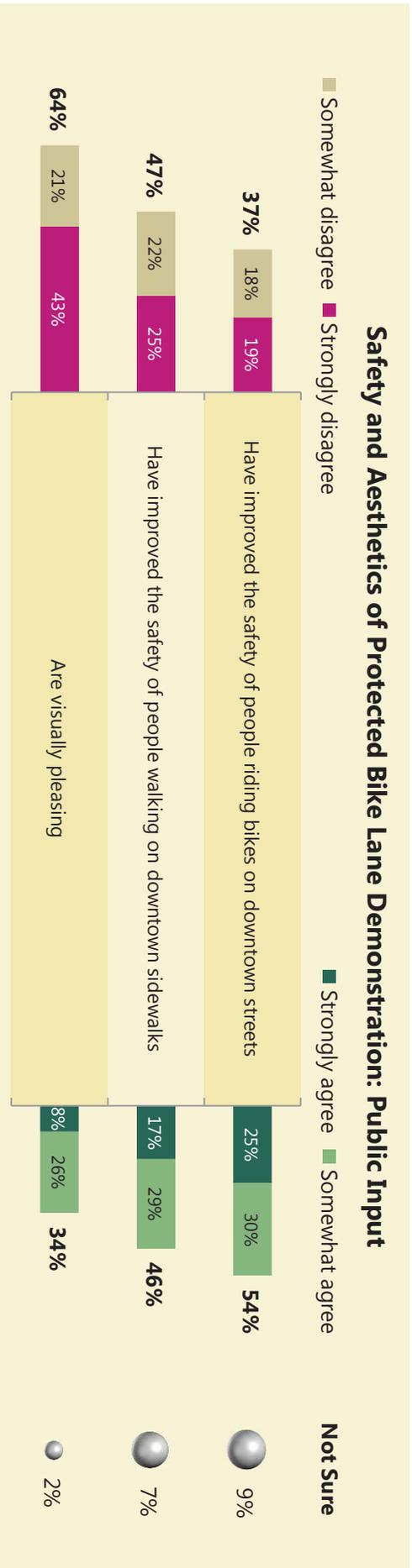
- How would you rate your impressions of each of the following as it relates to the protected bike lanes along 4th Ave, from 20th to 24th Street?
Base: All respondents, Representative: n=1004, Public: n=1363. Not shown: "Not sure".
- How would you rate your impressions of each of the following as it relates to the protected bike lanes along and 23rd Street, from Spadina Crescent to Idylwyld drive? Base: All respondents, Representative: n=1004, Public: n=1363. Not shown: "Not sure".

A small majority believe the protected bike lanes have improved safety of those riding bicycles downtown, while roughly one half believe pedestrian safety has been improved. Many do not find the bike lanes visually pleasing.

Safety and Aesthetics of Protected Bike Lane Demonstration: Representative Survey



Safety and Aesthetics of Protected Bike Lane Demonstration: Public Input

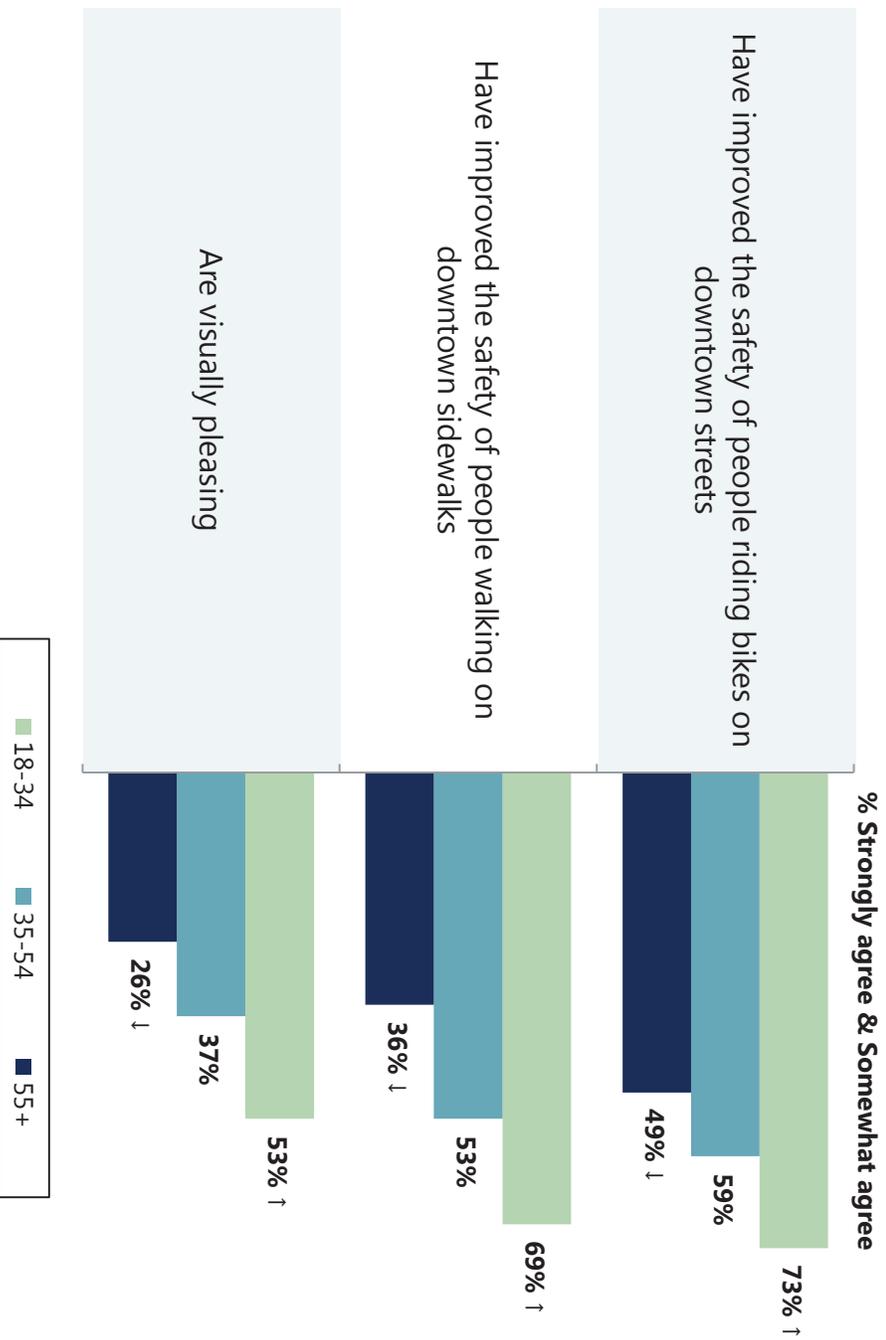


13. Broadly speaking, please indicate your level of agreement with the following statements about the protected bike lanes currently installed in the downtown. Would you say they... Base: All respondents, Representative: n=1004, Public, n=1363.

Younger residents are more likely to agree with all three safety and visual statements than their older counterparts.

Representative Survey

Safety and Aesthetics of Protected Bike Lane Demonstration by Age Range

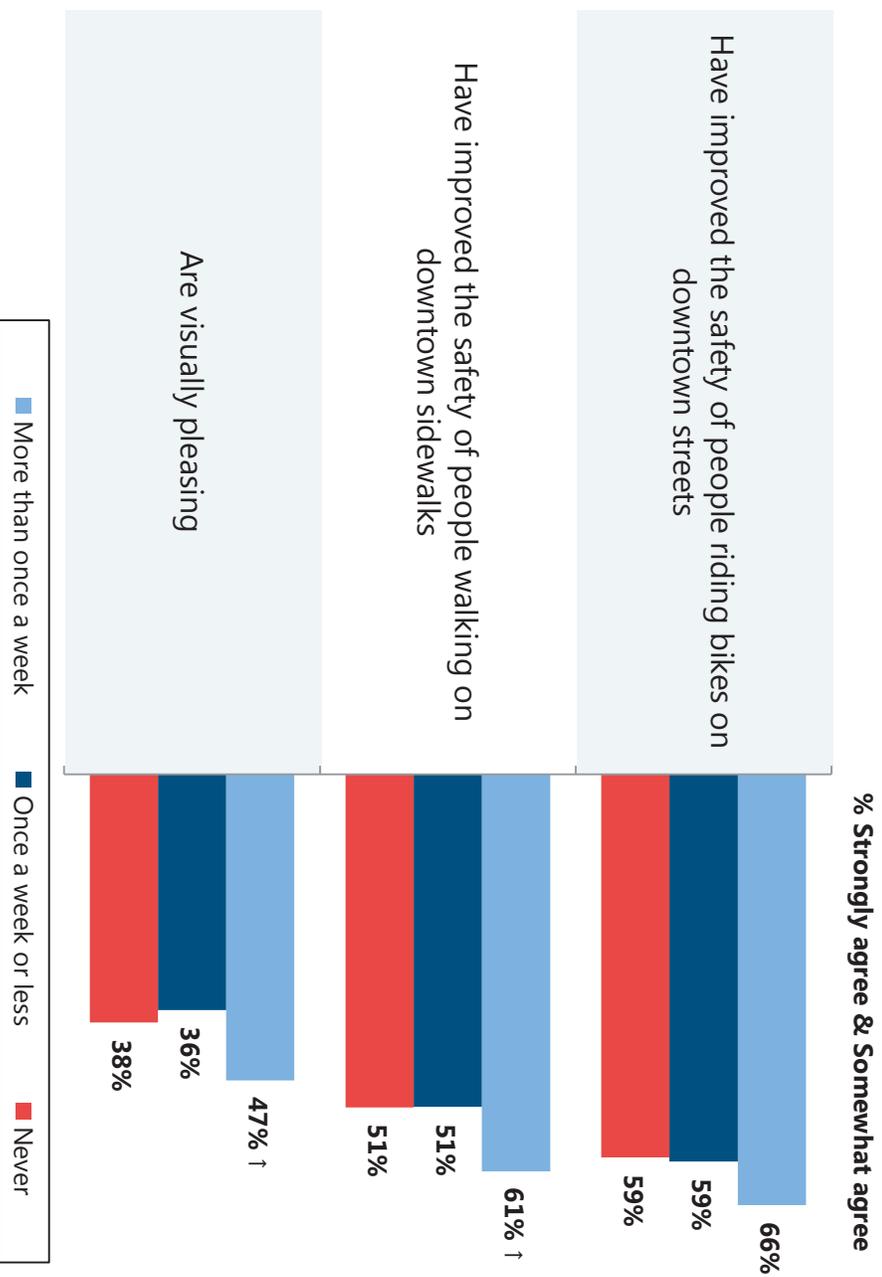


13. Broadly speaking, please indicate your level of agreement with the following statements about the protected bike lanes currently installed in the downtown. Would you say they... Base: All respondents, Representative: n=1004.

Frequent cyclists are more likely to agree that the bike lanes have improved pedestrian safety and are visually pleasing.

Representative Survey

Safety and Aesthetics of Protected Bike Lane Demonstration by Overall Cycling Frequency

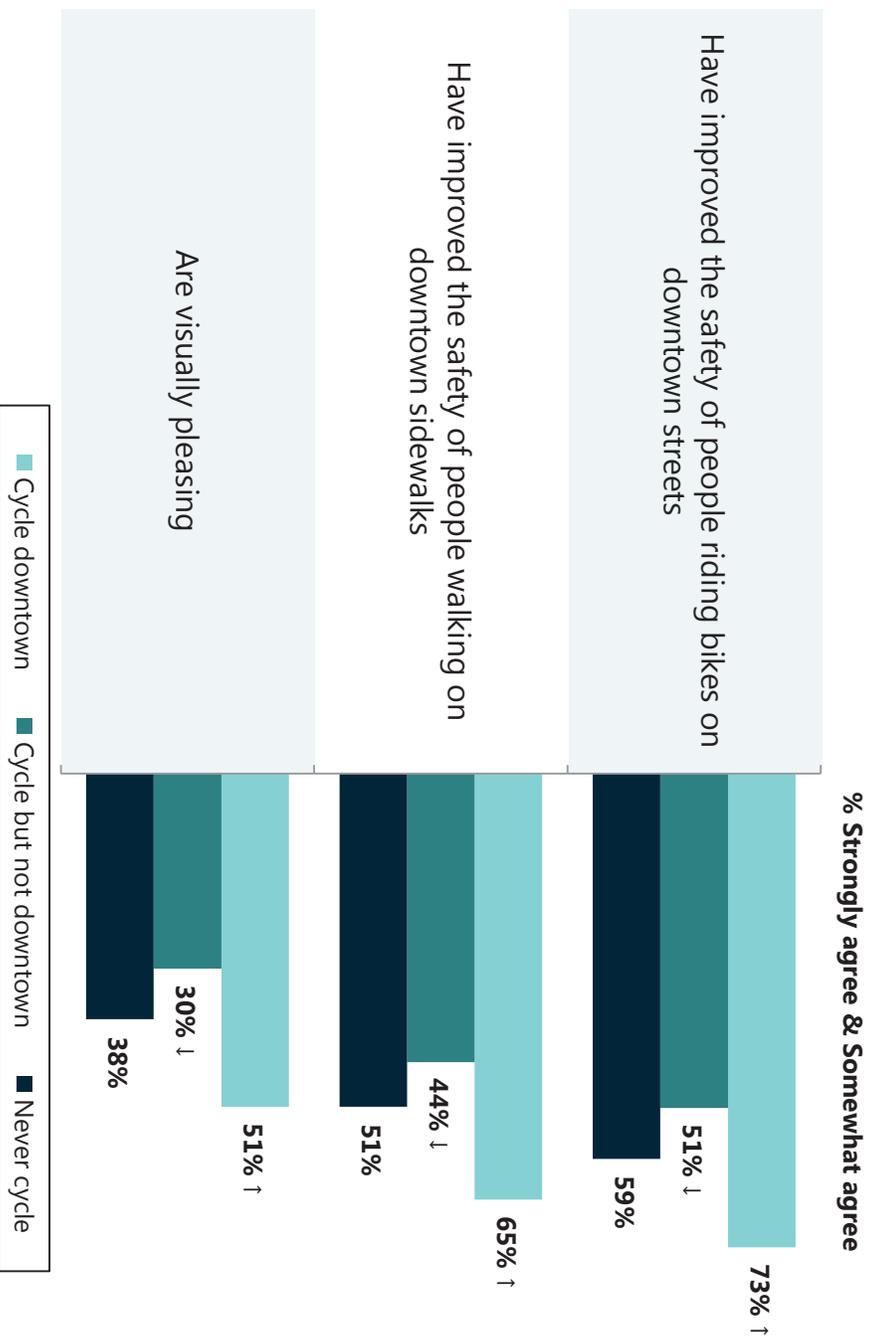


13. Broadly speaking, please indicate your level of agreement with the following statements about the protected bike lanes currently installed in the downtown. Would you say they... Base: All respondents, Representative: n=1004.

Downtown cyclists are more likely to agree with all three safety and visual statements than those who do not cycle downtown or never cycle. In fact, those who cycle but not downtown are least likely to agree with each statement.

Representative Survey

Safety and Aesthetics of Protected Bike Lane Demonstration by Downtown Cycling Frequency



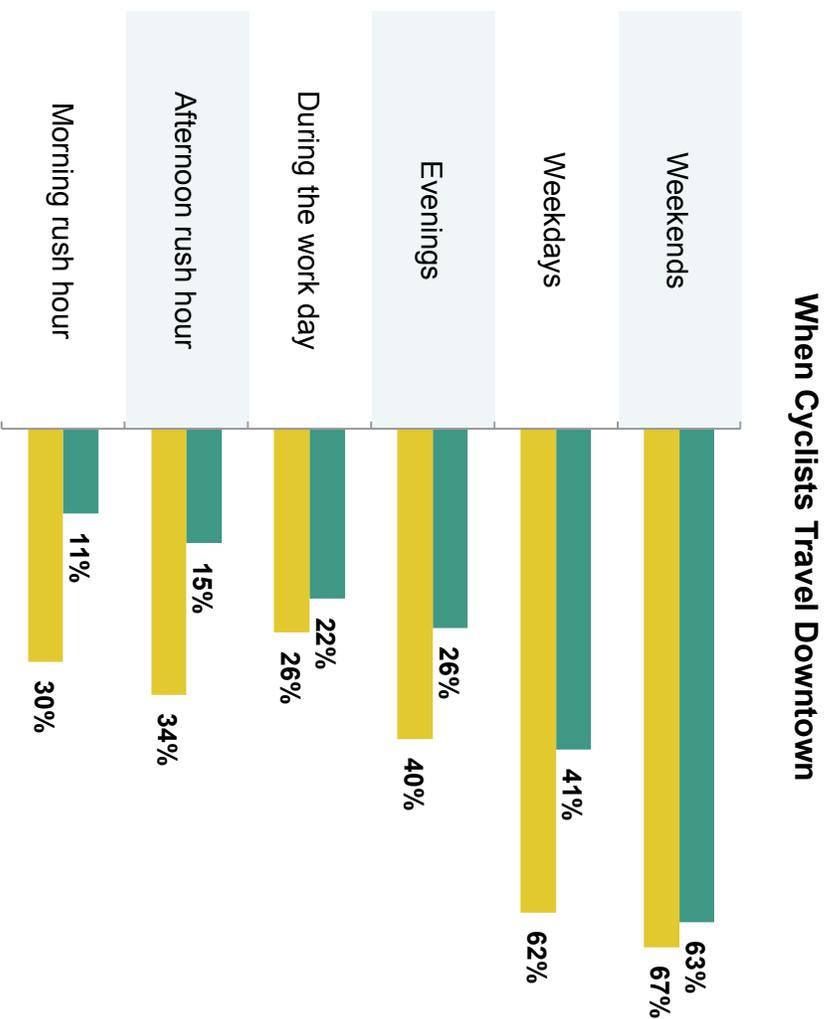
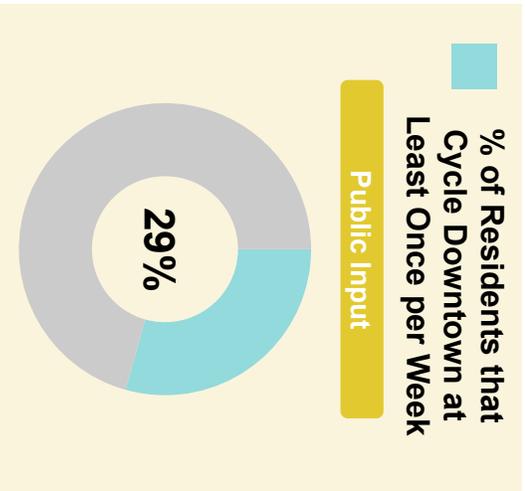
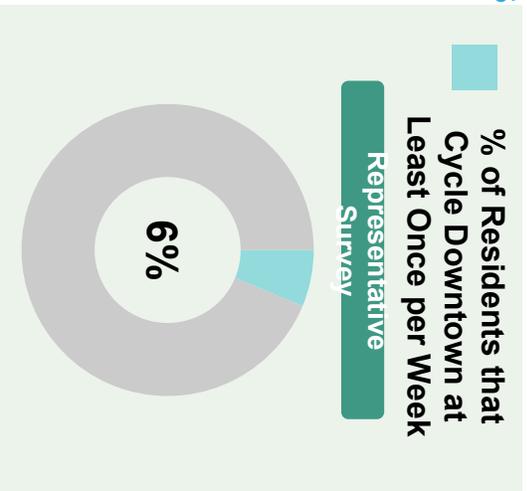
13. Broadly speaking, please indicate your level of agreement with the following statements about the protected bike lanes currently installed in the downtown. Would you say they... Base: All respondents, Representative: n=1004.



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Downtown Cycling

Among those who cycle downtown, weekend activity is most common, although weekday activity is also prominent, especially among the public input respondent **bas**

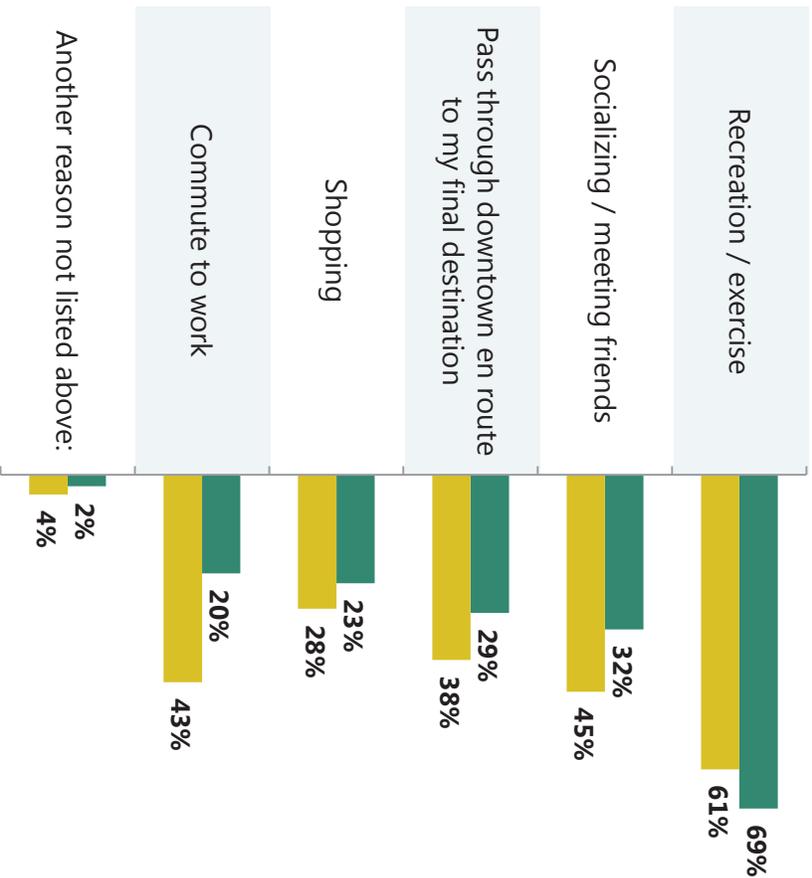


- 15. How often are you travelling into and within the downtown core through each of the following methods? Base: Respondents that cycle, Representative: n=616.
- 16. When are you typically cycling into and within downtown? (select all that apply) Base: Respondents that cycle downtown, Representative: n=293, Public, n=801.

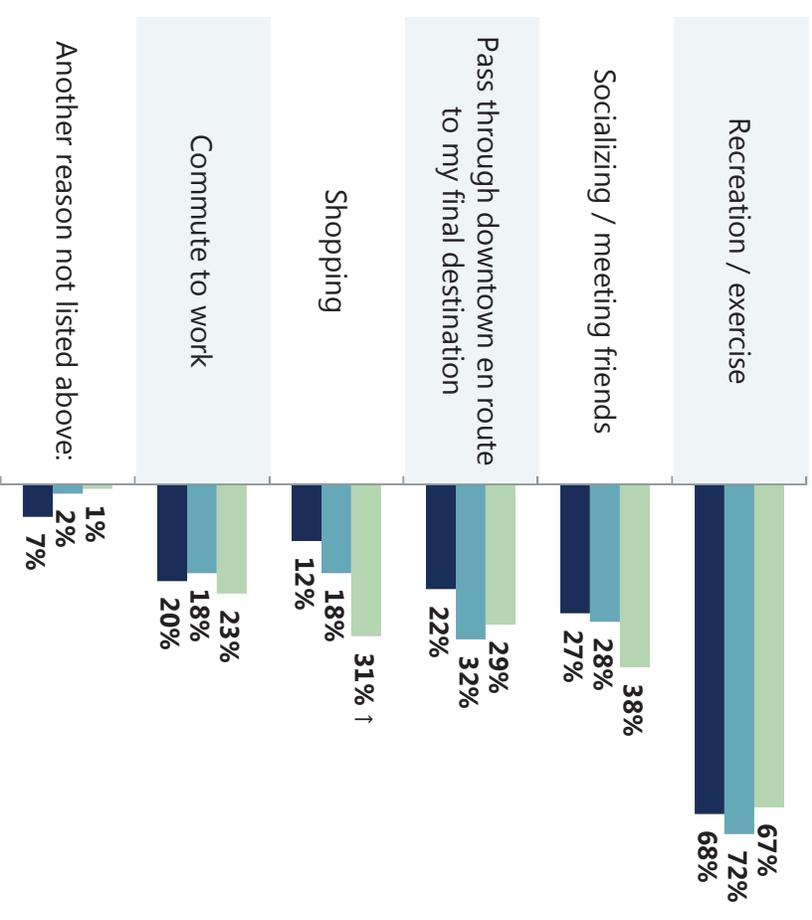
Common reasons for downtown cycling include recreation, social engagements, passing through, shopping or commuting to work. Younger cyclists are more likely than older cyclists to cycle downtown for shopping.

Representative Survey

Reasons for Cycling Downtown



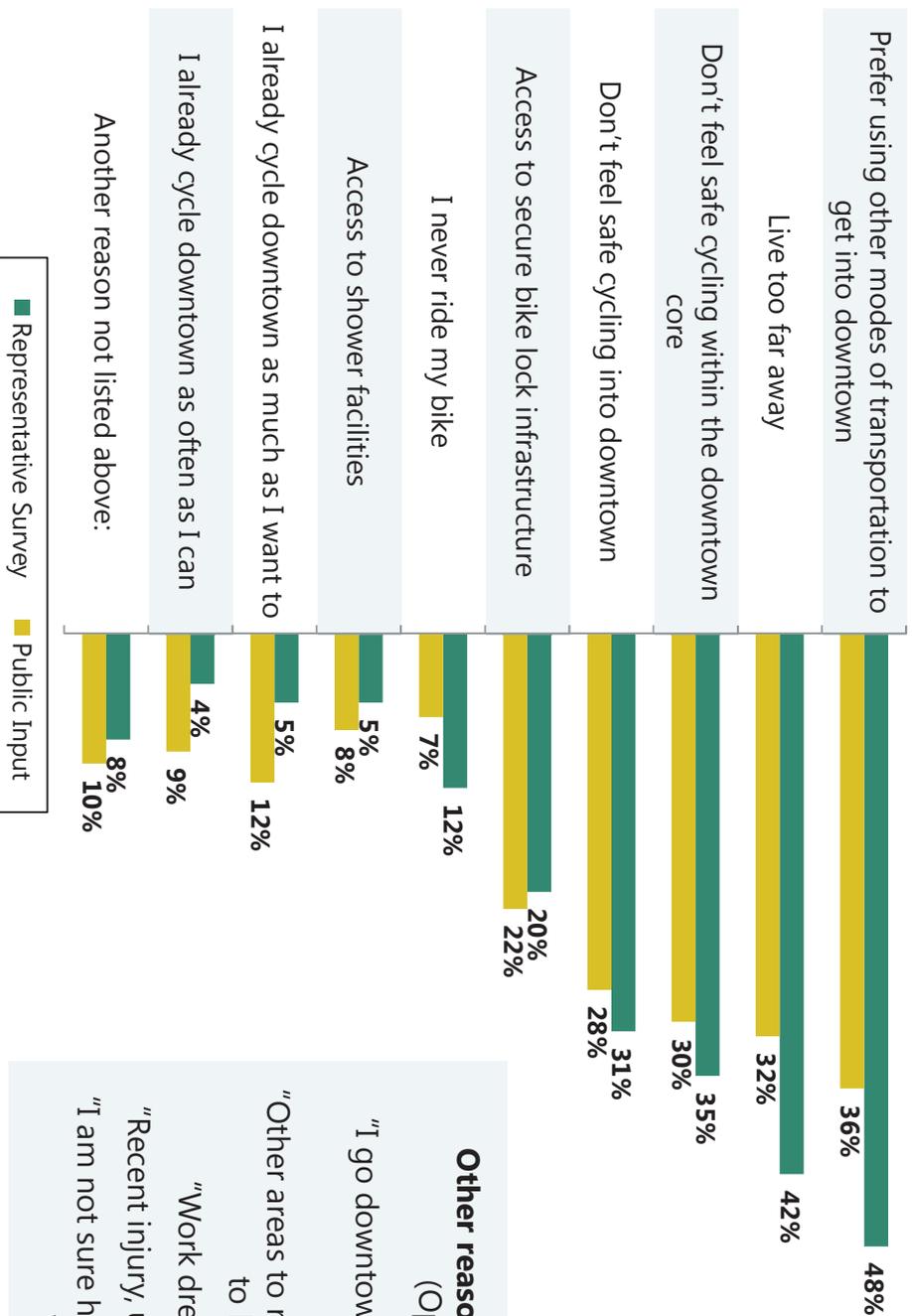
Reasons for Cycling Downtown by Age Range



17. When you cycle into or within downtown what are the common purposes of your trips? (select all that apply) Base: Respondents that cycle downtown, Representative: n=293, Public: n=801.

Common reasons for not cycling downtown include preference, distance from downtown, safety and access to bicycle lock infrastructure.

Reasons for Not Cycling Downtown



Other reasons for not cycling downtown: (Open-ended responses)

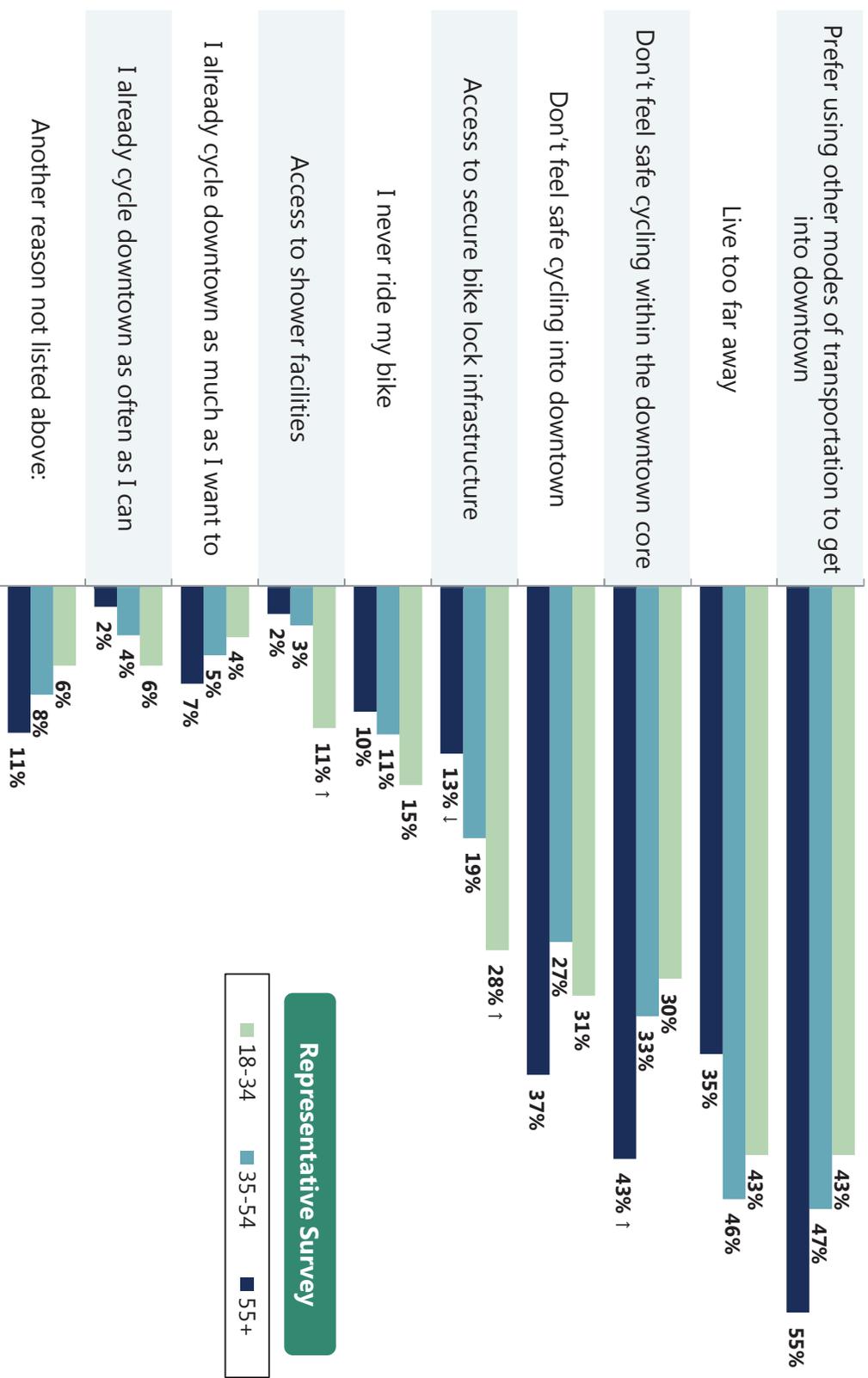
- "I go downtown to shop, hard to carry packages home on a bike"
- "Other areas to ride bike that are more suited/scenic to biking as a recreation."
- "Work dress code not ideal for cycling."
- "Recent injury, unable to cycle as much as before."
- "I am not sure how to turn left on a bike downtown with the new lanes."

15. How often are you travelling into and within the downtown core through each of the following methods? Base: Respondents that cycle. Representative: n=616.

18. What are some of the reasons you don't bike [downtown/downtown more often]? (select all that apply) Base: Respondents that have access to a bicycle, Representative: n=688, Public: n=1073.

Younger cyclists are more concerned about access to secure bicycle lock infrastructure and access to shower facilities. Older cyclists feel less safe cycling into downtown.

Reasons for Not Cycling Downtown by Age Range



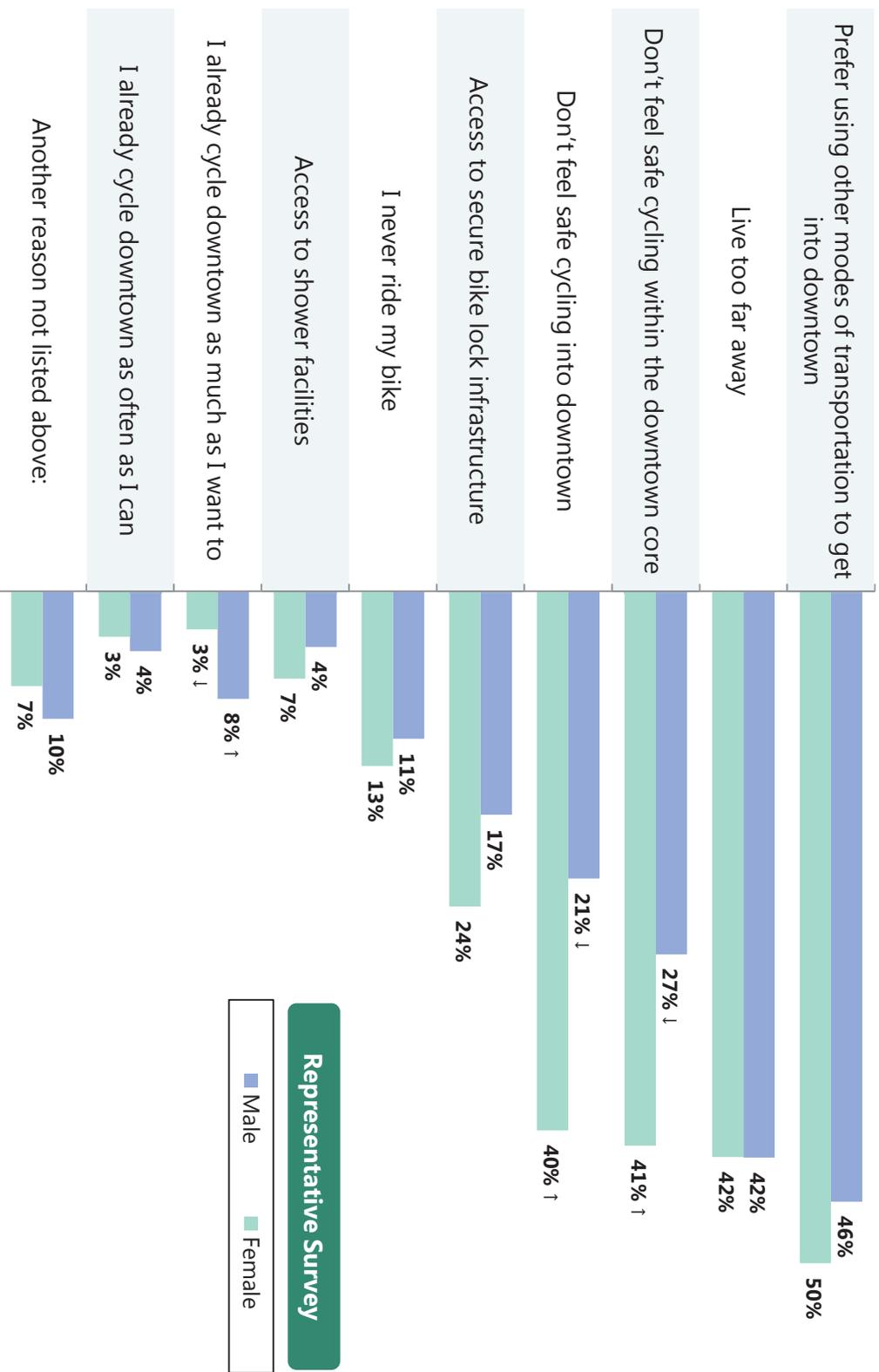
Representative Survey

- 18-34
- 35-54
- 55+

18. What are some of the reasons you don't bike [downtown/downtown more often]? (select all that apply) Base: Respondents that have access to a bicycle, except those who cycle downtown most days of the week, Representative: n=688.

Female cyclists are more likely to feel unsafe cycling into and within the downtown core.

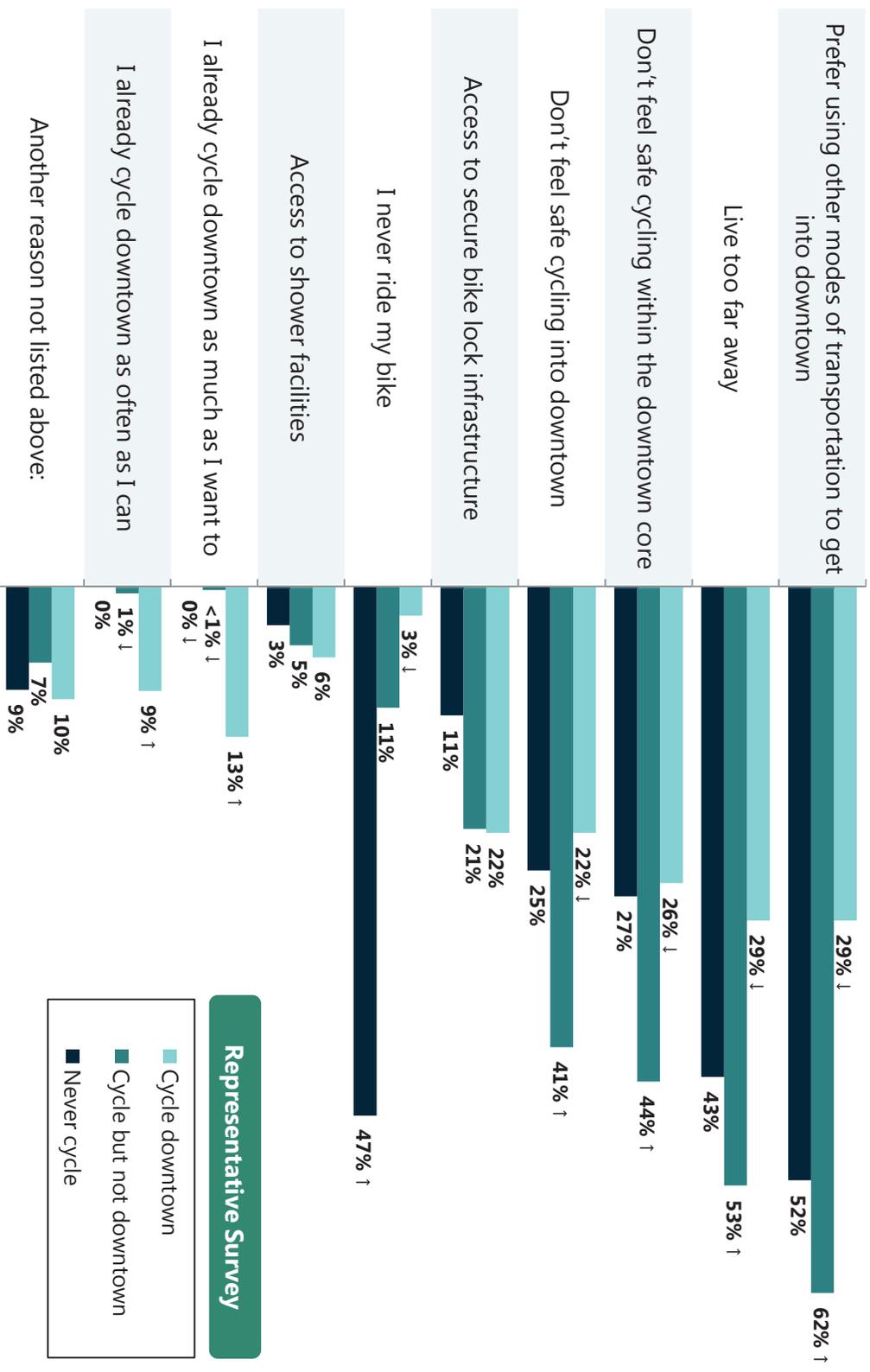
Reasons for Not Cycling Downtown by Gender



18. What are some of the reasons you don't bike [downtown/downtown more often]? (select all that apply) Base: Respondents that have access to a bicycle, except those who cycle downtown most days of the week, Representative: n=688.

Those with a bicycle who do not cycle downtown are more likely to report living too far away and not feeling safe as reasons for not biking into or within downtown.

Reasons for Not Cycling Downtown by Downtown Cycling Frequency

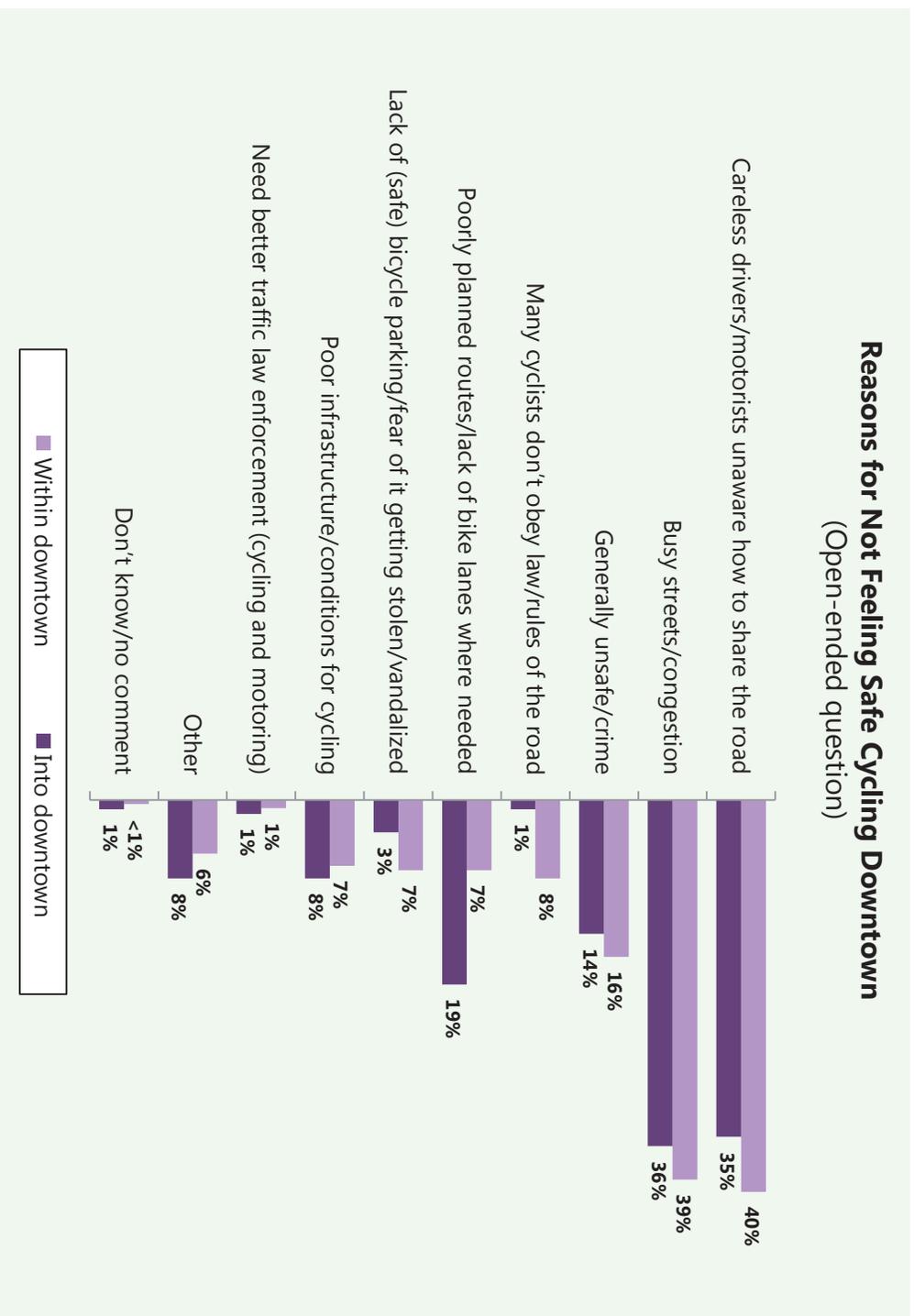


18. What are some of the reasons you don't bike [downtown/downtown more often]? (select all that apply) Base: Respondents that have access to a bicycle, except those who cycle downtown most days of the week, Representative: n=688.

Common safety concerns with cycling into and within downtown from the representative survey include sharing traffic with dangerous drivers, heavy traffic, crime and poorly planned routes.

Representative Survey

Reasons for Not Feeling Safe Cycling Downtown
(Open-ended question)

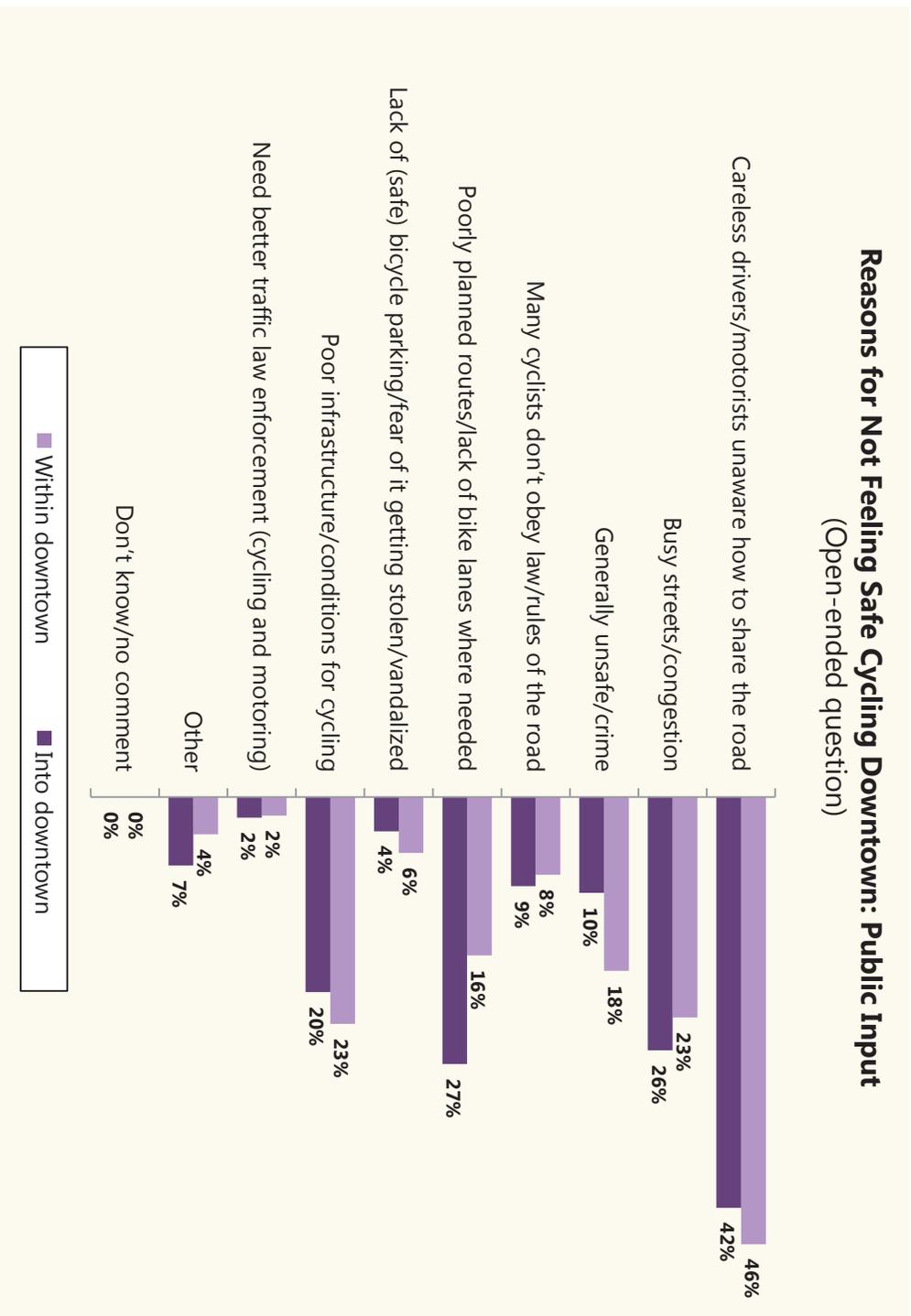


19. Why don't you feel safe cycling ... Base: Respondents who answered "Don't feel safe cycling within/into the downtown core" in question 18, Representative: n=211 to 236.

Common safety concerns with cycling into and within downtown from the public input survey are consistent with the representative study.

Public Input

Reasons for Not Feeling Safe Cycling Downtown: Public Input
(Open-ended question)



19. Why don't you feel safe cycling... Base: Respondents who answered "Don't feel safe cycling within/into the downtown core" in question 18, Public: n=284 to 313.

Select comments from those who do not feel safe cycling into or within downtown are featured below.

Into Downtown

- "Because there are no protected bike lanes anywhere outside of downtown and getting over and onto the bridges is a pain."
- "Drivers and cyclists are not good at sharing the roads. Not enough bike paths between home and downtown."
- "There is no good option to get across the river by the Broadway Bridge. Vehicles drive in and out around bikers going on the road, and there are many pedestrians on the walking path."
- "Traffic to get to downtown is heavy and motorists don't pay enough attention."
- "There's no dedicated lanes into downtown. I refuse to ride on the street because it's not safe. The sidewalk is for pedestrians. So where does a person ride their bike to feel safe?"
- "Cars on the street don't give room. This is an issue largely because bicycles cannot travel fast enough to be part of the flow of traffic."

Within the Downtown Core

- "Dangerous. Bike lanes are inconsistent, designated lanes for a couple of blocks then nothing. Motorists do not look when opening car doors into the bike lane. In winter, the lanes are not always visible."
- "Traffic and lack of secure lock up facilities."
- "Too many motorists unwilling to share the road, not paying attention to cyclists."
- "Very easy for bikes to be stolen downtown. People run traffic lights. Roads are very tight and narrow."
- "Vehicles making turns do not yield to cyclists. Also, people use the bike lanes riding against the flow of traffic – bike lanes are not wide enough for that."
- "Icy roads, and bad drivers which I do not feel the bike lanes help."

Representative Survey

Public Input

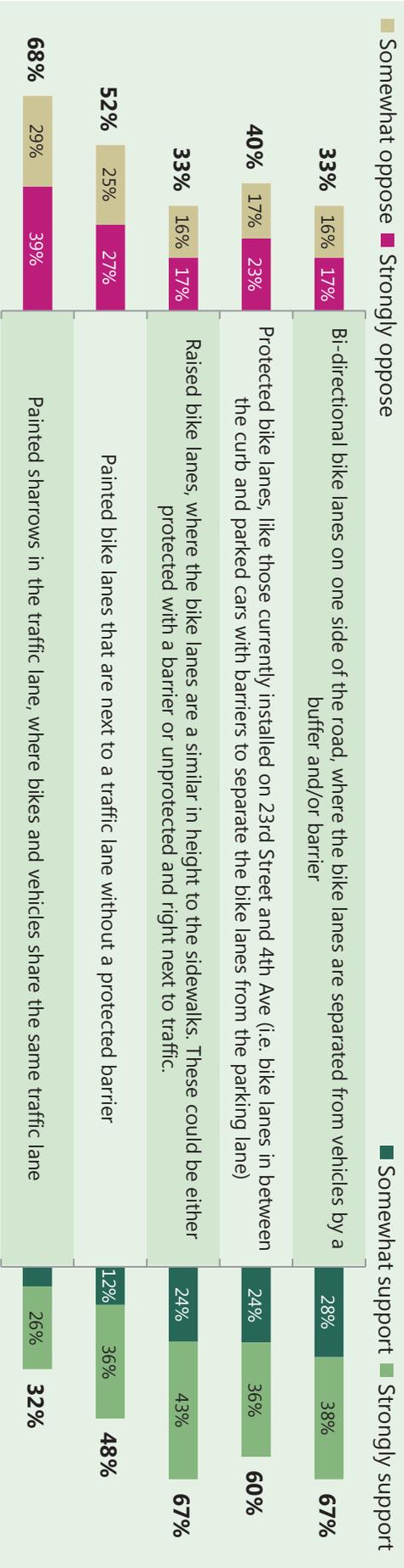
19. Why don't you feel safe cycling ... Base: Respondents who answered "Don't feel safe cycling within/into the downtown core" in question 18. Representative: n=211 to 236.



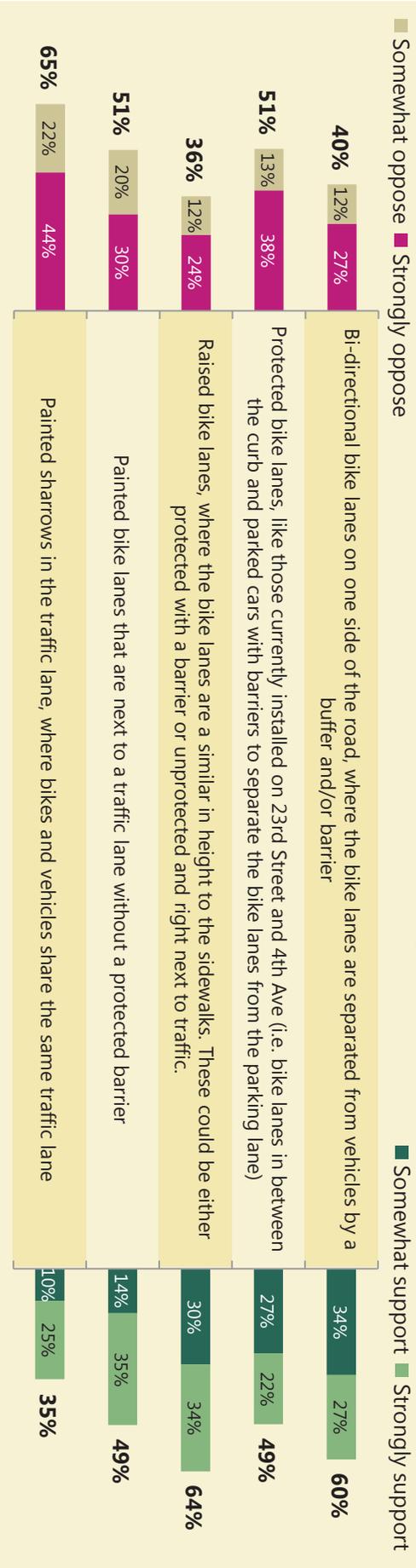
Future Downtown Bike Lane Preferences

There is moderate support for most forms of proposed future bike lanes, with options that physically separate bicycles from traffic emerging as most popular.

Favorability of Potential Future Bike Lane Types: Representative Survey



Favorability of Potential Future Bike Lane Types: Public Input



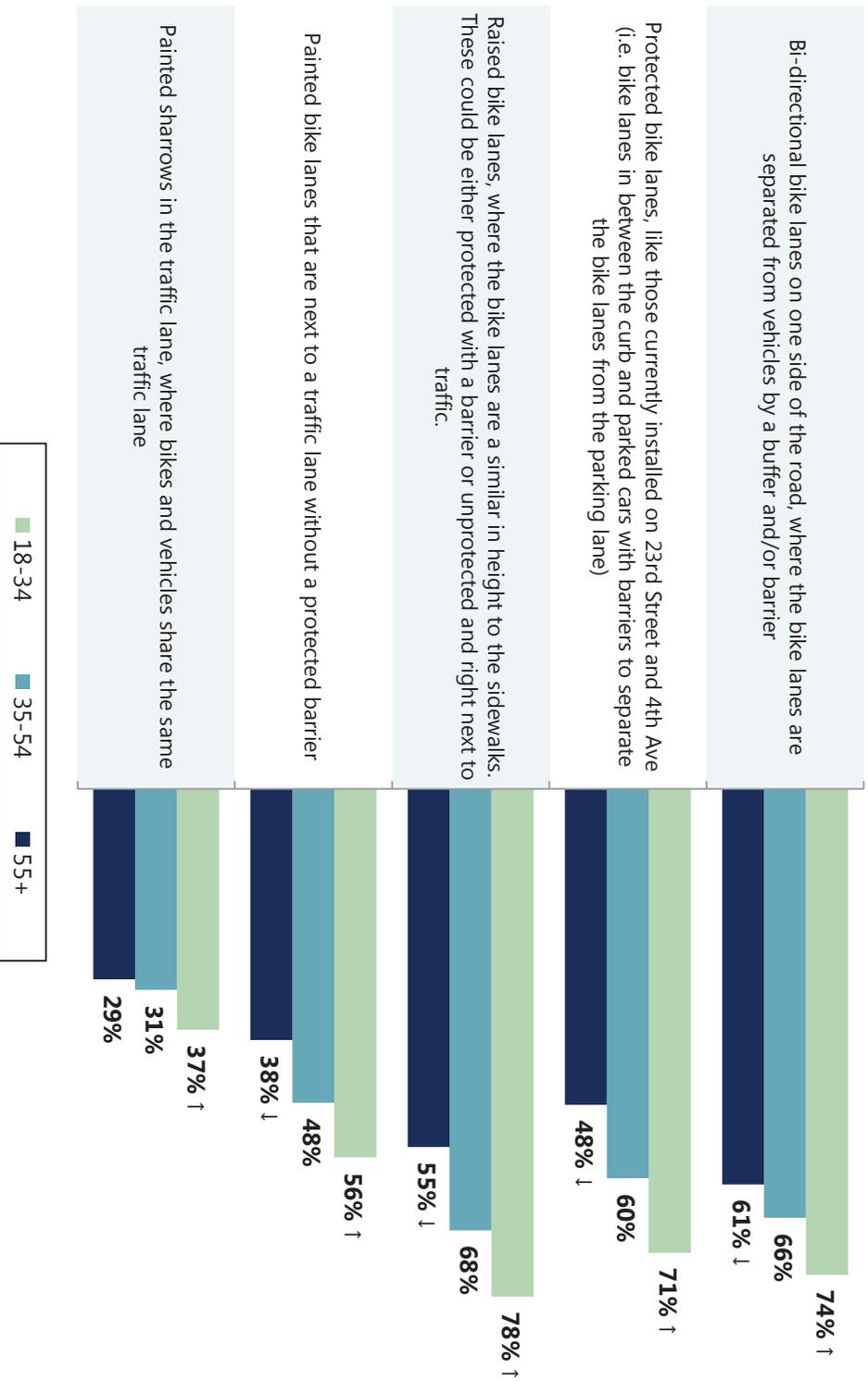
20. Thinking for a moment about all the different users of streets in downtown, not just yourself, please rate your level of support for each of the following types of bike lanes. Base: All respondents, Representative: n=1004, Public: n=1363.

Younger residents are more supportive of all potential bike lane types, although support for painted sharrows remains low among all age ranges.

Representative Survey

Favorability of Potential Future Bike Lane Types by Age Range

% Strongly support & Somewhat support



20. Thinking for a moment about all the different users of streets in downtown, not just yourself, please rate your level of support for each of the following types of bike lanes. Base: All respondents, Representative: n=1004.

Residents who never cycle are less supportive of unprotected painted bike lanes.

Favorability of Potential Future Bike Lane Types by Overall Cycling Frequency

% Strongly support & Somewhat support



Representative Survey

■ More than once a week
 ■ Once a week or less
 ■ Never

20. Thinking for a moment about all the different users of streets in downtown, not just yourself, please rate your level of support for each of the following types of bike lanes. Base: All respondents, Representative: n=1004.

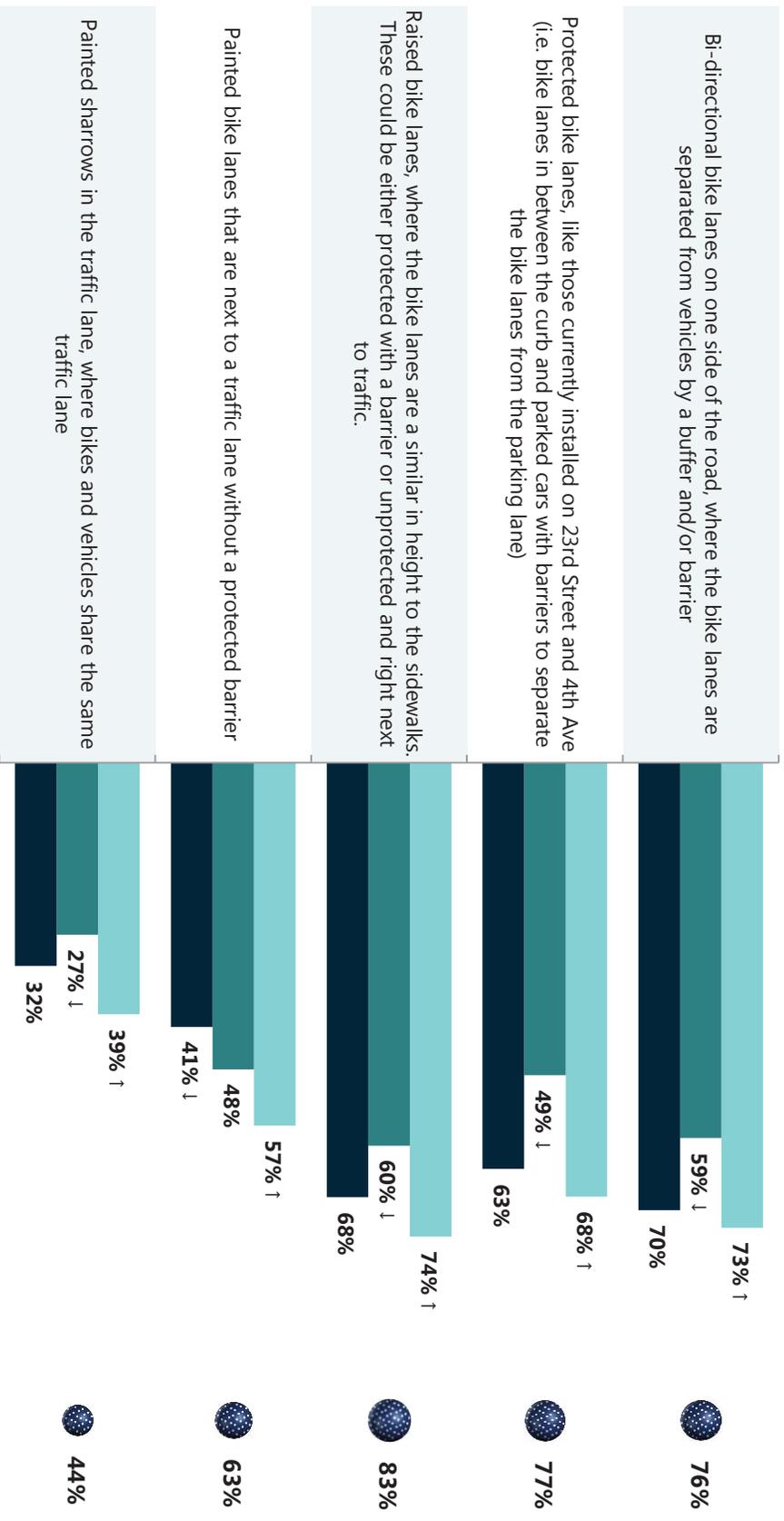
Downtown cyclists are more supportive of all potential bike lane types, while those who cycle but not downtown are least supportive. Winter cyclists strongly support bike lanes that separate cyclists from vehicle traffic.

Representative Survey

Favorability of Potential Future Bike Lane Types by Downtown Cycling Frequency

% Strongly support & Somewhat support

Winter Cyclists



20. Thinking for a moment about all the different users of streets in downtown, not just yourself, please rate your level of support for each of the following types of bike lanes. Base: All respondents, Representative: n=1004.



When asked where residents would like to see additional future bike lanes in the downtown core, opinions are mixed, with Spadina Crescent emerging as the most popular, along with 20th Street, 1st Ave and 2nd Ave. Sizable proportions feel there should be no future lanes at all, or are uncertain where future lanes should be created.

**Preferred Future Bike Lane Locations:
Representative Survey**



**Preferred Future Bike Lane Locations:
Public Input**



**I don't think there should be additional
dedicated bike lanes downtown**
36%

Not sure
24%

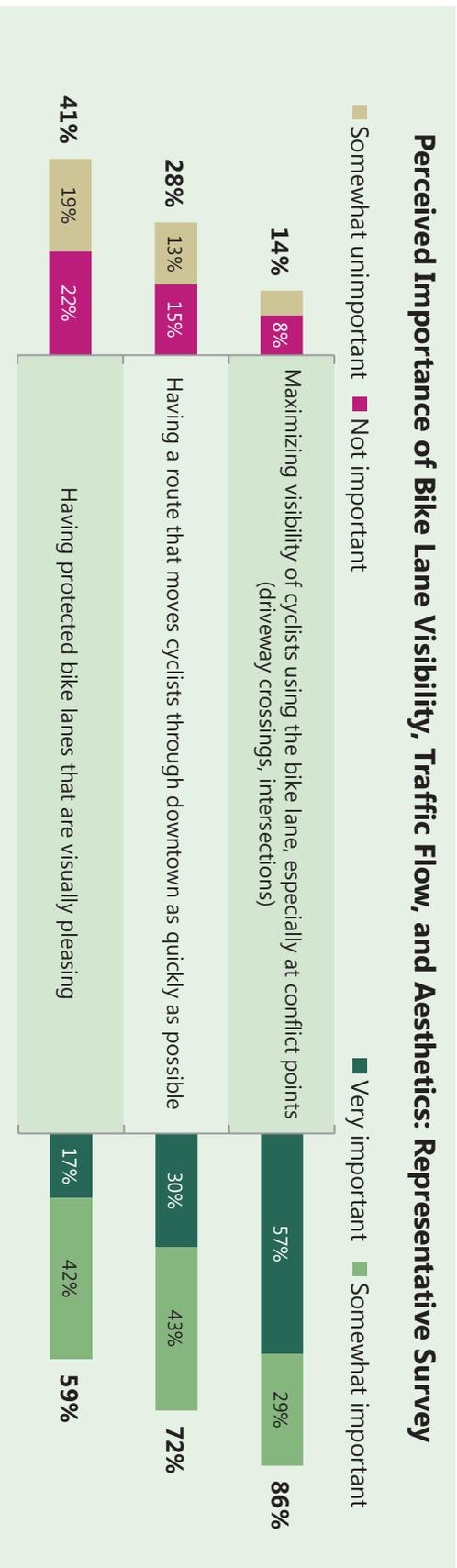
**I don't think there should be additional
dedicated bike lanes downtown**
41%

Not sure
11%

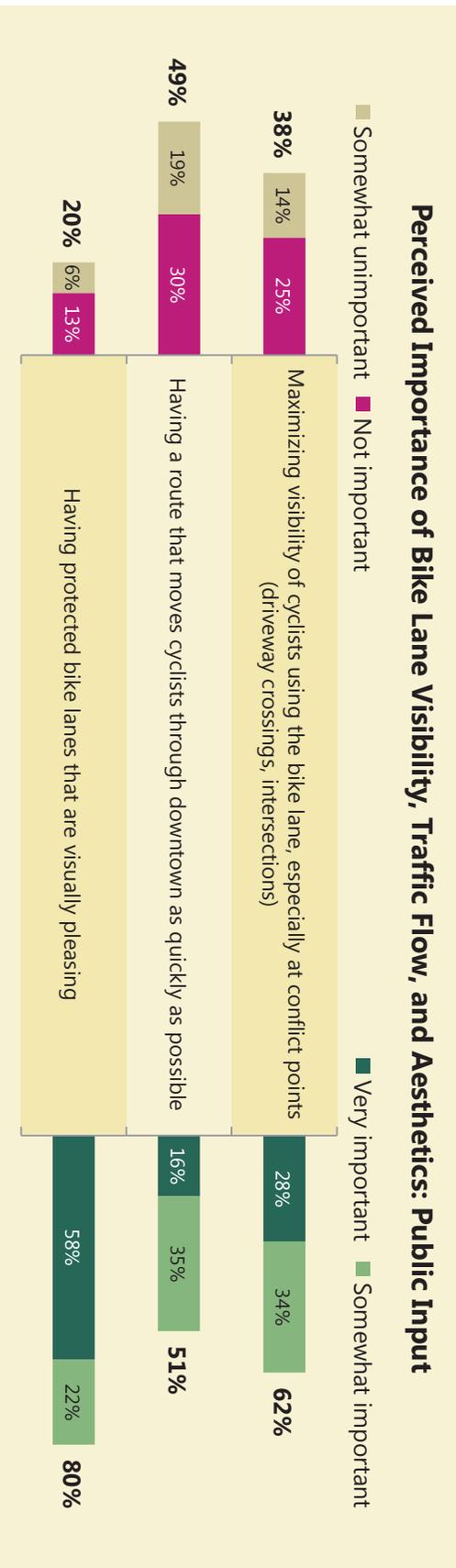
21. Thinking about the City's goal of providing a complete and connected network for people of all ages and abilities across all modes of transportation, where else in the downtown core do you believe bike lanes should be placed? Base: All respondents, Representative: n=1004, Public: n=1363.

Perceived importance of maximizing cyclist visibility is high among the representative sample while fast routes and visually pleasing protected bike lanes are of comparatively less importance. Respondents to the public input survey largely feel the opposite on the latter item.

Perceived Importance of Bike Lane Visibility, Traffic Flow, and Aesthetics: Representative Survey



Perceived Importance of Bike Lane Visibility, Traffic Flow, and Aesthetics: Public Input



22. Broadly speaking, how important are each of the following as they relate to protected bike lanes in downtown Saskatoon... Base: All respondents, Representative: n=1004, Public: n=1363.

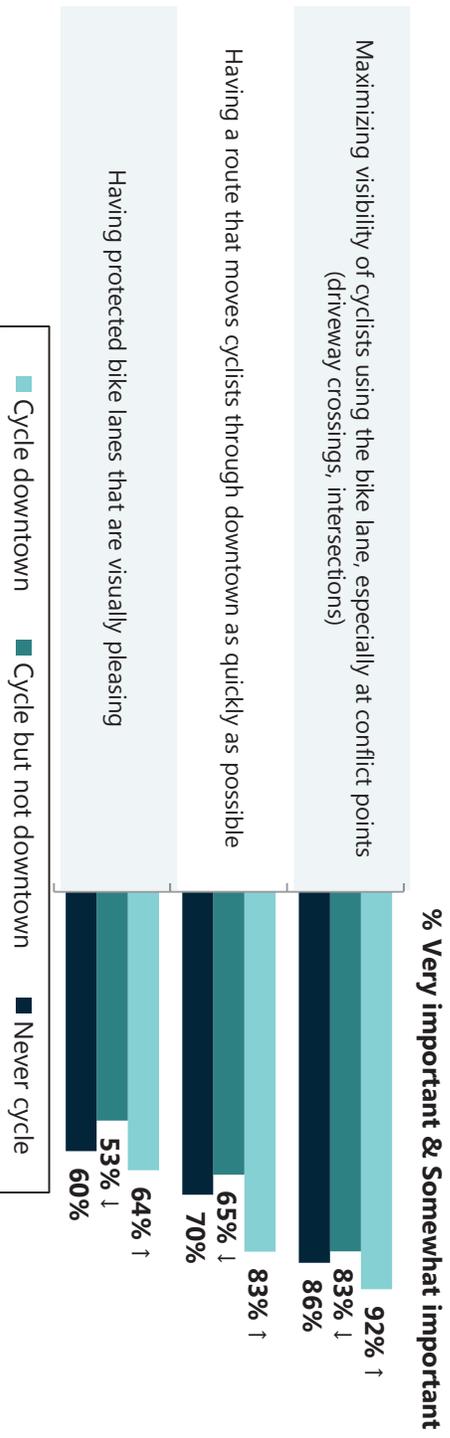
Younger residents place more value on cyclist traffic flow than older residents. Downtown cyclists value all aspects more than those who do not cycle downtown.

Representative Survey

Perceived Importance of Bike Lane Visibility, Traffic Flow, and Aesthetics by Age Range



Perceived Importance of Bike Lane Visibility, Traffic Flow, and Aesthetics by Downtown Cycling Frequency



22. Broadly speaking, how important are each of the following as they relate to protected bike lanes in downtown Saskatoon... Base: All respondents, Representative: n=1004.

Support is generally high for installing bike lanes based on most criteria, especially in cases where there is high cyclist traffic volume.

Practical Considerations for Future Bike Lane Installation: Representative Survey



Practical Considerations for Future Bike Lane Installation: Public Input

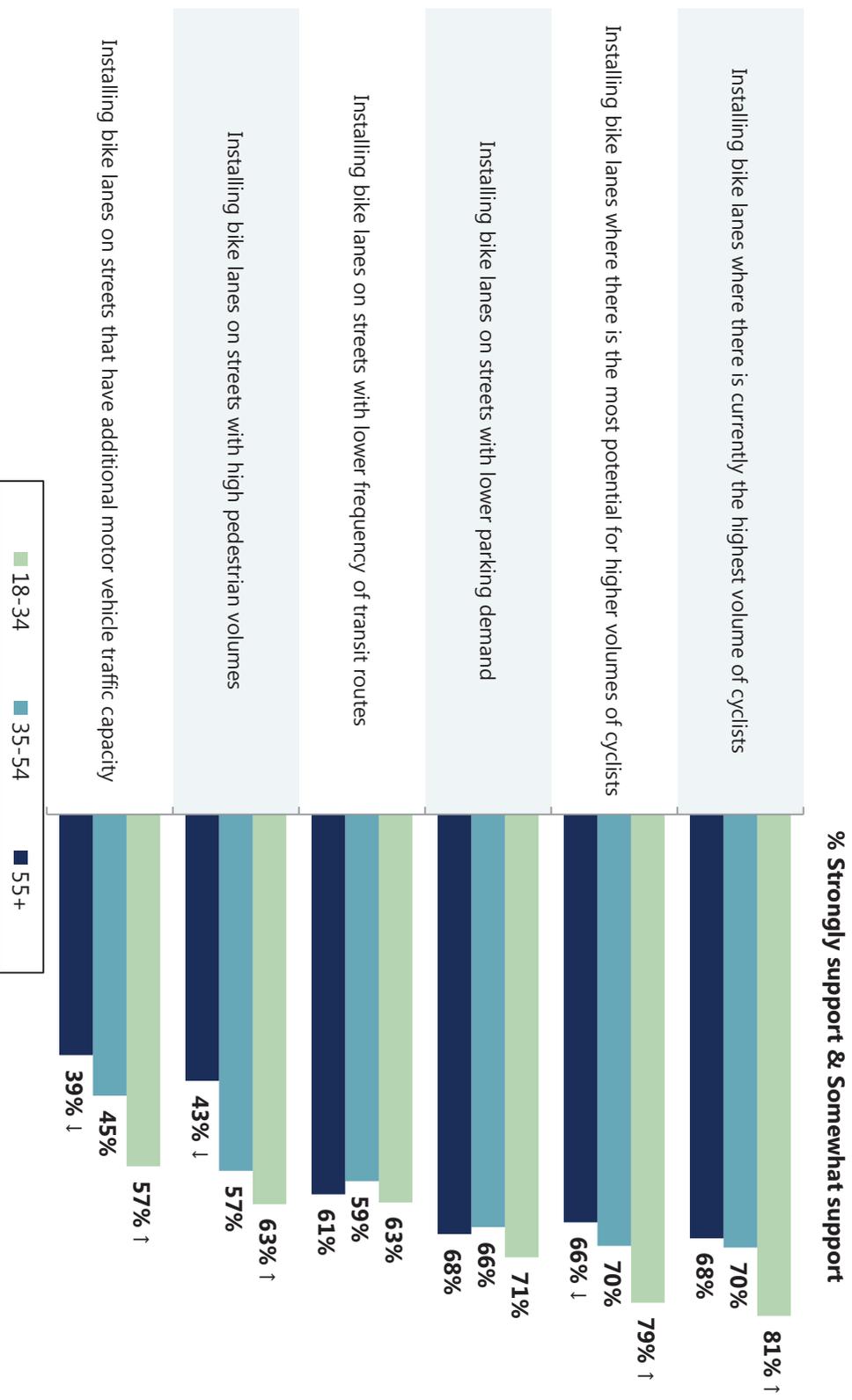


22.1. Broadly speaking, would you support or oppose each of the following as they relate to protected bike lanes in downtown Saskatoon...
Base: All respondents, Representative: n=1004, Public, n=1363.

Younger residents are more supportive of most criteria than their older counterparts.

Representative Survey

Practical Considerations for Future Bike Lane Installation by Age Range

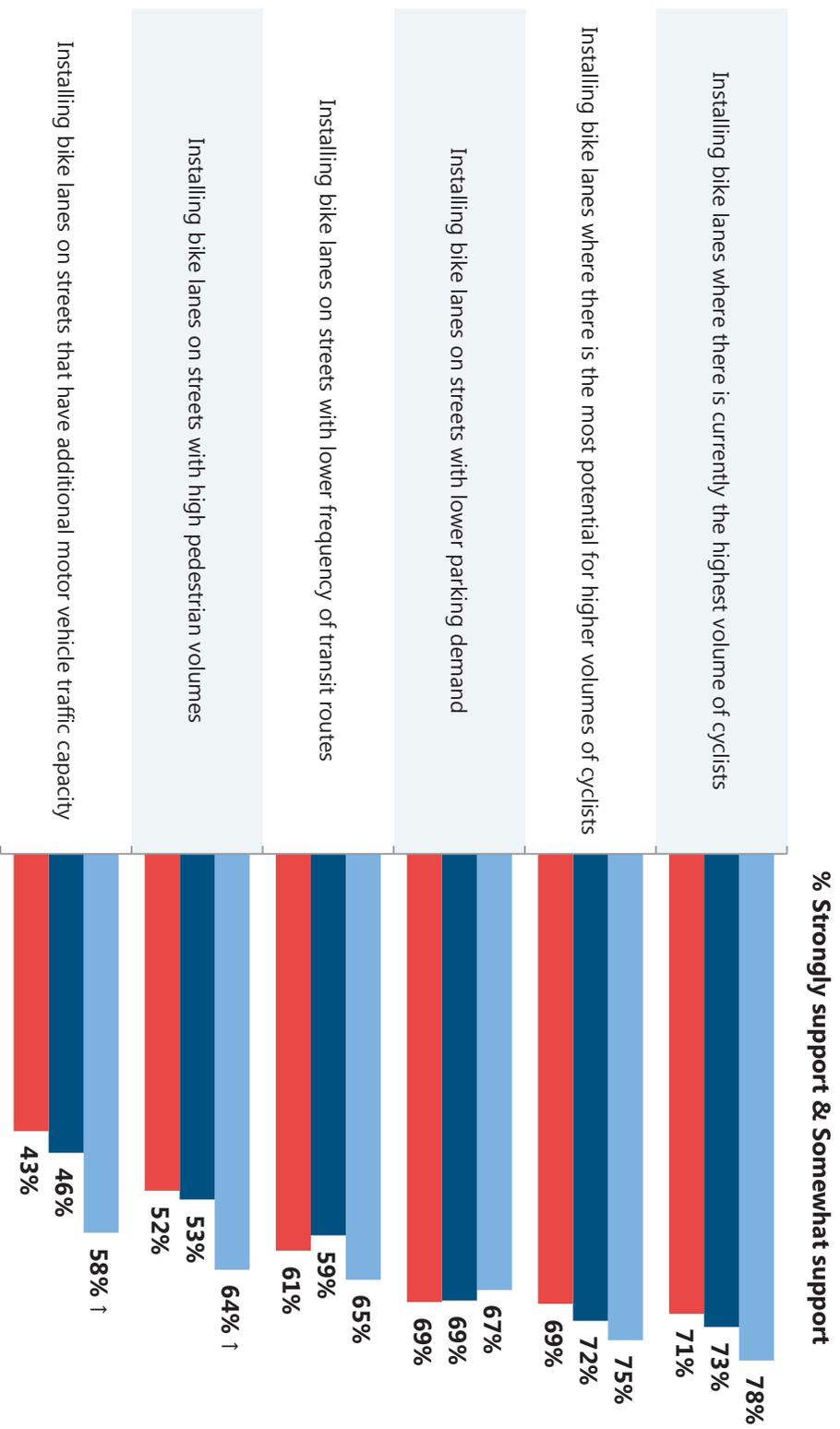


22.1. Broadly speaking, would you support or oppose each of the following as they relate to protected bike lanes in downtown Saskatoon...
 Base: All respondents, Representative: n=1004.

Frequent cyclists are more supportive of select criteria than those who ride infrequently or never.

Representative Survey

Practical Considerations for Future Bike Lane Installation by Overall Cycling Frequency



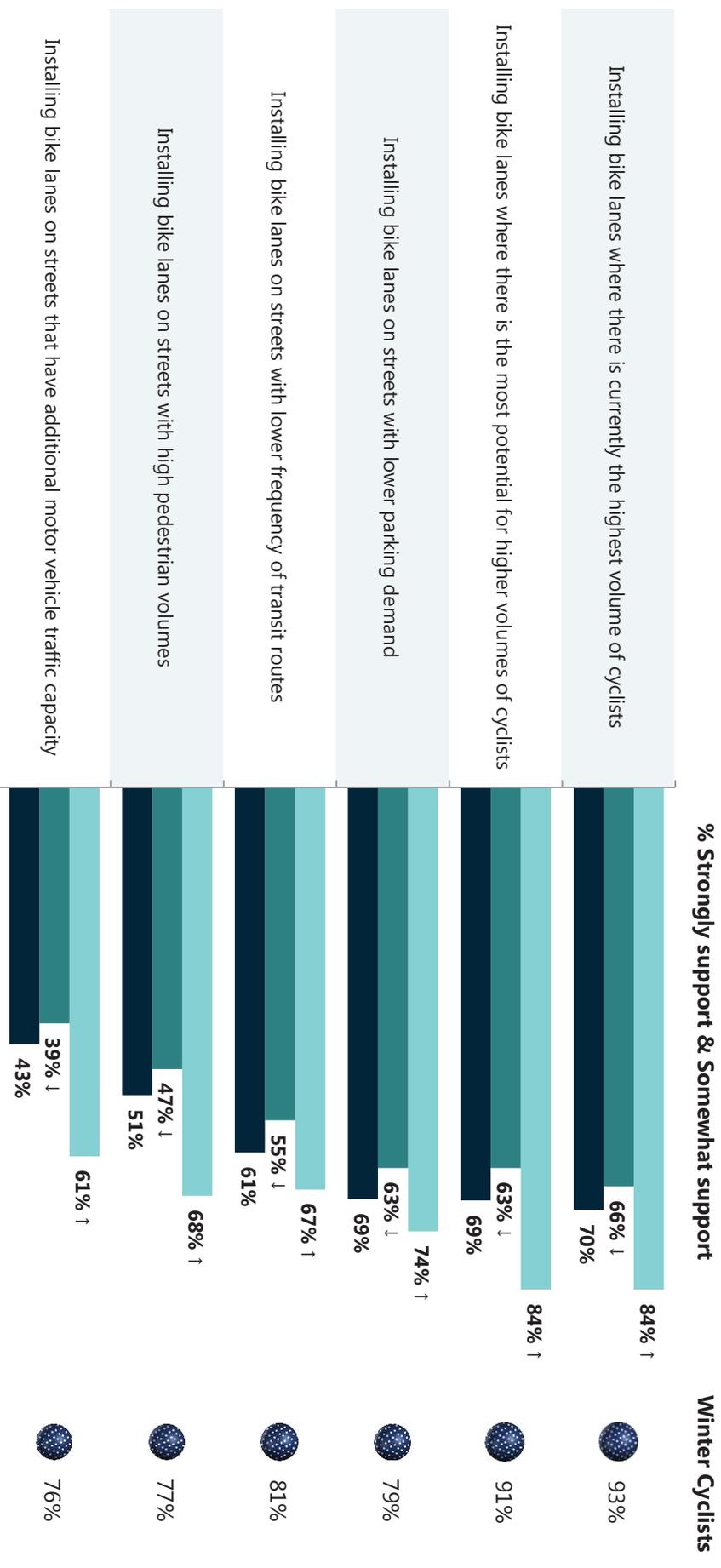
22.1. Broadly speaking, would you support or oppose each of the following as they relate to protected bike lanes in downtown Saskatoon...
 Base: All respondents, Representative: n=1004.

■ More than once a week ■ Once a week or less ■ Never

Downtown cyclists are more supportive of all criteria vs. those who cycle but not downtown. Winter cyclists strongly support all criteria.

Representative Survey

Practical Considerations for Future Bike Lane Installation by Downtown Cycling Frequency



22.1. Broadly speaking, would you support or oppose each of the following as they relate to protected bike lanes in downtown Saskatoon...
 Base: All respondents, Representative: n=1004.

When asked to provide closing thoughts, negative comments are more common than positive. Closing thoughts are generally consistent with initial thoughts regarding protected bike lanes.

Representative Survey

Final Thoughts on Downtown Bike Lanes
(Open-ended question)

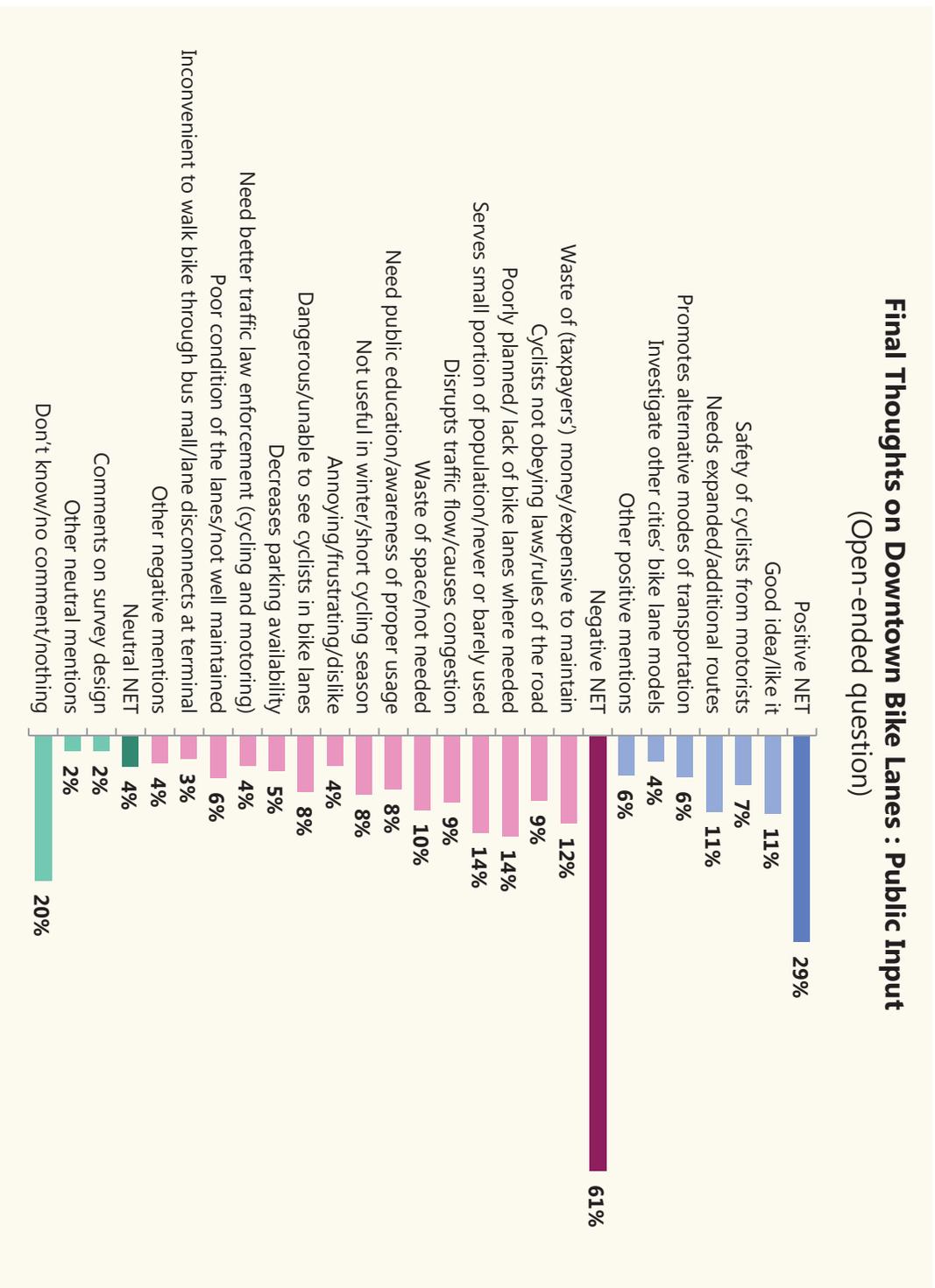


23. Do you have any other comments regarding bike lanes in downtown Saskatoon? Base: All respondents, Representative: n=1004.

When asked to provide closing thoughts, negative comments are more common than positive. Closing thoughts are generally consistent with initial thoughts regarding protected bike lanes.

Public Input

Final Thoughts on Downtown Bike Lanes : Public Input
(Open-ended question)



23. Do you have any other comments regarding bike lanes in downtown Saskatoon? Base: All respondents, Public: n=1363.

Select closing comments offered by residents are outlined below.

Closing Comments

Plan Expansion



“We do need to have a more bike friendly city all around. However, the majority of residents still use vehicles or public transportation. There has to be a good way to make bike lanes happen, maybe seasonally?”

“This is a step in the right direction and I am very pleased that the bike lanes will be expanding. The dedicated multi-direction bike lane sounds like an ideal situation. Now we just need more bike lanes outside of the downtown core.”

Traffic & Parking



“Need more alternative transportation to reduce cars.”

“Lanes should be well marked and a thorough advertising campaign should be implemented.”

“Better traffic management and planning.”

“More provisions for parking in downtown.”

“Maximize lane installation without affecting parking too much or adding parking structures.”

Awareness & Safety



“More education to the public on how and when bike lanes are prioritized.”

“More monitoring to stop cyclists who come out of lane without signaling and or jump onto sidewalk if other cyclists in front are not moving fast enough. These people need tickets same as a motorists who breaks the law.”

“The priority should be safety for cyclist and pedestrians.”

23. Do you have any other comments regarding bike lanes in downtown Saskatoon? Base: All respondents, Representative: n=1004.

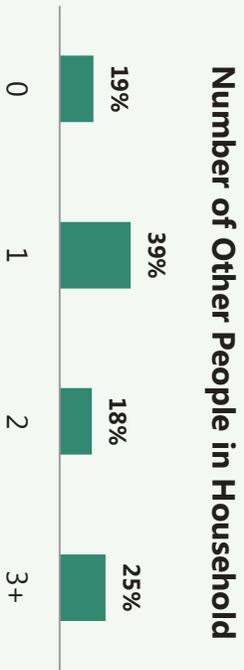


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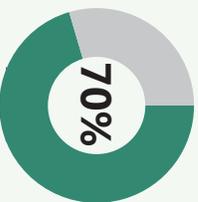
Additional Respondent Details

The majority of other household members in the representative survey have access to a bicycle, and one in five of these cyclists ride downtown.

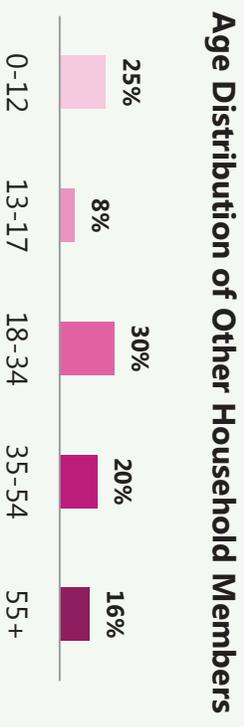
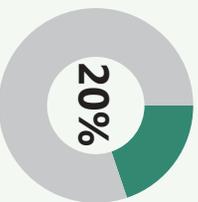
Representative Survey



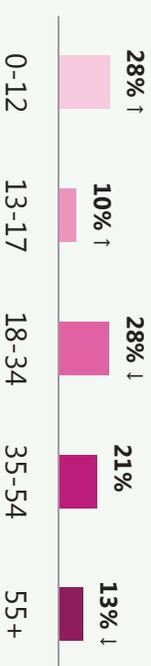
% of Other Household Members that Have Access to a Bike



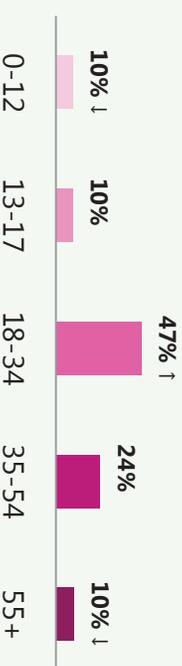
% of Other Household Cyclists that Bike Downtown



% of Other Household Members that Have Access to a Bike by Age



% of Other Household Members that Bike Downtown by Age

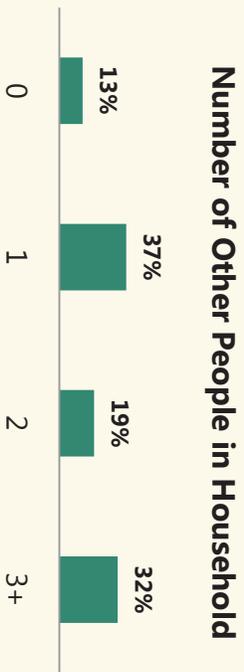


23.1. How many other people live in your home? Base: All respondents, Representative: n=1004.

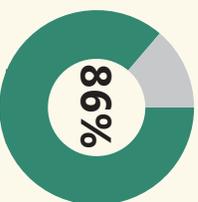
23.2. Please complete the following table regarding the other members of your household. Base: Other household members, n=231 to 1641.

The majority of other household members in the public input survey have access to a bicycle, and more than one third of these cyclists ride downtown.

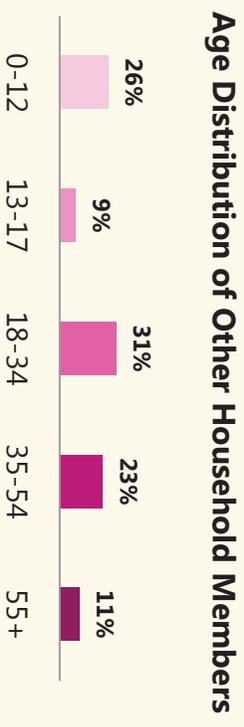
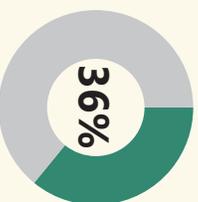
Public Input



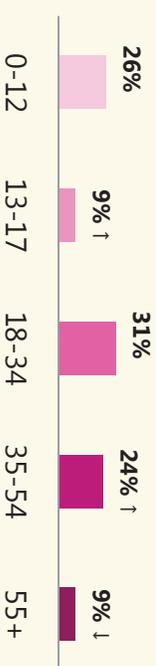
% of Other Household Members that Have Access to a Bike



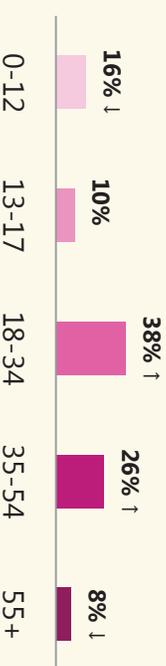
% of Other Household Cyclists that Bike Downtown



% of Other Household Members that Have Access to a Bike by Age



% of Other Household Members that Bike Downtown by Age



23.1. How many other people live in your home? Base: All respondents, Public: n=1363.

23.2. Please complete the following table regarding the other members of your household. Base: Other household members, n=789 to 2542.



City of Saskatoon

2017 Protected Bike Lane Survey

insightrix®



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Study Background & Objectives

In March 2015, Saskatoon City Council approved a recommendation to proceed with a Protected Bike Lane Demonstration Project in the downtown area. The purpose of the demonstration project is to assess the feasibility of installing permanent protected bike lanes in downtown as proposed in the City Centre Plan and by Saskatoon Cycles through the Better Bike Lanes initiative. Expanding and enhancing Saskatoon's bicycle network is also part of the City's Active Transportation Plan. The strategic goal of the project is to create a vibrant and healthy downtown by promoting cycling as a safe and accessible mode of transportation to downtown destinations for businesses, residents, visitors, employers and their employees.

As the Protected Bike Lane Demonstration Project entered its final summer this year, the City was interested in gathering feedback from downtown businesses about their perceptions and experiences with the bike lanes located on 23rd Street and 4th Avenue in the downtown.

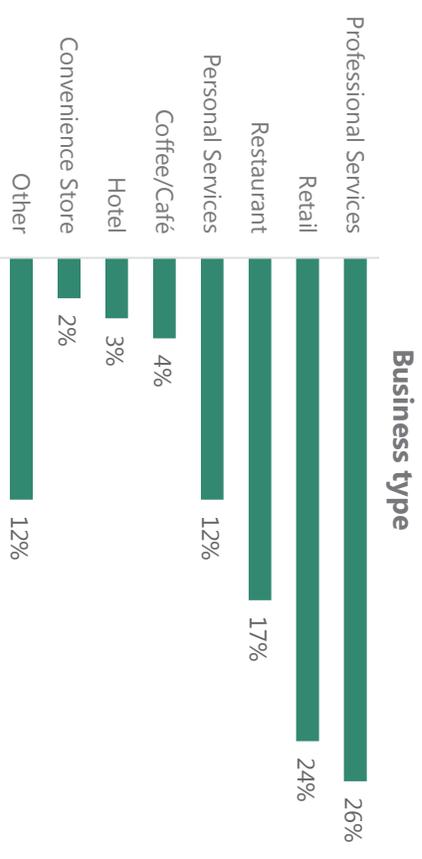
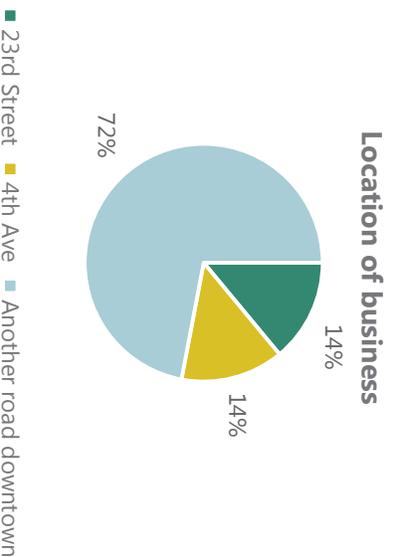
Specific research objectives included:

- ✓ Understand perceived modes customers use to travel downtown
- ✓ Determine if businesses have seen an increase or decrease in customers traveling by bicycle
- ✓ Learn impressions that the protected bike lanes have had on downtown businesses overall and on specific attributes such as foot traffic, parking, customer mood, etc.

To reach these objectives, Insightrix conducted a series of interviews with downtown businesses.

Methodology – Downtown Businesses

- To collect opinions from downtown businesses, intercept interviews were conducted. Specifically, Insightrix Research interviewers entered randomly selected businesses located in the downtown core (between the river, 25th Street and Idylwyld Drive) and approached business decisionmakers to participate in a short interview.
- A brief questionnaire was developed in collaboration with City representatives to address the research objectives outlined earlier. Only for-profit businesses were surveyed with government offices, educational institutes, places of worship, non-profit organizations, etc. being excluded from the study. Further, property owners were not surveyed (but business tenants of such buildings were included). Finally, tenants of Scotia Centre and Midtown Plaza were excluded from the study. Businesses located on both ground floor and above ground were surveyed.
- Interviewers conducted the interviews using iPads to aid with data quality and efficiencies over paper surveying. Interviews were completed between August 31 and September 6, 2017. A total of 100 businesses were surveyed. A profile of those surveyed is outlined below:



Reporting Notes

- Data have been rounded to zero decimal places; therefore, percentages may not add up precisely to 100% on some graphs.
- Open-ended questions have been themed and coded into categories. The percentages from individual codes could total more than 100%, as comments from each respondent could be relevant to more than one code.
- Questions that have multiple response options will result in percentages that could add up to more than 100%.
- In some cases, themes have been organized into 'Net themes' based on overarching commonalities in the content of responses (i.e., positive or negative mentions). The percentages of individual codes will add up to more than the Net total as multiple comments from each respondent are possible within each Net.

Most commonly, businesses report their customers travel downtown by vehicle. One in five businesses say at least some of their customers cycle to their business.

% that report customers travel to their business via the following modes



Drive
67%



Bike
5%



Walk
17%



Get a ride
5%

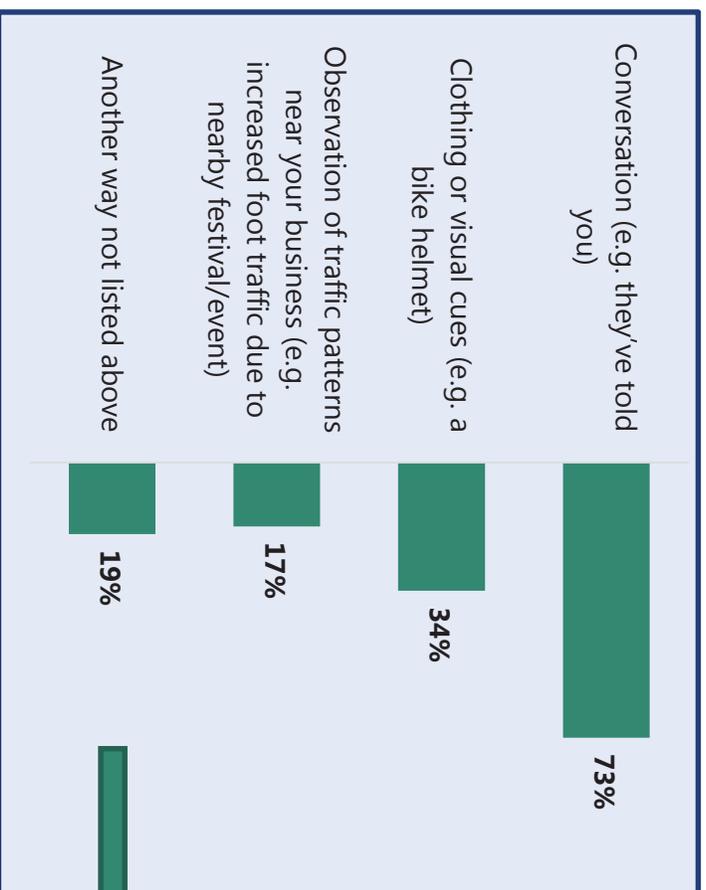


Transit
7%

1. How do you believe the majority of your customers travel to your business? Please enter an estimated percentage in each box (total must add up to 100%). Base: all respondents; n=100.

Most commonly, downtown businesses determine their customers' mode of transportation by speaking with them. Visual cues and observation of traffic patterns near their business are also somewhat commonplace.

Determining mode of transportation of customers



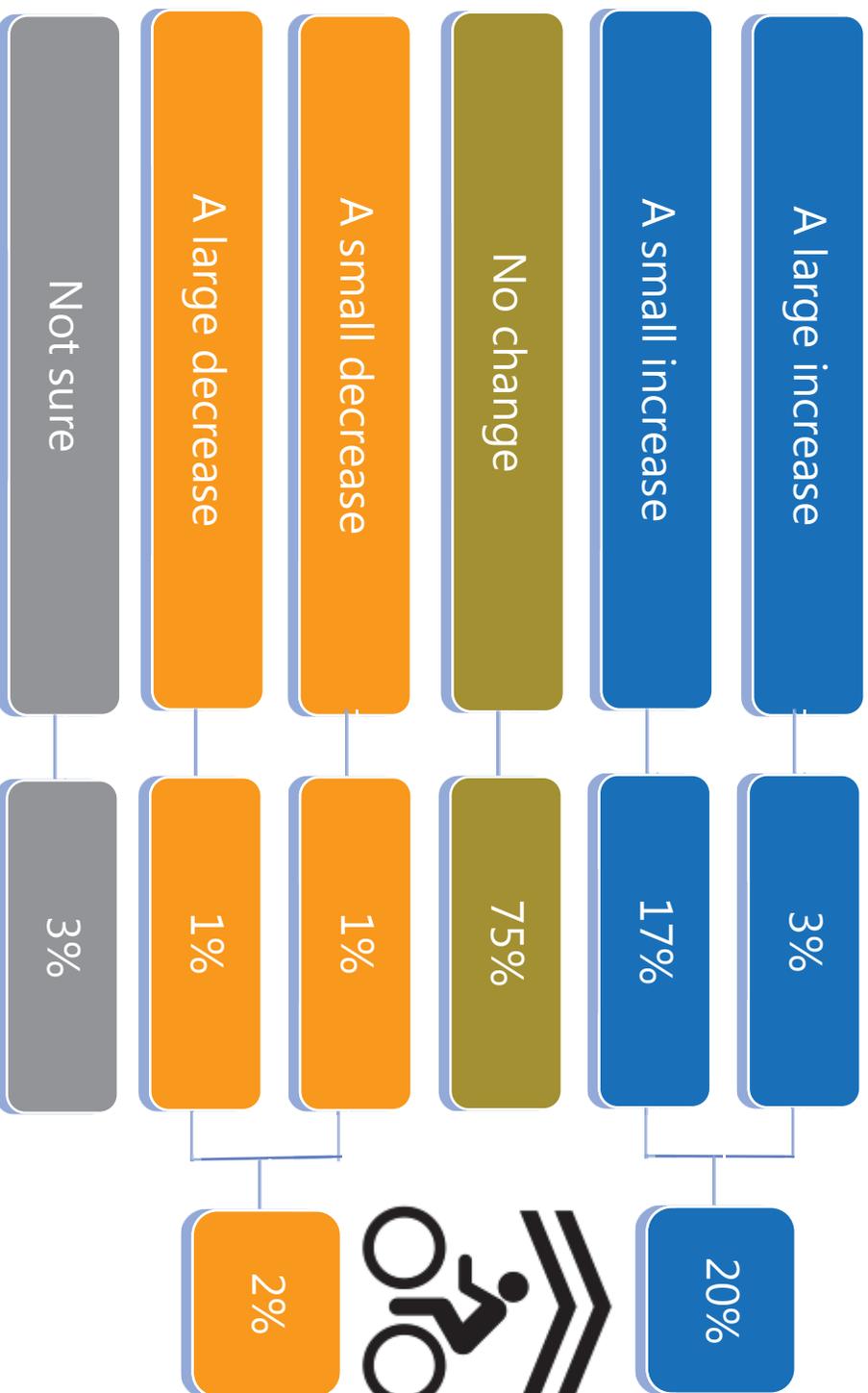
Another way not listed

- Assumption
- Look outside
- Seeing a bike locked up
- Social media
- We know them on a personal level

2. What information do you use in determining someone's mode of transportation to your place of business, select all that apply. Base: all respondents, n=100.

A modest proportion of businesses believe there are more customers travelling to their business by bike after the introduction of protected bike lanes.

Proportion of customers travelling to downtown businesses by bicycle



3. Have you seen an increase in the proportion of customers travelling to your businesses by bicycle since the installation of the protected bike lanes? Base: all respondents, n=100.

When asked what effect protected bike lanes have on business respondent customers, three in ten cite positive sentiments, most commonly that it is easier to get downtown.

Effect on customers after introduction of protected bike lanes

Positive sentiments



Voice of businesses in Saskatoon downtown

"In the business we are in, it's a wellness center, doing more walking and using your feet is more in tune of what we sell here."

I think they are a positive thing. I feel more people that bike downtown shop at downtown businesses. They can shop longer cause they don't have to worry about paying for parking. We may get more customers, more exposure to the business due to people biking by.

"Some of them are happy that it's there, they won't have to look for parking, which sucks."

"A safer environment to transport themselves and more cost effective."

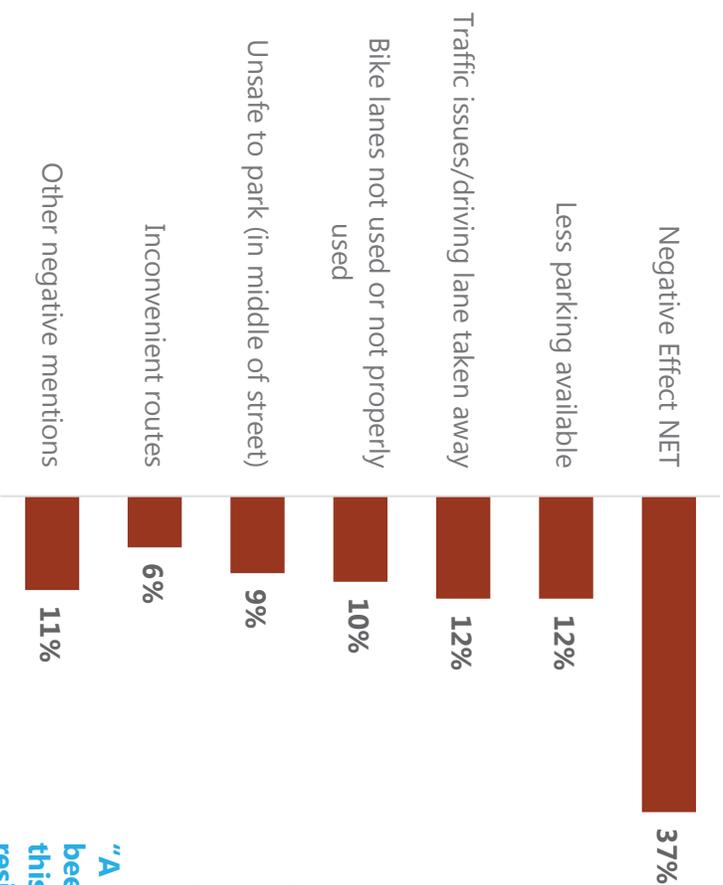
"It's made it easier for them to get down here, they now have an area on the road where they can bike in."

4. Broadly speaking, what effect do you think the protected bike lanes in the downtown have had on your customers? Base: all respondents, n=100.

In contrast, four in ten offer negative sentiments, commonly including issues such as reduced parking availability, traffic issues, improper and infrequent use of the bike lanes.

Effect on customers after introduction of protected bike lanes

Negative sentiments



Voice of businesses in Saskatoon downtown

“The traffic is terrible; it’s congested. Because now in front of our building, everyone is parked in the middle of the street because of the bike lane. It’s not a good street for a bike lane because it’s so narrow. People are confused on how and where to park. They cut back on the parking; busses are not able to get around the corner. I still see people on the sidewalk not using the bike lane. I think the bike lane is a good concept, just makes no sense on how and where they put it.”

“Been a nuisance; takes away a lane that doesn’t need to be taken away. One of our clients had gotten a ticket for turning right on the red light, then they took the sign away. Saskatoon doesn’t need the bike lanes. I drive by and have not seen a bike go across that lane ever. They block off a lane from turning. It’s stupid; some bureaucrats like to waste tax payers’ money.”

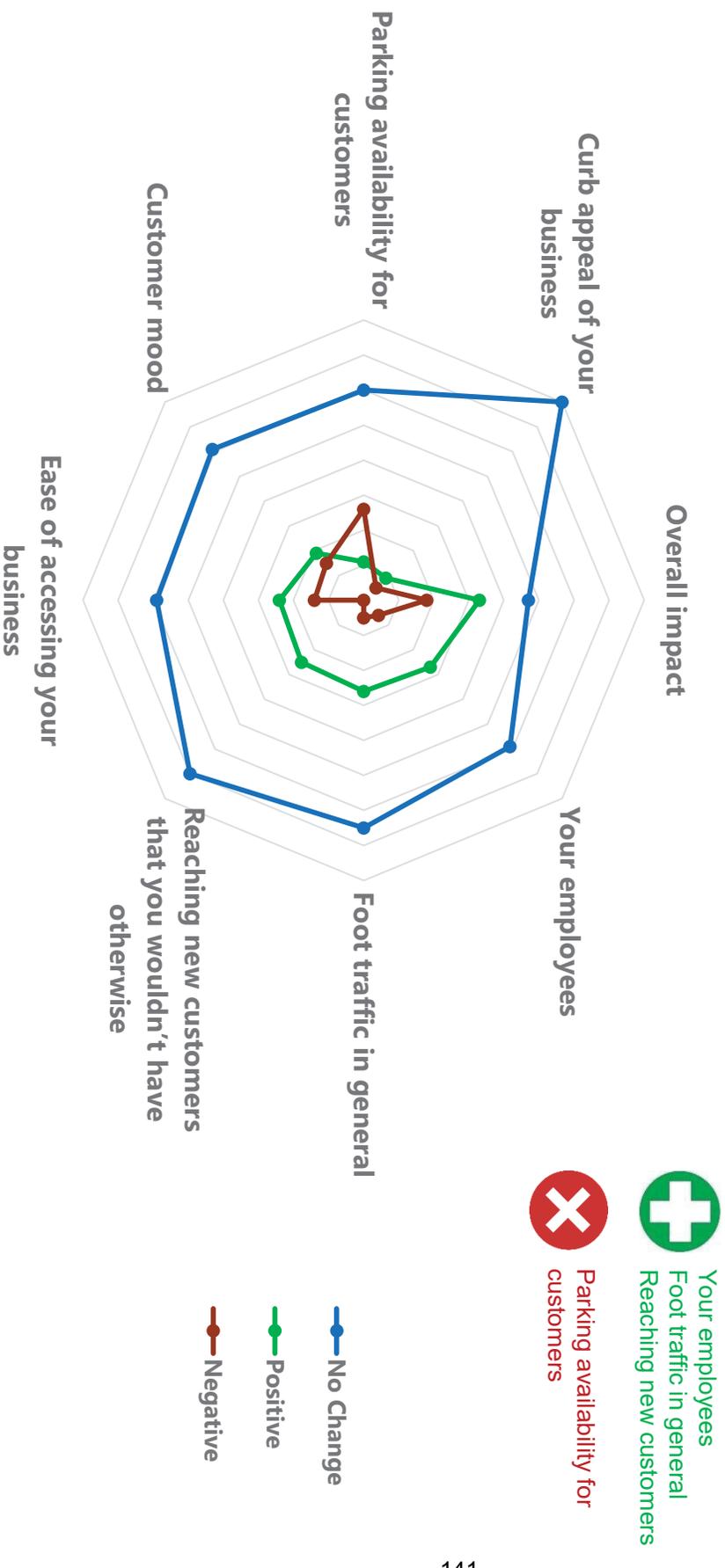
“A bit of an inconvenience; the lane has been taken away. The city needs to know this is not only a business, it’s also residential. It shortened the parking spots available. It’s creating some confusion.”

“Nothing but increase in road rage.”

4. Broadly speaking, what effect do you think the protected bike lanes in the downtown have had on your customers? Base: all respondents, n=100.

A majority of downtown businesses believe protected bike lanes have had no impact on their business. Modest proportions believe the bike lanes have had a positive impact in specific areas noted below, with the exception of parking availability.

Protected bike lanes impact on business



5. How have the protected bike lanes impacted your business in each of the following ways? Base: all respondents, n=100.

A majority of downtown businesses believe that protected bike lanes have had no impact on their business. Modest proportions believe the bike lanes have had a positive impact in specific areas noted below, with the exception of parking availability.

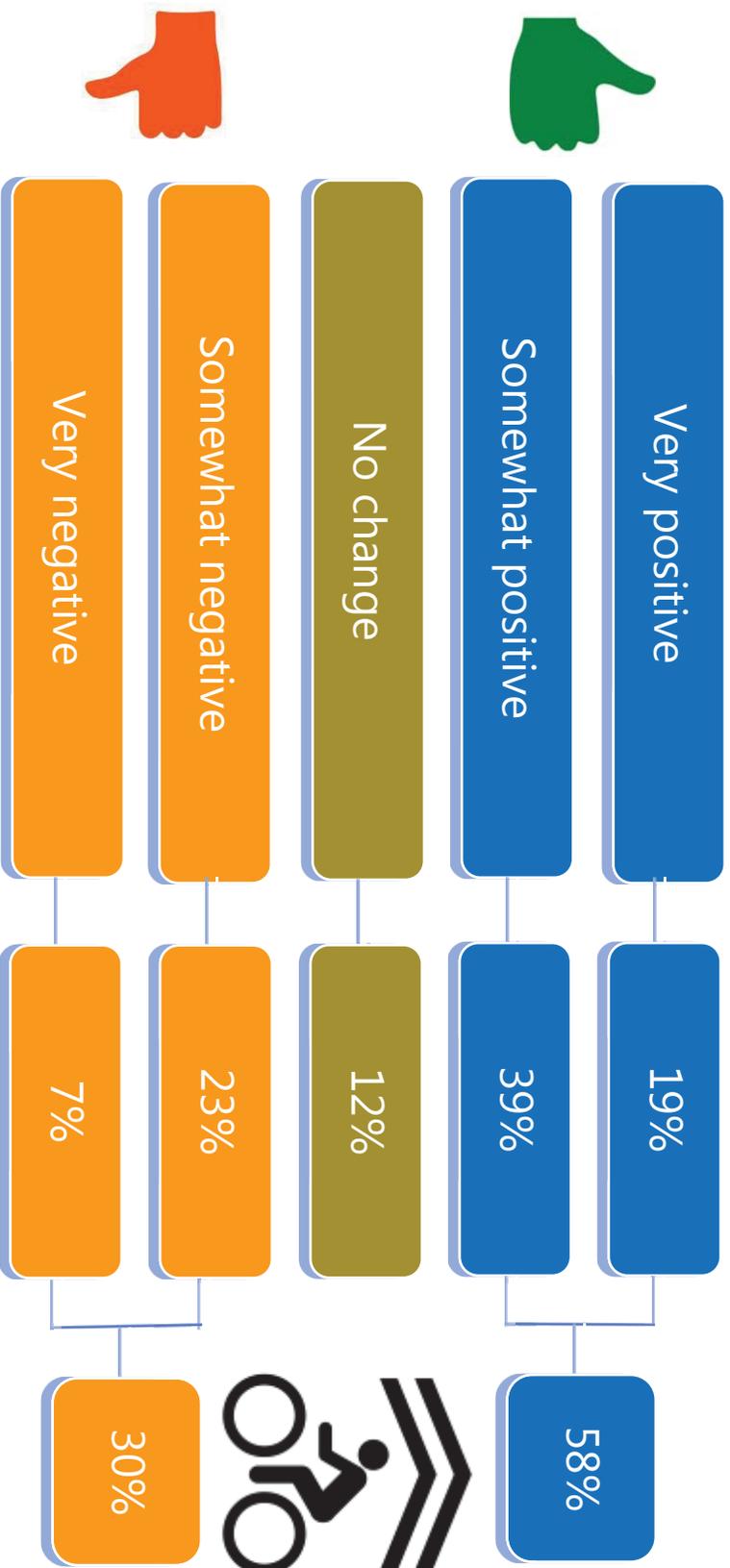
Protected bike lanes impacted business

| | Positive | Negative | No Change | Not Sure |
|---|----------|----------|-----------|----------|
| Overall impact | 33% | 18% | 47% | 2% |
| Your employees | 27% | 6% | 59% | 8% |
| Foot traffic in general | 26% | 5% | 65% | 4% |
| Reaching new customers that you wouldn't have otherwise | 25% | 0% | 70% | 5% |
| Ease of accessing your business | 24% | 14% | 59% | 3% |
| Customer mood | 19% | 15% | 61% | 5% |
| Parking availability for customers | 11% | 26% | 60% | 3% |
| Curb appeal of your business | 9% | 5% | 80% | 6% |

5. How have the protected bike lanes impacted your business in each of the following ways? Base: all respondents, n=100.

Six in ten believe the protected bike lanes have had a positive impact on downtown, whereas three in ten feel that it has had a negative impact.

Impact of protected bike lanes on downtown as a whole



6. And overall, would you say the protected bike lanes have had a positive or negative impact on downtown as a whole? Base: all respondents, n=100.

Final business respondent comments are mixed with some offering supportive sentiments, with others citing frustrations in need of improvement.

Final comments

As a downtown business owner, I am in favour of creating incentives for people to use alternative means of transportation. Also, if we want to retain and attract young people who work and play here, we need to be current with the times which means promoting healthy lifestyle choices.

Due to seasons, we have over 6 months of winter, so the bike lanes cannot be used for those months. If the bicycle lanes are taking over parking spots, it will be harder to find parking spots downtown.

I think it's a great idea. It should be something we implement. We have a lot of environmentalists here that appreciate cycling and long boarding. I think it's a good change, especially with our summers here.

Bikers and vehicle drivers still need to be aware of each other. I think bikes have to come off the sidewalk. Overall, I think protected bike lanes are a good idea. We just need more education. Anyone using these pathways needs more education.

I agree with the premise of the bike lanes and what it means to encourage people to utilize other means of transportation. However, due to the width of the lanes between 23rd and 22nd, specifically more towards the rush hour times, creates a little more anger in drivers. People get angry and make mistakes and lose focus. It becomes negative and frustrating.

7. These are all of my questions. Do you have any final comments? Base: all respondents, n=100.

Key Findings

Downtown Business Findings:

- A modest proportion of businesses believe there are more customers travelling to their business by bicycle after the introduction of protected bike lanes.
- Modest proportions of businesses believe the bike lanes have had a positive impact with their employees, increasing foot traffic, reaching new customers and improving access to their business. However, some feel that parking availability has been compromised.
- Broadly speaking, six in ten believe the protected bike lanes have had a positive impact on downtown, whereas three in ten feel that it has had a negative impact.

Bicycle counts are done using specialized bike counters. Two different types of counters have been installed in the protected bike lanes along 23rd Street and 4th Avenue to measure cyclist volumes. Both of these counters use the same technology as the counters used to monitor motor vehicle volumes, but are more sensitive to bicycles. As with motor vehicle counts, counters do not distinguish between unique users. In other words, any time a bicycle crosses the counter, it is recorded.

Counter Types

Easy ZELT Continuous Bicycle Counters: The system uses induction loops that adhere to the pavement surface and last 4-8 months. These counters analyze the electromagnetic signature of each bicycle. This is the same technology as the City's motorized vehicle traffic counters and in-road vehicle detections at signals, but more sensitive to bicycles. The system is perfect for obtaining trends over time and allows for the comparison of bike trips over consecutive months, seasons or years. These counters collect continuously, in 15-minute increments, 24-hours a day.

There are four continuous counters installed in the protected bike lanes – two on 23rd Street between 3rd and 4th Streets and two on 4th Avenue between 22nd and 23rd Streets. The induction loops are installed in the spring of the year when pavement is dry and when temperature is above freezing. The loops are replaced so that the counters can count into the winter season.

Pneumatic Tube Short-Term Bicycle Counters: The counters use a set of two rubber tubes that are placed perpendicular to traffic flow along the pavement. This is the same technology as the City's short-duration motorized vehicle traffic counters. This system is able to distinguish bicycles from motorized vehicles in mixed traffic, extract directional data, and accurately count the number of cyclists in a group. The City has two of these counters that rotate to different locations from spring to fall. Typically, the counter is set up at a location for about a week and collect continuously, in 15-minute increments, 24-hours a day. These counters are moved along the 4th Avenue and 23rd Street bike lanes to count on different city blocks through the course of the pilot project.

The volumes recorded by the counters are daily volumes (actuals). The City then uses the methodology from the Traffic Monitoring Guide (Federal Highway Administration, 2016) to calculate annual average daily bicycle traffic (AADBT).

Using this methodology helps us understand, on average, how many people use the bike lanes on a daily basis. It is important to determine the annual averages because traffic volumes vary by hour of the day (rush hours vs late at night), day of week (weekend versus weekday), month of year, and season (school versus summer vacation). This is especially the case for trips made by pedestrians and cyclists. The day-to-day variation of people walking or biking is much higher than for motor vehicles as adverse weather, or even a forecast of adverse weather, can alter people's choice to walk or bike.

Annual average daily bicycle traffic (AADBT) was calculated for data collected in 2014 and 2016. The 2017 AADBT will be calculated once data collection is complete for the year. For 2017, the Average Daily Bike Traffic (ADBT) is determined as the average of daily totals during the period in which data was collected.

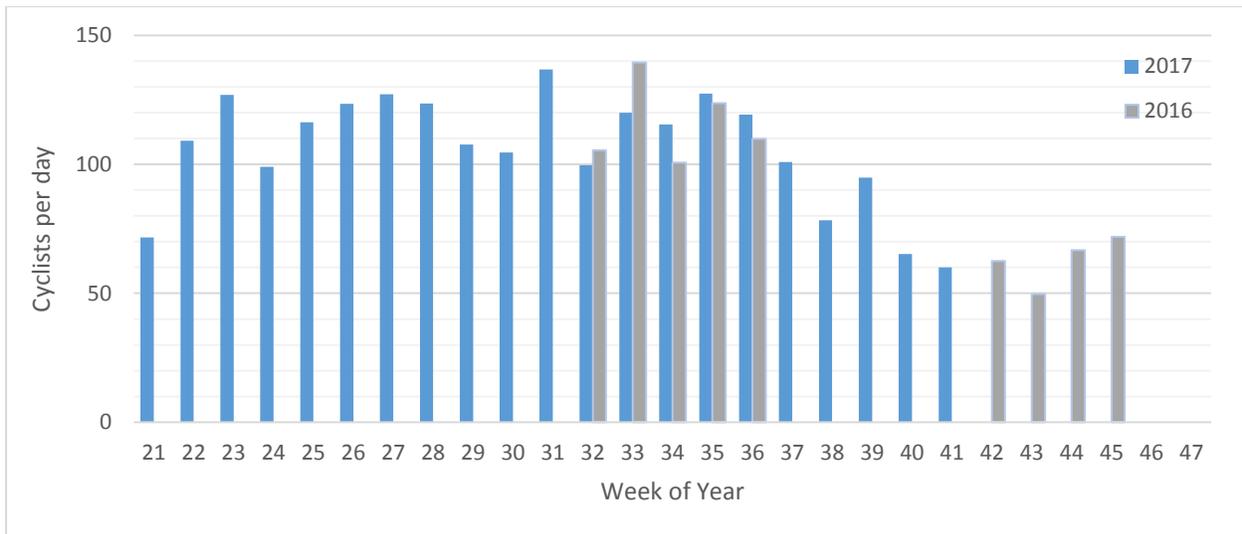
Average Cyclists per Day (in both directions)

| | AADB (factored) | | ADB Average (unfactored) |
|-------------------------|--------------------|------|--------------------------------|
| | 2014 | 2016 | 2017 |
| 23rd Street | | | |
| Wall St to Pacific Ave | | 140 | |
| Ontario Ave to 1st Ave | 60 | 120 | 150 |
| 1st Ave to 2nd Ave | | 80 | |
| * 3rd St to 4th St | 30 | 90 | 110 |
| 4th Ave to 5th Ave | | 70 | |
| 5th Ave to Spadina Cres | | 70 | 80 |
| 4th Avenue | | | |
| 20th St to 21st St | 50 | 190 | 310 |
| 21st St to 22nd St | 40 | 160 | |
| * 22nd to 23rd St | | 170 | 230 |
| 23rd St to 24th St | | 110 | 220 |

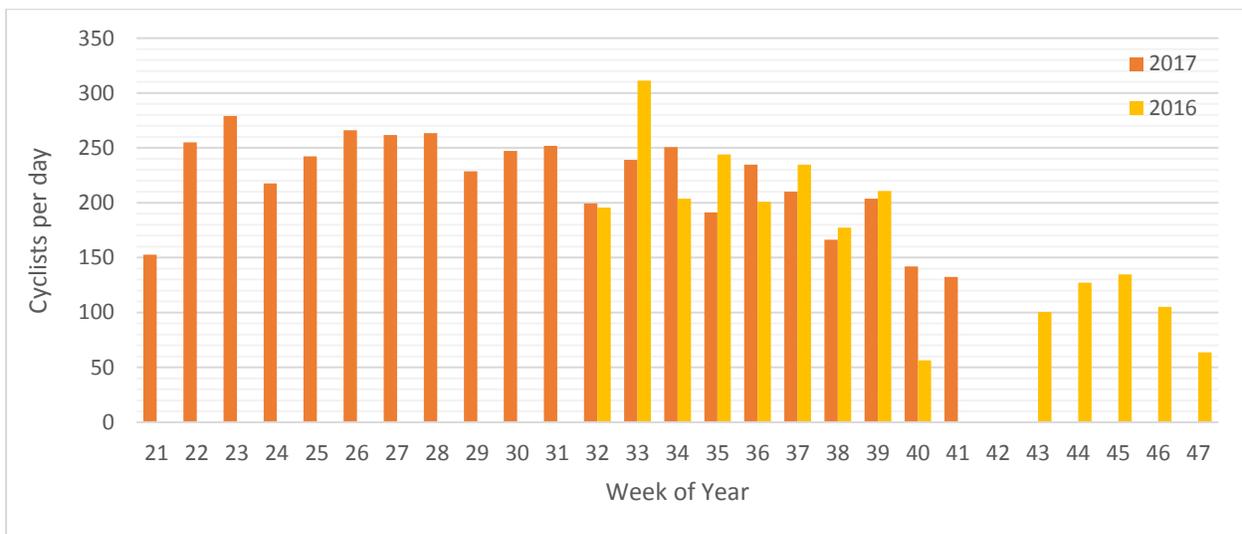
*Continuous Bicycle Counters

Average Number of Cyclist per Day (by Day of the Week)

23rd Street: 3rd Avenue to 4th Avenue



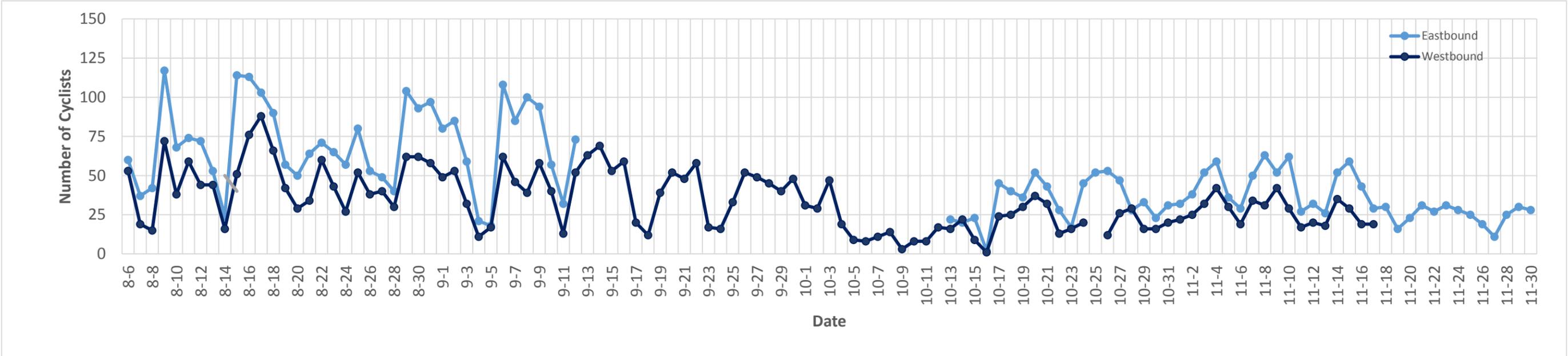
4th Avenue: 22nd Street to 23rd Street



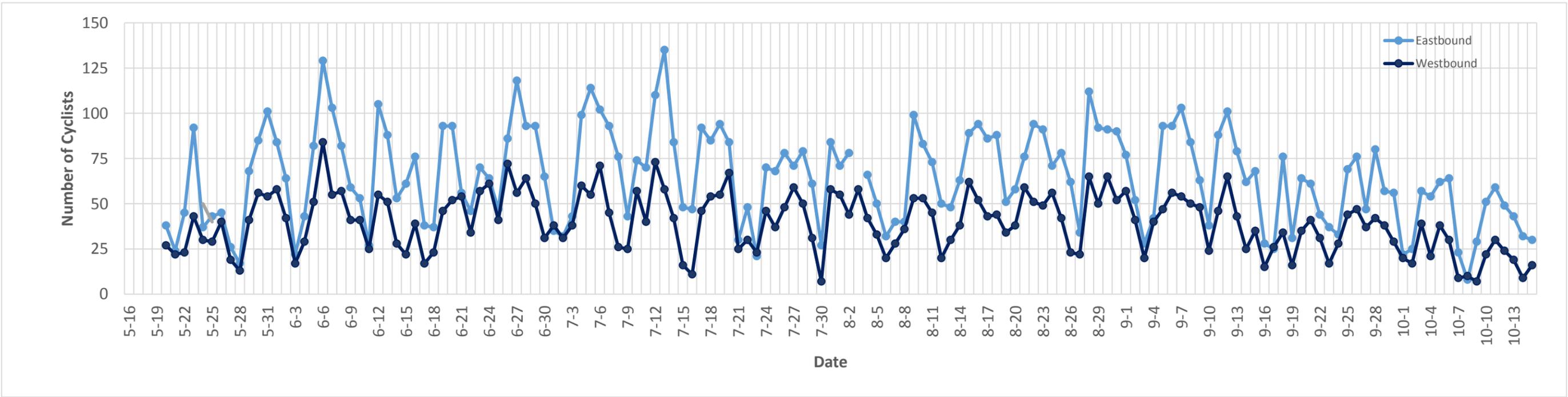
Number of Cyclists per Day by Direction of Travel (Raw Data)

23rd Street: 3rd Avenue to 4th Avenue

2016

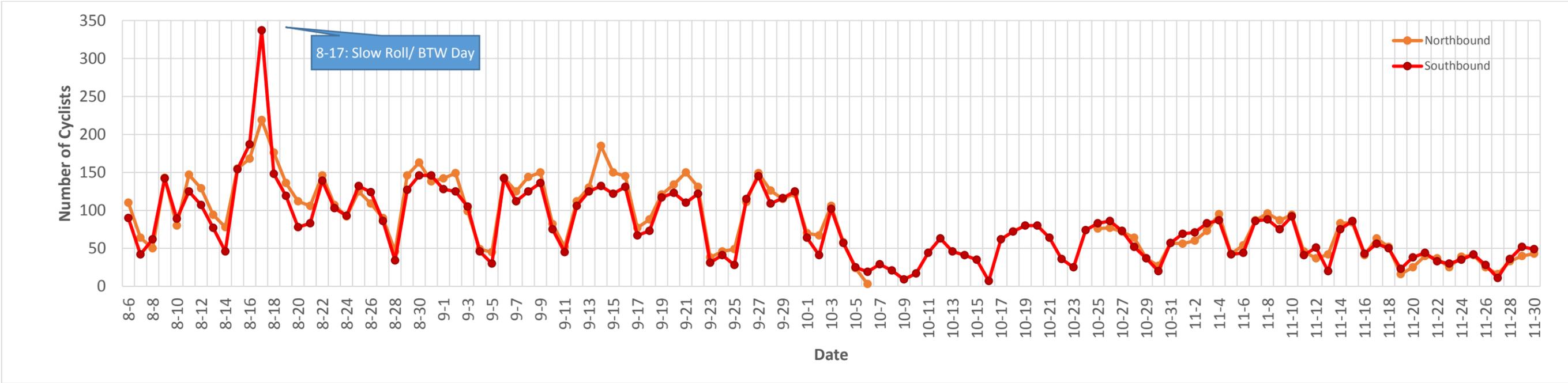


2017

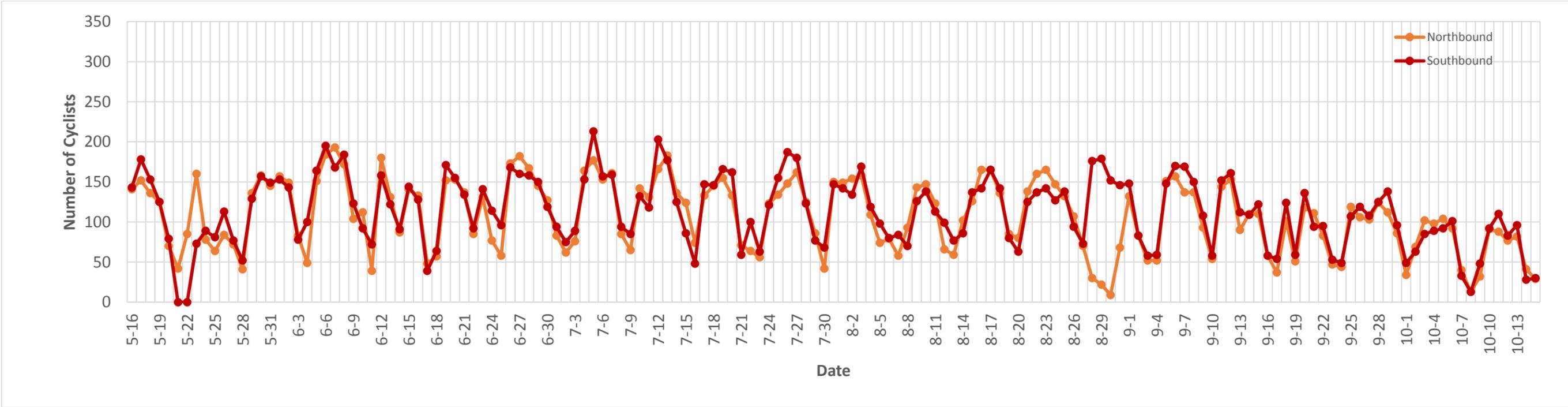


4th Avenue: 22nd Street to 23rd Street

2016



2017



Motorized Vehicle Traffic Analysis

Traffic analysis considers several metrics to determine whether traffic operations are adequate.

Key Terminology

- **Level of service (LOS)** ratio is a term used to qualitatively describe the operating conditions of a roadway based on factors such as speed, travel time, manoeuvrability, delay, and safety. The LOS of a facility is designated with a letter A to F, with A representing the best operating conditions and F the worst.
- **Volume to capacity (V/C)** ratio compares the number of vehicles on the road to the available capacity of the roadway. It is an indicator for the amount of congestion. Any V/C ratio greater than or equal to 1 indicates that the approach is operating at or above capacity.
- **Delay** is the average time per vehicle to stop or slow when approaching each intersection. This reported in seconds.
- **The 95th Percentile Queue**, in meters, is the maximum back of queue and indicates that 95 percent of the time, queues will be less than this length.
- **Average travel time** is the average time it takes a driver to travel the length of the corridor.

Traffic Analysis

Traffic analysis of the protected bike lanes for the before and after installation conditions is discussed below.

Table 1 shows that the overall intersection Level of Service (LOS) remained at LOS B for both 4th Avenue and 23rd Street in the p.m. peak hour. LOS B indicates that traffic is flowing well with little delay.

The table below also indicates that the average travel time for motorized vehicles traveling along 4th Avenue and 23rd Street has increased by approximately 20 seconds during the p.m. peak hour.

Table 1: Motorized Traffic Summary (p.m. peak hour)

| Street | 2014 | | 2017 | | Difference | |
|---|------------------|---------|-------------------|---------|------------|---------|
| | Pre-Installation | | Post-Installation | | | |
| 4th Avenue (19th Street to 24th Street) | | | | | | |
| | NB | SB | NB | SB | NB | SB |
| Intersection Level of Service (LOS) | B or better | | B or better | | | |
| Average Travel Time | 154.2 s | 156.5 s | 173.2 s | 178.1 s | + 19 s | +21.6 s |
| 23rd Street (Idylwyld Drive to Spadina Crescent) | | | | | | |
| | EB | WB | EB | WB | EB | WB |
| Intersection Level of Service (LOS) | B or better | | B or better | | | |
| Average Travel Time | 130.4 s | 127.7 s | 149.4 s | 151.5 s | + 19 s | +23.8 s |

Note:

- The lane configuration on 4th Avenue changed from two travel lanes in each direction to one travel lane in each direction to accommodate the installation of the protected bike lanes.
- Northbound and southbound traffic volumes on 4th Avenue decreased slightly between 21st and 23rd Streets compared to the volumes recorded prior to the installation of the protected bike lanes. However, the volumes at 19th and 25th Streets, did not change, indicating that motorists may be avoiding these segments.

Tables 2 and 3 provide a listing of the 2017 traffic operations (post-installation) for the signalized intersections along 4th Avenue and 23rd Street corridors and indicate the operating conditions for each traffic movement at each intersection in the p.m. peak hour.

Table 2: 2017 Traffic Conditions on 4th Avenue with Protected Bike Lanes (p.m. peak hour)

| Intersection with 23 rd Street | Movement | | Post-Installation Operations | | | |
|--|-----------------------------|-----------------|------------------------------|-----------------------|-------------|--------------|
| | | | v/c ratio | Delay (s) | LOS | Queue (m) |
| 20 th Street | EB | Left/Thru/Right | 0.62 | 21.8 | C | 40.6 |
| | WB | Left/Thru | 0.32 | 18.7 | B | 30.2 |
| | | Right | 0.37 | 5.1 | A | 12.5 |
| | NB | Left | 0.64 | 32.3 | C | 35.0† |
| | | Thru/Right | 0.33 | 10.7 | B | 32.7 |
| | | | 0.21 | 2.9 | A | 7 |
| | SB | Left | 0.25 | 10.7 | B | 8.4* |
| | | Thru | 0.86 | 22.1 | C | 125.1†* |
| | | Right | 0.03 | 2 | A | 0 |
| | Intersection Summary | | | 0.86 (max) | 17.5 | B |
| 21 st Street | EB | Left/Thru/Right | 0.32 | 21.5 | C | 22.8 |
| | WB | Left/Thru/Right | 0.66 | 32.8 | C | 52.6† |
| | NB | Left | 0.17 | 8.8 | A | 6.2* |
| | | Thru/Right | 0.5 | 10.3 | B | 49.4 |
| | SB | Left | 0.19 | 8.4 | A | 8.8* |
| | | Thru/Right | 0.82 | 19.4 | B | 132.4† |
| | Intersection Summary | | | 0.82 (max) | 18.2 | B |
| 22 nd Street | EB | Left | 0.56 | 30.3 | C | 33.4† |
| | | Thru | 0.28 | 17.9 | B | 26.9 |
| | | Right | 0.29 | 18.9 | B | 20.8 |
| | WB | Left | 0.08 | 15.9 | B | 6.7 |
| | | Thru/Right | 0.55 | 23.4 | C | 48.0 |
| | NB | Left | 0.15 | 6.0 | A | 4.2* |
| | | Thru/Right | 0.7 | 10.5 | B | 33.5 |
| | SB | Left | 0.46 | 12.3 | B | 10.4 |
| | | Thru/Right | 0.49 | 8.7 | A | 24.7 |
| | Intersection Summary | | | 0.70 (max) | 14.7 | B |
| 23 rd Street | EB | Left/Thru/Right | 0.17 | 14.9 | B | 10.7 |
| | WB | Left/Thru/Right | 0.17 | 14.8 | B | 11.7 |
| | NB | Left | 0.12 | 10.3 | B | 4.3* |
| | | Thru/Right | 0.56 | 14.6 | B | 56.2 |
| | SB | Left | 0.12 | 10.6 | B | 7.1 |
| | | Thru/Right | 0.48 | 14.3 | B | 50.2 |
| | Intersection Summary | | | 0.56 (max) | 14.3 | B |

* Note: Volume for 95th percentile queue is metered by upstream signal

† Note: 95th percentile volume exceeds capacity, queue may be longer

Table 3: 2017 Traffic Conditions on 23rd Street with Protected Bike Lanes (p.m. peak hour)

| Intersection with 23 rd Street | Movement | | Post-Installation Operations | | | |
|--|-----------------------------|-----------------------|------------------------------|--------------|----------|-------------------|
| | | | v/c ratio | Delay (s) | LOS | Queue (m) |
| Pacific Avenue | EB | Left/Thru/Right | 0.41 | 13.5 | B | 20.9 |
| | WB | Left/Thru/Right | 0.46 | 14.8 | B | 21.8 |
| | NB | Left/Thru/Right | 0.42 | 7.8 | A | 23.8 |
| | SB | Left/Thru/Right | 0.18 | 5.0 | A | 10.3 |
| | Intersection Summary | | 0.46 (max) | 11.5 | B | |
| 1 st Avenue | EB | Left/Thru/Right | 0.6 | 13.8 | B | 29.4 |
| | WB | Left/Thru/Right | 0.34 | 12.7 | B | 19.0 |
| | NB | Left | 0.23 | 12.8 | B | 9.4 |
| | | Thru/Right | 0.48 | 11.3 | B | 30.7 |
| | SB | Left | 0.05 | 9.5 | A | 3.4 |
| | | Thru/Right | 0.56 | 12.6 | B | 37.6 |
| | Intersection Summary | | 0.60 (max) | 12.5 | B | |
| 2nd Avenue | EB | Left | 0.68 | 20.5 | C | 50.0 [†] |
| | | Thru/Right | 0.3 | 4.50 | A | 7.6* |
| | WB | Left/Thru/Right | 0.09 | 10.4 | B | 6.2* |
| | NB | Left | 0.14 | 11.8 | B | 7.6 |
| | | Thru/Right | 0.63 | 18 | B | 52.5 |
| | SB | Left | 0.03 | 10.5 | B | 1.8 |
| | | Through | 0.6 | 17.5 | B | 49.3 |
| | | Right | 0.29 | 3.9 | A | 9.0 |
| Intersection Summary | | 0.68 (max) | 15.0 | B | | |
| 3rd Avenue | EB | Left/Thru/Right | 0.10 | 13.2 | B | 4.4* |
| | WB | Left/Thru | 0.16 | 12.1 | B | 9.6 |
| | | Right | 0.21 | 4.9 | A | 6.8 |
| | NB | Left | 0.03 | 9.5 | A | 1.7 |
| | | Thru/Right | 0.37 | 10.1 | B | 21.7 |
| | SB | Left | 0.17 | 11.1 | B | 8.4 |
| | | Thru/Right | 0.41 | 11.4 | B | 25.6 |
| Intersection Summary | | 0.41 (max) | 10.5 | B | | |
| 4th Avenue | EB | Left/Thru | 0.17 | 14.9 | B | 10.7 |
| | | Right | | | | |
| | WB | Left/Thru/Right | 0.17 | 14.8 | B | 11.7 |
| | NB | Left | 0.12 | 10.3 | B | 4.3* |
| | | Thru/Right | 0.56 | 14.6 | B | 56.2 |
| | SB | Left | 0.12 | 10.6 | B | 7.1 |
| Thru/Right | | 0.48 | 14.3 | B | 50.2 | |
| Intersection Summary | | 0.56 (max) | 14.3 | B | | |

* Note: Volume for 95th percentile queue is metered by upstream signal

† Note: 95th percentile volume exceeds capacity, queue may be longer

Appendix D Protected Bike Lane Best Practices

A Protected Bike Lane is a dedicated, marked lane for bicyclists that is physically separated from vehicles and pedestrian traffic.

The following documents were reviewed:

- American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities (2012);
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide (2012);
- Transportation Association of Canada (TAC) Bikeway Traffic Control Guidelines (2012);
- Federal Highway Administration (FHWA) Separated Bike Lane Planning and Design Guide (2015); and,
- Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (2017).

Direction and Width

One-Way Protected Bike Lane



Winnipeg (Winnipeg.ca)

A one-way protected bike lane on each side of a two-way street creates a predictable design. A potential challenge with this design is it takes up more roadway space. One-way protected bike lanes should have a minimum width of 1.8 metres. A width of 2.1 metres is preferred as they allow for passing or side-by-side riding. Narrow lanes may require special maintenance equipment.

Bicycle lane word, symbol, and/or arrow markings shall be placed at the beginning of a protected bike lane and at periodic intervals along the facility.

Two-Way Protected Bike Lane



Calgary (ibiketo.ca)

A two-way protected bike lane on a two-way street may be desirable to minimize conflicts on high frequency transit corridors or along corridors with a higher number of intersections or driveways on one side of the street. This design does, however, create some challenges for road user expectancy at intersections and driveways, and limits intersection design options. The width of a two-way protected bike lane should be no less than 3.4 metres.

Appendix D Protected Bike Lane Best Practices

Forms of Protection

Delineator Posts



Saskatoon (cbc.ca)

Flexible delineator posts are low in cost, visible, and easy to install. However, their durability and aesthetic quality can present challenges. Delineator posts are placed in a painted buffer with a preferred width of 0.3 to 0.9 metres. A buffer width of 0.9 metres allows for passenger loading and to prevent door collisions. Solid white lane line markings shall be used for the buffer. Diagonal crosshatch markings may be placed in the neutral area for special emphasis. Delineator posts are typically spaced 3 to 12 metres apart.

Bollards



Long Beach (bikelongbeach.org)

Bollards provide a rigid barrier solution that provides a strong vertical element to the painted buffer. Bollards are placed in a painted buffer with a preferred width of 0.5 to 1.0 metres. Bollards are typically spaced 3 to 12 metres apart.

Concrete Barriers



Vancouver (bikeportland.org)

Concrete barriers are less expensive than many of the other forms of protection and require little maintenance. However, this barrier type may be less attractive and may require additional drainage and service vehicle solutions. Concrete barriers are typically placed in a painted buffer that is 1.0 metre wide.

Raised Median



Edmonton (globalnews.ca)

Concrete curbs can either be cast in place or precast. This form of protection is more expensive to construct and install but provides a continuous raised buffer that is attractive with little long-term maintenance required. A minimum width of 0.4 metres is preferred for raised medians. The typical curb height is 150 millimetres.

Appendix D Protected Bike Lane Best Practices

Raised Lane



Halifax (cyclehalifax.ca)

Protected bike lanes may also be designed as raised facilities, either at sidewalk or at an intermediate grade. A minimum width of 0.6 metres is preferred. The typical curb height is 75 to 150 millimetres.

Planters



Victoria (victoria.ca)

Planters provide an aesthetic element, a suitable form of protection, and is quick to install. However, depending on the placement, this treatment is more expensive than other solutions, and requires maintenance of the landscaping. Planters are typically 0.9 metres wide.

Parking Stops



Edmonton (globalnews.ca)

Parking stops and similar low linear forms of protection are inexpensive and offer several benefits. These have a high level of durability, can provide near continuous separation, and are a good solution when minimal buffer width is available. Parking stops are typically 1.8 metres long, 0.3 to 0.6 metres wide and a minimum of 100 millimetres in height. Parking stops are typically spaced 1.8 metres apart.

Parked Cars



Saskatoon (twitter.com)

While parked cars are not a form of protection on its own, parked cars can provide an additional level of protection and comfort for bicyclists. A parking lane width of 2.4 metres is desired to discourage motor vehicle encroachment into the protected bike lane. A minimum buffer width of 0.9 metres is required to allow for the opening of doors and other maneuvers.

Appendix D Protected Bike Lane Best Practices

Mid-Block Considerations

Driveways



Saskatoon (google.com)

Driveways that intersect with protected bike lanes create a potential crash risk due to the conflict between turning motor vehicles and through bicyclists. On one-way and two-way protected bike lanes, parking should be prohibited at least 6 metres from the edge of a driveway, depending on vehicle speeds and volumes.

Transit Stops



Vancouver
(bicycledutch.wordpress.com)

Island platforms may be used at locations where buses may stop in a travel lane. Pavement markings and signs shall be placed prior to the platform to indicate that bicyclists should yield to pedestrians.

Where bus service is sufficiently infrequent, transit stops can be designed in the protected bike lane.

Mid-Block Curb Ramp



(ibiketo.ca)

Accessible parking should be located mid-block within a parking lane. A crosswalk and curb ramp shall connect to the access aisle to the sidewalk. A widened buffer space may be used to accommodate a side mounted vehicle ramp or lift so that it will not protrude into the protected bike lane and become a hazard to bicyclists. If significant taxi or paratransit service exists along the protected bike lane, providing periodic loading zones to allow the vehicles to pull out of the travel lane should be considered. Tactile surfaces may also be used.

Appendix D Protected Bike Lane Best Practices

Intersections Signalization



Seattle (blogs.seattletimes.com)

Signalization separates the movements of automobiles and bicyclists through an intersection and removes potential conflict points which are present with other treatments. A separate signal phase allows bicyclists to proceed without right-turning vehicle conflicts and stops bicyclists at times when right-turning automobiles can proceed.

Lateral Shift



Salt Lake City (FHWA, 2015)

A lateral shift moves cyclists to the left of the motor vehicle right turn lane before vehicles can move right. This design allows bicyclists to be more visible to right-turning motorists.

Mixing Zone



New York City (FHWA, 2015)

A mixing zone is an area where bicyclists and right-turning motorists merge into one travel lane approaching an intersection. Mixing zones provide a design option in which the potential conflict between right-turning motorists and through bicyclists occurs before the intersection, similar to the Lateral Shift design.

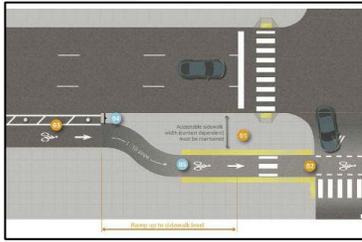
Bend-In



Saskatoon

The bend-in design shifts the protected bike lane closer to the motorized traffic lane to increase the visibility of bicyclists for turning motorists. This design may also accommodate a curb extension which can benefit pedestrians by decreasing crossing distance and providing amenity space.

Bend-Out



The bend-out design shifts the protected bike lane away from the intersection, allowing motorists to complete turning movements before interacting with bicyclists.

Protected Intersection



Protected intersection provide a high level of comfort and safety for bicyclists, especially at large intersections with multiple lanes and complex signal phasing. This design provides dedicated space for bicyclists extending into the intersections and as such can accommodate through, left-turn, and right-turn bicycle movements in a safe and low-stress manner.

White Chevrons and White Lines



White dashed lines may be used to mark extensions of the protected bike lane through intersections or other traffic conflict areas.

Use of Green Coloured Pavement



Green pavement increases awareness of bicycles and can be used to indicate an area of potential conflict with motor vehicles.

Appendix D Protected Bike Lane Best Practices

Bike Boxes



Montreal (connect2edmonton.ca)

Bike boxes are designated spaces at signalized intersections that allow bicyclists to queue in front of motor vehicles at red lights. Bike boxes are placed between the stop bar and the pedestrian crosswalk. Bike boxes increase the visibility of queued bicyclists and provide them with the ability to start up and enter the intersection in front of motor vehicles when the signal turns green.

Two-Stage Left-Turn Queue Boxes



Saskatoon (globalnews.ca)

Two-stage left-turn queue boxes allow bicyclists to make left turns at multi-lane intersections from a right-side protected bike lane, or right turns from a left-side protected bike lane. Bicyclists who arrive on a green signal proceed through the intersection and wait in the designated two-stage left-turn queue box away from through-moving bicycles and in front of cross-street traffic. Bicyclists complete their left turn when the signal turns green.

| Design Elements | Cities | | | | |
|--|--|--|---|--|--|
| | Calgary | Ottawa | Toronto | Toronto | Winnipeg |
|  <p>(google.com) 8 Avenue Southwest (4 Street Southwest to 11 Street Southwest)</p> |  <p>(google.com) Laurier Avenue (Elgin Street to Bronson Avenue)</p> |  <p>(toronto.ca) Woodbine Avenue (O'Connor Drive and Queen Street East)</p> |  <p>(toronto.ca) Hoskin Avenue (St. George Street to Queen's Park Crescent West)</p> |  <p>(winnipeg.ca) Sherbrook Street (Wolseley Avenue and Broadway Avenue)</p> | |
| Direction and Width | <ul style="list-style-type: none"> One-way on both sides of a two-way street | <ul style="list-style-type: none"> One-way on both sides of a two-way street 1.8 metres wide | <ul style="list-style-type: none"> One-way on both sides of a two-way street 1.7 to 2.0 metres wide | <ul style="list-style-type: none"> One-way on both sides of a two-way street | <ul style="list-style-type: none"> One-way on one side of a one-way street 1.5 metres wide |
| Forms of Protection | <ul style="list-style-type: none"> Green delineator posts in painted buffer along some blocks Green delineator posts on continuous concrete parking curbs in painted buffer along some blocks Parked cars | <ul style="list-style-type: none"> White delineator posts in a 0.3 to 0.5 metres cross-hatched painted buffer along some blocks White/blue delineator posts on continuous and non-continuous concrete parking curbs in a 0.3 to 0.5 metres painted buffer along some blocks Planters Parked cars | <ul style="list-style-type: none"> White delineator post in a 0.6 to 1.2 metres cross-hatched painted buffer Parked cars | <ul style="list-style-type: none"> White delineator post in a 0.5 to 1.0 metres cross-hatched painted buffer Parked cars | <ul style="list-style-type: none"> White delineator post in a 0.85 metres painted buffer Concrete medians at end of parking areas Planters Parked cars Bicycle rack |
| Driveway | <ul style="list-style-type: none"> Dashed white lines, dashed green coloured pavement, and bicycle symbols Parking is prohibited at least 6 metres | <ul style="list-style-type: none"> Dashed white lines Parking is prohibited at least 6 metres at some locations | <ul style="list-style-type: none"> Dashed white lines and bicycle symbol | <ul style="list-style-type: none"> White elephants feet pavement marking, bicycle symbol and directional arrow Parking is prohibited at least 6 metres at some locations | <ul style="list-style-type: none"> Parking is prohibited at least 6 metres at some locations |
| Transit Stop | <ul style="list-style-type: none"> Buses stop in bike lane | <ul style="list-style-type: none"> Not required since the corridor does not have regular transit service | <ul style="list-style-type: none"> Buses stop in bike lane | <ul style="list-style-type: none"> Buses stop in traffic lane | <ul style="list-style-type: none"> Island platforms with buses stopping in middle of traffic (curb cut to sidewalk provided) |
| Accessible Parking | <ul style="list-style-type: none"> Disabled parking adjacent to concrete parking curbs at start of the block Disabled parking in bike lane | <ul style="list-style-type: none"> Cross-streets or parallel roads used for Para Transpo | | <ul style="list-style-type: none"> Private vehicles under contract with WheelTrans stop in bike lane | |
| Intersection | <ul style="list-style-type: none"> Dashed white lines, dashed green coloured pavement and bicycle symbols Bike boxes Two-stage left-turn queue boxes | <ul style="list-style-type: none"> Green coloured pavement Two-stage left-turn queue boxes with "No Right Turn on Red" restrictions | | <ul style="list-style-type: none"> Dashed white lines and white chevrons Bike boxes with "No Right Turn on Red" restrictions | |

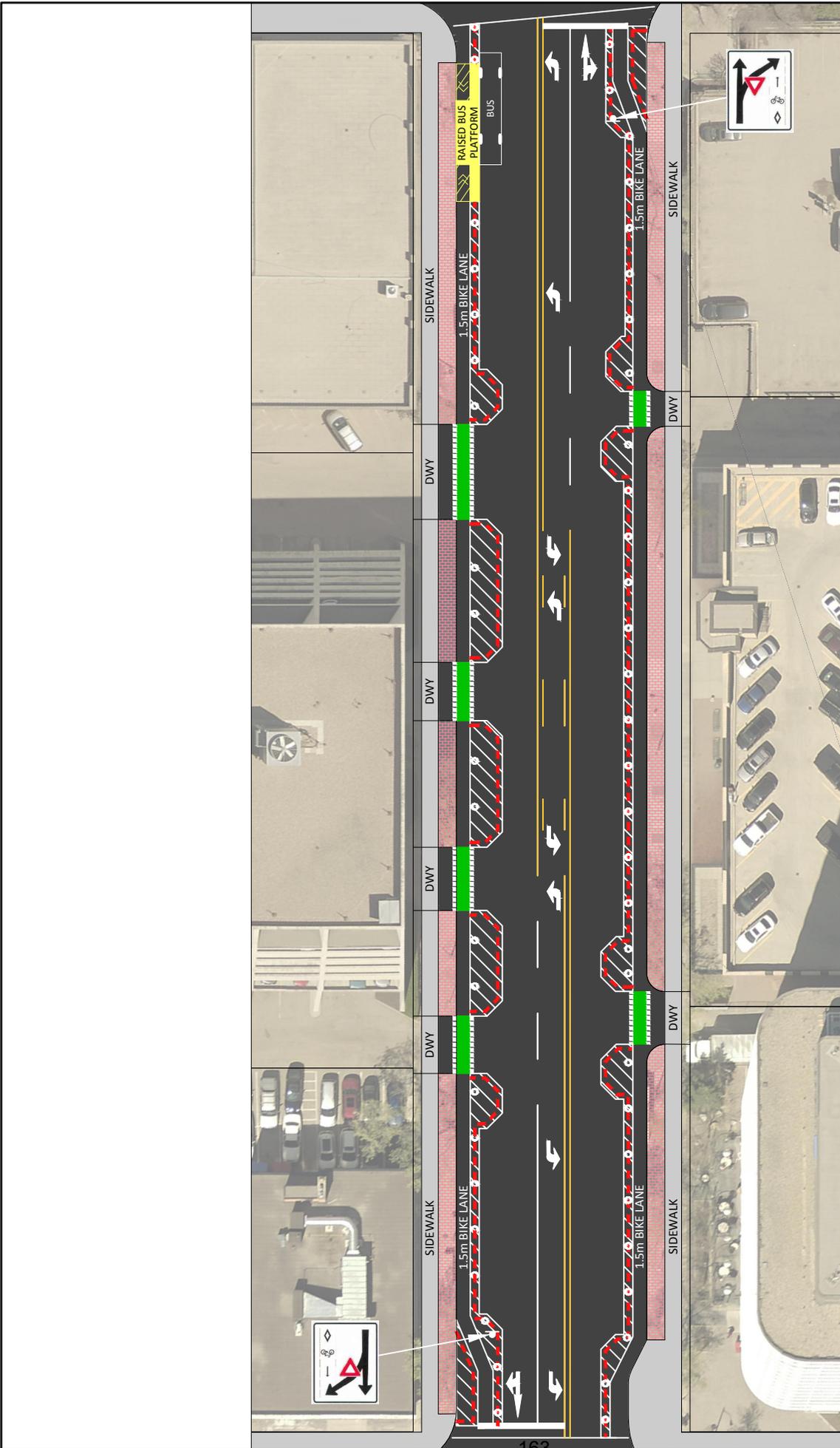


FIGURE 1
RECOMMENDED DESIGN
TYPICAL BLOCK

LEGEND

--- PRECAST CONCRETE CURB AT 2m SPACING

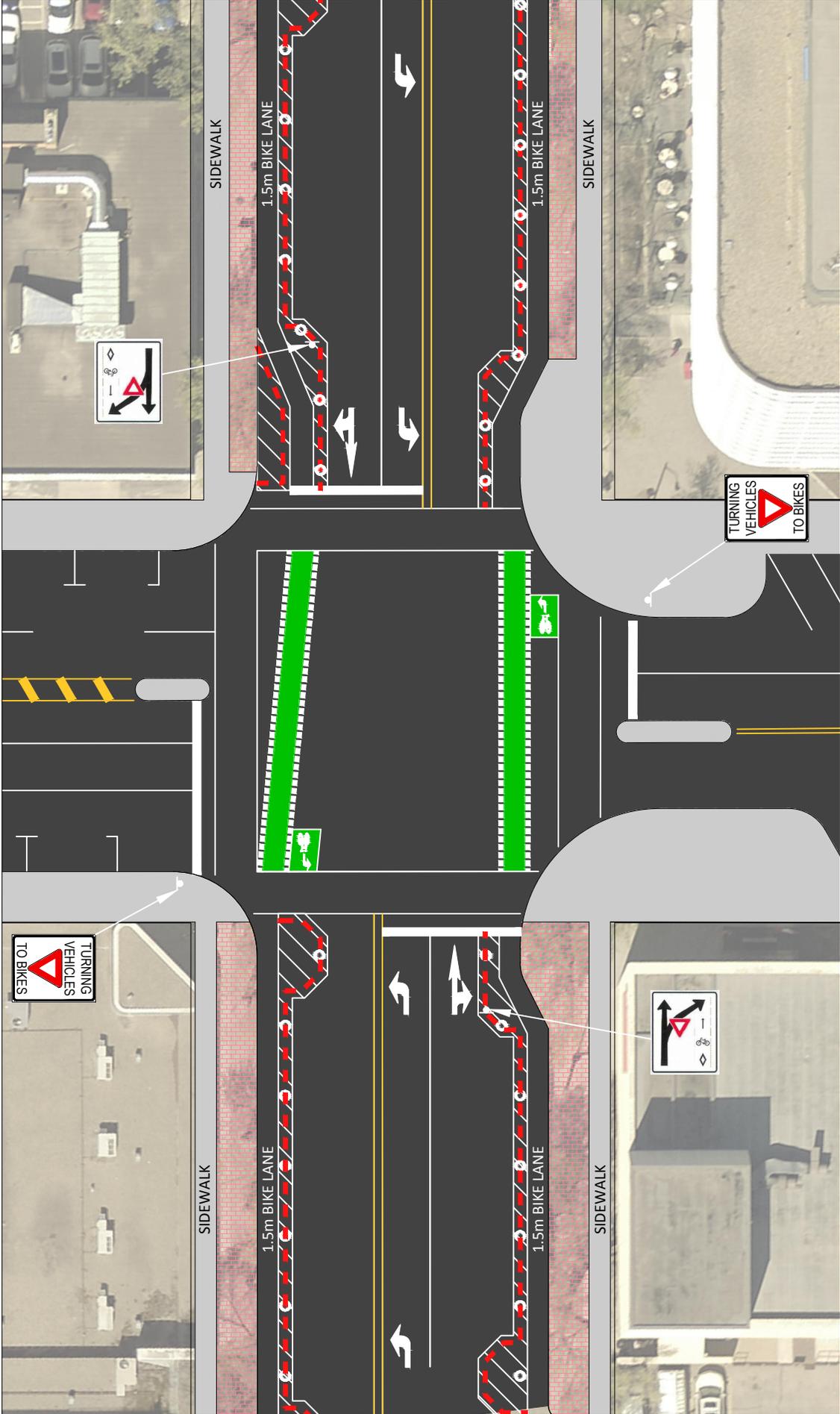
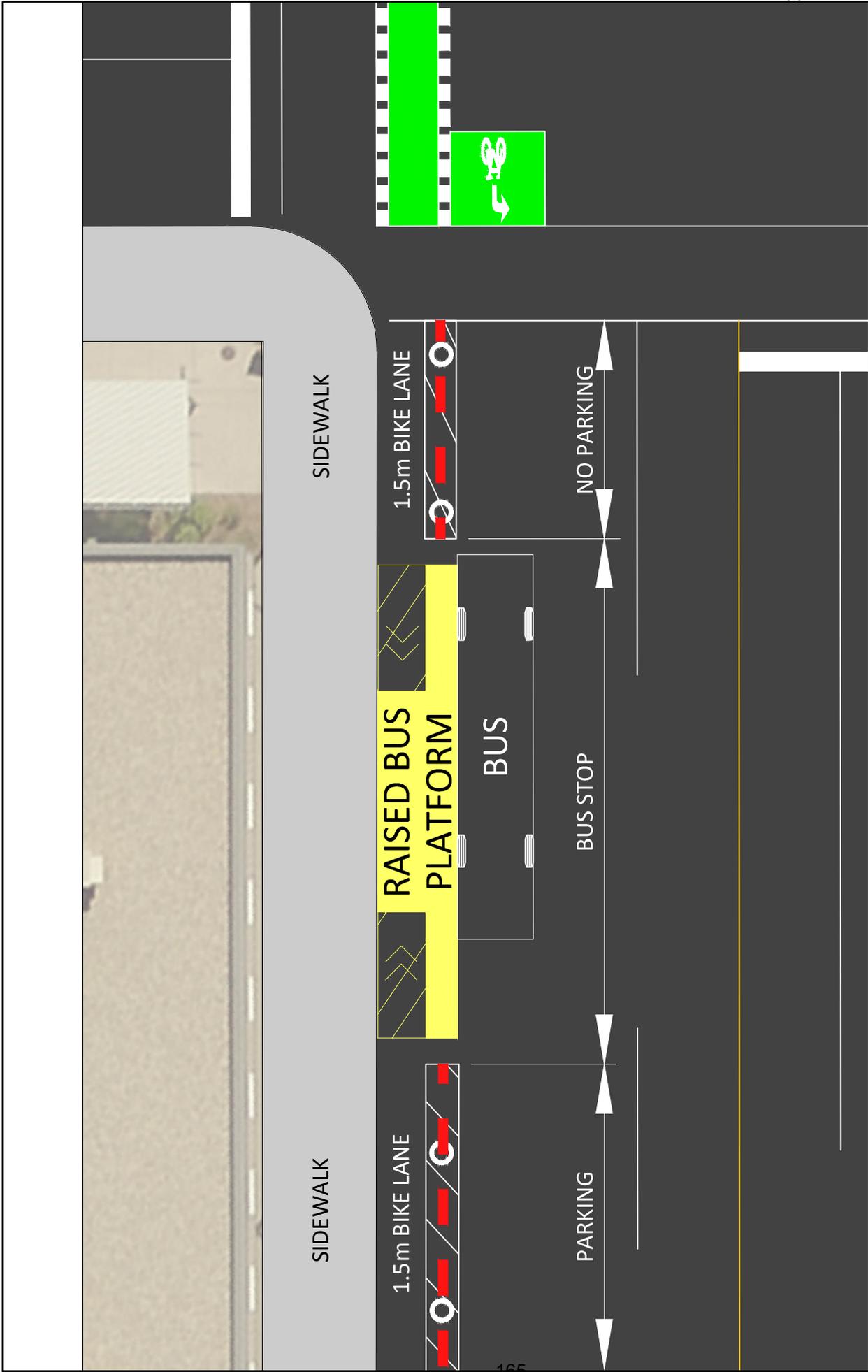


FIGURE 2
RECOMMENDED DESIGN
TYPICAL INTERSECTION

LEGEND
 - - - PRECAST CONCRETE CURB AT 2m SPACING



LEGEND

- PRECAST CONCRETE CURB AT 2m SPACING

FIGURE 3
RAISED BUS PLATFORM

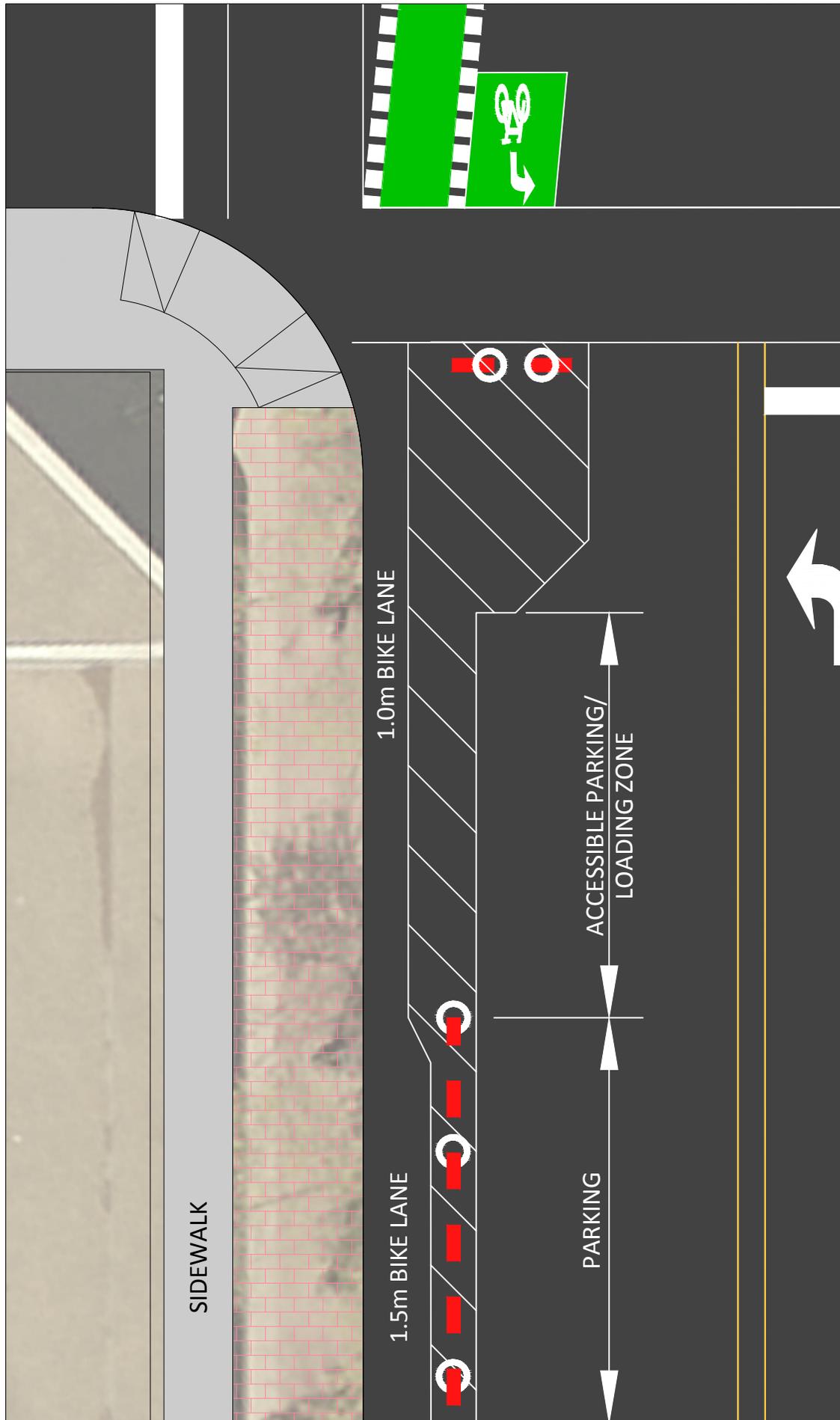


FIGURE 4
**ACCESSIBLE PARKING/
LOADING ZONE**

LEGEND

-  PRECAST CONCRETE CURB AT 2m SPACING

Maintenance Summary

A key goal of the Protected Bike Lanes Demonstration Project was to assess the feasibility of installing permanent protected bike lanes and provide the flexibility necessary to apply lessons learned during the demonstration period. This approach proved effective for understanding the maintenance operations for the bike lanes and making improvements during the demonstration period.

Snow Removal

The City of Saskatoon's (City) goal is to have the bike lanes cleared 48 hours after the end of a major snowfall event. Clearing the snow within 48 hours allows businesses along the bike lanes to push the snow off the sidewalk into the bike lanes before it is removed by the City. The lanes are cleared and treated with sand as needed between snow events.

The following lessons were learned in the first year of snow removal:

- A standard that more closely resembled sidewalk clearing was needed because people needed to walk across the bike lanes to access their parked vehicles (level-of-service standard for the clearing of bike lanes was originally proposed to mirror that of the adjacent roadway).
- Maintaining the bike lanes to a clear pavement standard (no tolerance for packed snow or snow accumulation) was needed. This increased the frequency of cleaning to each snowfall rather than being discretionary based on the amount of snowfall.
- A sand strategy was implemented to improve traction on bike lanes (as salt would create ice through dilution and "refreeze" causing ice issues). Consistent weather below -10C was ideal as ice could be managed with sand.
- Ongoing education and communication is necessary to ensure businesses comply with pushing the snow into the bike lanes before the lanes are cleared by the City. While most Downtown businesses are able to comply with clearing their sidewalks in a timely manner, during the demonstration notices were issued to businesses who were repeatedly piling snow into the lanes that had already been cleared by the City.

These changes were identified in 2015/2016 and implemented for the 2016/2017 winter road maintenance season.

Water, Ice and Debris Accumulation

Water and ice accumulation in the bike lane is a function of its placement adjacent to curb as well as pavement condition. Water drains to gutters and catch basins on either side of the street and at the lowest points on the road. The gutters are designed to move water longitudinally along the road to the catch basin, which is within the bike lane. Freeze-thaw cycles also prevent water/ice from flowing and/or evaporating. During the spring thaw, some accumulation is natural although catch basins may become obstructed and need City intervention.

Pavement deterioration on 23rd Street has contributed to drainage and ponding issues. Pavement quality will be addressed through the resurfacing of 23rd Street East which is planned for 2018 between 4th Avenue and Spadina Crescent.

For the 2017 spring, summer and fall seasons of 2017 a pilot study was undertaken to determine the feasibility of the City partnering with DTN YXE for street sweeping utilizing a micro air street sweeper, also known as an air sweeper. The air sweeper is much narrower and utilizes different technology than a traditional street sweeper to clean streets and control dust in high population, narrow and congested locations such as bike lanes, catch basins and the transportation network within the Downtown. The pilot study consists of the City re-tasking a small sweeper to be operated by the DTN YXE. The Air Sweeper is designed for narrow and congested locations such as sidewalks, gutters and bike lanes.

Replacement of Damaged and/or Missing Delineator Poles

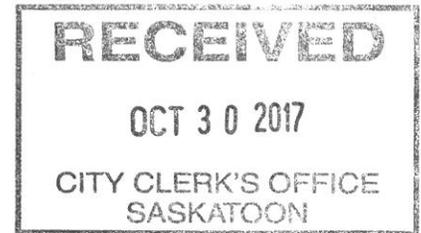
Poles near bus stops and some corners were being hit repeatedly and were removed. The City relies on notification of damaged poles so that they can be repaired quickly.

Summary of Maintenance Costs to date, 2015-2017

| | Snow & Sweep |
|--------------------|-------------------------|
| 2015 | 60,000 |
| 2016 | 110,000 |
| 2017 (est) | 80,000 |
| Grand Total | 250,000 |

6000-5

From: City Council
Sent: Monday, October 30, 2017 3:05 PM
To: City Council
Subject: Form submission from: Write a Letter to Council



Submitted on Monday, October 30, 2017 - 15:05
Submitted by anonymous user: 204.83.204.174
Submitted values are:

Date: Monday, October 30, 2017
To: His Worship the Mayor and Members of City Council
First Name: Keith
Last Name: Moen
Address: 9-1724 Quebec Ave
City: Saskatoon
Province: Saskatchewan
Postal Code: S7K 1V9
Email: keith.moen@nsbasask.com
Comments:
Hello,

I would like to request to speak to the Protected Bike Lanes Demonstration Project report that will be presented at the November 6th Transportation Committee meeting.

Yours,
Keith Moen

The results of this submission may be viewed at:
<https://www.saskatoon.ca/node/398/submission/200870>

Winter Road Maintenance – 2018 Snow and Ice Maintenance Program Options

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:
That Option 1 be implemented as outlined in this report.

Topic and Purpose

The purpose of this report is to obtain approval on strategic direction of winter maintenance funding, long-term snow management facility investigation, and priority street maintenance resource levels.

Report Highlights

The Administration has included three options for allocation of an additional \$1,200,000 annual funding for Winter Road Maintenance priorities.

Strategic Goal

This report supports the four-year Strategic Goal of Moving Around by ensuring safe winter mobility around Saskatoon. It also supports the City's Leadership Commitments to Reliable and Responsive Service; Strong Management and Fiscal Responsibility; and Effective Communications, Openness, and Accountability.

Background

The City of Saskatoon Winter Road Maintenance Level of Service document was included in the 2016 Budget package which resulted in City Council approval of a five-year incremental mill rate increase of 0.55 mills per year of additional funding. This funding is provided to build a base for future city-wide snow removal, as well as increase the current winter levels of service.

City Council, at its meeting held on March 27, 2017, considered the 2016-2017 Winter Road Maintenance – Operations Update report and resolved, in part:

- “2. That the Administration look into and report back on the possibility of further snow clearing activities during snow events on Priority One Streets.”

Due to budgetary pressures in April 2017, the mill rate increase was deferred; several projects were underway or completed by that point and their costs were absorbed into the reduced operating budget.

Over the spring of 2017, Administration conducted a comprehensive engagement study to identify winter maintenance improvements that would most significantly improve accessibility across different transportation modes including passenger vehicles, transit

riders, cyclists, and sidewalk users. Several engagement deliverables are planned for implementation in 2018, and others are proposed as options.

City Council, at its meeting held on August 28, 2017, considered the Snow and Ice Management Service Level report and resolved, in part:

- “2. That Option 2 as outlined in Attachment 2 of the report of the A/General Manager, Transportation & Utilities Department be recommended to the 2018 Preliminary Budget and Business Plan deliberations; and
3. That the Administration report on phasing in Option 5 on reducing corporate costs related to snow management facilities for the 2018 Preliminary Budget and Business Plan deliberations.”

Report

Administration is presenting three options for consideration for allocation of the additional 0.55 mills (equivalent to approximately \$1,200,000) in 2018. Please see Attachment 1 for further details on these options.

Option 1 – Quick-Win Service Design Outcomes and Snow Removal Scaling

- A number of initiatives will be undertaken as a result of the Winter Mobility Service Design project including the following program changes and pilot studies:
 - Small scale Winter 2017/18 pilot of a Rapid Response Mobility Team;
 - Amenity strip snow clearing adjacent to bike lane pilot;
 - Public education campaign regarding winter maintenance practices;
 - Revised communication and co-ordination plan for Business Improvement District snow removal; and
 - Enhanced Snow Angel Program to leverage strong communities and empower those already assisting others to continue to provide assistance for neighbours.
- Inclusion of 2.75 full-time equivalent positions to fully staff two new one-ton sanders resulting in two additional tandems dedicated to high priority streets.
- Add blue warning lights to remainder of on-road winter maintenance fleet.
- Continue Road Weather Information System partnership with University of Saskatchewan.
- Undertake neighbourhood ice rut removal pilot.
- Investigate and conceptualize a user-pay snow management facility operating model for implementation in 2018/2019 season.
- Additional internal resource allocation and contract trucking forces will be allocated to night-time snow removal.
- Estimated Total Budget Allocation: \$1,200,000; 2.75 Full Time Equivalents

Option 2 – Ultimate Service Design Outcomes and Snow Removal Scaling

- Full neighbourhood implementation of the Rapid Response Mobility Team.
- Implementation of other Service Design project outcomes.
- Staffing and operation of additional one-ton sanders as detailed in Option 1.
- Add blue warning lights to remainder of on-road winter maintenance fleet.

- Continue Road Weather Information System partnership with University of Saskatchewan.
- Undertake neighbourhood ice rut removal pilot.
- Investigate and conceptualize user-pay snow management facility operating model for implementation in 2018/2019 season
- Estimated Total Budget Allocation: \$1,200,000; 6.75 Full Time Equivalents

Option 3 – Quick-Win Service Design Outcomes and Savings Package:

- Implementation of Service Design project outcomes as outlined in Option 1.
- Staffing and operation of additional one-ton sanders as detailed in Option 1.
- Add blue warning lights to remainder of on-road winter maintenance fleet.
- Continue Road Weather Information System partnership with University of Saskatchewan.
- Undertake neighbourhood ice rut removal pilot.
- Deposit an estimated \$650,000 into the Snow and Ice Management Contingency Reserve.
- Investigate and conceptualize user-pay snow management facility operating model for implementation in 2018/2019 season.
- Estimated Total Budget Allocation: \$1,200,000, 2.75 Full Time Equivalents

Administration is recommending Option 1. It will allow the City to prototype and evaluate small scale outcomes from the Service Design initiative while improving our technological capacity, on-road resources, and additional parking capacity through increased snow removal.

Options to the Recommendation

City Council may direct the Administration to select and cost a different combination of activities that make up the options above.

Public and/or Stakeholder Involvement

All citizens, including the City's Citizen Advisory Panel, were invited to participate in the survey portion of the Service Design Project. Additionally, the co-design portion was attended by City officials, two City Councillors, His Worship the Mayor and representatives of the following groups:

- Accessibility Advisory Committee;
- Business Improvement Districts (Broadway, Downtown, Riversdale & 33rd Street);
- In Motion;
- Newcomer's Information Centre;
- Population and Public Health – Injury Prevention;
- Public School Board;
- Saskatoon Council on Aging;
- Saskatoon Cycles; and
- Saskatoon Environmental Advisory Committee.

Communication Plan

Regular snow and ice maintenance, and snow event response activities are promoted through automated Snow and Ice Updates, Public Service Announcements, social media, the City’s website, and through marketing and communications material that are part of the annual Better Winter Roads campaign. Any change to the current service level or program will be communicated through these methods.

Financial Implications

Option 1 provides increased on-road resources during and following a snow or weather event, while testing ideas and outcomes from the Winter Service Design exercise and increasing snow removal resources for high density parking streets. Option 2 maximizes the impact of the Service Design exercise through full implementation of the Rapid Response Mobility Team, increasing internal resources required to scale to city-wide snow removal. Option 2 is expected to have the greatest immediate impact on multi-modal mobility, but does not provide immediate parking improvements. Option 3 provides the maximum contribution to the reserve

| Item | Option 1 | Option 2 | Option 3 |
|--|--------------------------|--------------------------|--------------------------|
| A) Quick-win Service Design Outcomes | \$ 60,000 | \$ 60,000 | \$ 60,000 |
| B) Parachute team (pilot or full scale) | \$ 150,000 | \$ 650,000/yr | \$ 0 |
| C) Increase Sander/Plow Capacity | \$ 250,000/yr | \$ 250,000/yr | \$ 250,000/yr |
| D) Blue Warning Light Implementation | \$ 60,000 | \$ 60,000 | \$ 60,000 |
| E) Road Weather Information System Pilot | \$ 50,000 | \$ 50,000 | \$ 50,000 |
| F) Rut Removal Pilot | \$ 80,000 | \$ 80,000 | \$ 80,000 |
| G) Increased Night-time Snow Removal | \$ 500,000 | \$ 0 | \$ 0 |
| H) Snow Management Facility Model Study | \$ 50,000 | \$ 50,000 | \$ 50,000 |
| I) Reserve Contribution | \$ 0 | \$ 0 | \$ 650,000 |
| Total | \$1,200,000 2.75 FTEs | \$1,200,000 6.75 FTEs | \$1,200,000 2.75 FTEs |

Other Considerations/Implications

There are no policy, environmental, privacy, or CPTED implications or considerations.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. 2018 Snow and Ice Maintenance Program Options

Report Approval

Written by: Brandon Harris, Director of Roadways & Operations
 Approved by: Angela Gardiner, Acting General Manager, Transportation & Utilities Department

2018 Snow and Ice Maintenance Program Options

Option 1 – Quick-Win Service Design Outcomes and Snow Removal Scaling

- A number of initiatives will be undertaken as a result of the Winter Mobility Service Design project including the following program changes and pilot studies:
 - Small scale Winter 2017/18 pilot of a Rapid Response Mobility Team. Citizen engagement identified that the greatest mobility barrier for sidewalk and transit users was neighbourhood sidewalk clearing compliance. The rapid response team would consist of specialized forces that perform targeted snow and ice clearing in residential areas while educating the public, supporting enforcement activities, and empowering residents with information on assistance for meeting their homeownership responsibilities. Crews would arrive in a neighbourhood unannounced and provide snow and ice detailing while visually marking their work and providing door hangers for residents for whom the service was provided. Door hangers will include details on the sidewalk clearing bylaw, information about organizations that can assist with sidewalk snow clearing, and information about the Snow Angel Program. Neighbourhoods that receive the rapid response team service will not see them return a second time that year. Size of per-shift work would be approximately a five block diameter. During snow event response, these additional forces would be used to improve response times, in particular along city-cleared sidewalks and walkways. Estimated cost is \$150,000 for a small scale pilot.
 - Amenity strip snow clearing adjacent to bike lane pilot. This project will request businesses adjacent to one set of bike lanes clear their snow into the amenity strip rather than the bike lanes to minimize bike lane disruption during snow storms.
 - Public education campaign regarding winter maintenance practices.
 - Revised communication and co-ordination plan for Business Improvement District snow removal.
 - Enhanced Snow Angel Program to leverage strong communities and empower those already assisting others to continue to provide assistance for neighbours.
- Inclusion of 2.75 full-time equivalent positions to fully staff two new one-ton sanders to improve neighbourhood street mobility and optimize salt and sand placement. One-ton sanders can more safely navigate narrow residential streets and have better control of the amount of sand and salt material placed. This will cut down on dust in the spring and improve the efficiency of the spring sweeping programs. It will also effectively increase the tandem fleet available for response on freeways and major arterials by two trucks.
- Add blue warning lights to remainder of on-road winter maintenance fleet.
- Continue development and pilot of a Road Weather Information System in partnership with the University of Saskatchewan. The Road Weather Information

System will use scientific analyses to improve winter ice prevention decision making.

- Undertake the Neighbourhood ice rut removal pilot that was cancelled in the spring of 2017 due to unseasonably warm temperatures will be attempted again. This exercise will test the logistics of a future city-wide snow removal program.
- Investigate and conceptualize a user-pay snow management facility operating model. User pay model will address needs for scaling of snow management facilities to accommodate City-wide snow removal. Earliest implementation in 2019.
- Additional internal resource allocation and contract trucking forces will be allocated to night-time snow removal, in particular along dense parking areas on arterial roadways. In an average year, will increase total snow removal by approximately 100 to 150 curb-kms.
- Estimated Total Budget Allocation: \$1,200,000; 2.75 Full Time Equivalents

Option 2 – Ultimate Service Design Outcomes and Snow Removal Scaling

- Full neighbourhood implementation of the Rapid Response Mobility Team. As detailed in Option 1, teams would provide detailed snow and ice clearing on sidewalks in residential areas while improving education and enforcement, and empowering and inspiring residents to meet their bylaw requirements. With this option, rather than a 5 block hot-spot, the team would address mobility issues within an entire neighbourhood per night. This would have a significant impact on accessibility in particular for residents with mobility challenges. By virtue of the team arriving unannounced, only once per year, and with enforcement support, it will not replace citizen's responsibility, rather it will elevate city-wide compliance while helping out when mobility is most restricted. The additional forces will be utilized during snow events to improve response times and will support the long term vision for City-wide residential snow removal by building internal human resource capacity required to execute broad removal strategies. Estimated cost: \$650,000.
- Implementation of other Service Design project outcomes as outlined in Option 1.
- Staffing and operation of additional one-ton sanders as detailed in Option 1.
- Add blue warning lights to remainder of on-road winter maintenance fleet.
- Continue Road Weather Information System partnership with University of Saskatchewan.
- Undertake neighbourhood ice rut removal pilot.
- Investigate and conceptualize user-pay snow management facility operating model.
- Estimated Total Budget Allocation: \$1,200,000; 6.75 Full Time Equivalents

Option 3 – Quick-Win Service Design Outcomes and Savings Package

- Implementation of Service Design project outcomes as outlined in Option 1.
- Staffing of additional one-ton sanders as detailed in Option 1.
- Add blue warning lights to remainder of on-road winter maintenance fleet.
- Continue Road Weather Information System partnership with University of Saskatchewan.
- Undertake neighbourhood ice rut removal pilot.
- Deposit an estimated \$650,000 into the Snow and Ice Management Contingency Reserve.
- Investigate and conceptualize user-pay snow management facility operating model.
- Estimated Total Budget Allocation: \$1,200,000, 2.75 Full Time Equivalents

2018 Neighbourhood Traffic Management Reviews

Recommendation

That the Standing Policy Committee on Transportation recommend to City Council:
That the ten neighbourhoods selected for 2018 traffic reviews, as part of the Neighbourhood Traffic Management Program, include College Park, College Park East, Riversdale, Eastview, Nutana Suburban Centre, Westview, Massey Place, Fairhaven, River Heights and Forest Grove.

Topic and Purpose

This report identifies the ten neighbourhoods selected for traffic reviews in 2018. The traffic reviews are intended to address local traffic concerns such as speeding, shortcutting, pedestrian accommodation, and parking.

Report Highlights

The ten neighbourhoods selected for traffic reviews include College Park, College Park East, Riversdale, Eastview, Nutana Suburban Centre, Westview, Massey Place, Fairhaven, River Heights and Forest Grove based on Councillor input, collision history, number of concerns received, and number of existing temporary traffic calming devices.

Strategic Goal

This report supports the Strategic Goal of Moving Around as it improves the safety of all road users (pedestrians, cyclists, and drivers), and helps provide a great place to live, work, and raise a family.

Background

City Council, at its meeting held on August 14, 2013, approved a new process within the Neighbourhood Traffic Management Program. This process includes a strategy to review concerns on a neighbourhood-wide basis by engaging the community and stakeholders in first identifying specific traffic issues, and secondly, developing joint recommendations that address the issues. The progress to date is illustrated in Attachment 1 and summarized below.

In 2014, Neighbourhood Traffic Plans were developed for the following eleven neighbourhoods: Varsity View, Westmount, Brevoort Park, Holliston, Haultain, Hudson Bay Park, Caswell Hill, City Park, Kelsey-Woodlawn, Mayfair, and Nutana.

In 2015, Neighbourhood Traffic Plans were developed for the following eight neighbourhoods: Mount Royal, Adelaide-Churchill, Lakeview, Meadowgreen, Montgomery Place, Confederation Park, Avalon, and Greystone Heights.

In 2016, Neighbourhood Traffic Plans were developed for the following eight neighbourhoods: Stonebridge, Willowgrove, Hampton Village, Silverspring, Grosvenor Park, Lakeridge, Sutherland, and Parkridge.

In 2017, Neighbourhood Traffic Plans are being developed for the following eleven neighbourhoods: Queen Elizabeth, Exhibition, Buena Vista, Erindale, Arbor Creek, Pleasant Hill, Dundonald, North Park, Richmond Heights, Silverwood Heights and Wildwood.

Report

The remaining neighbourhoods were prioritized based on the following criteria:

- Councillor priorities (3 points per selection);
- Collisions (0 points for low, 1 point for medium, 2 points for high);
- Number of outstanding concerns (1 point per concern); and
- Number of temporary traffic calming devices in place (1 point per device).

In two instances, adjacent neighbourhoods were grouped together in order to maximize efficiencies and to accommodate more people and neighbourhoods, resulting in eight separate traffic reviews.

This process results in the following neighbourhoods selected for 2018 traffic reviews:

1. College Park/College Park East (Ward 8);
2. Riversdale (Ward 2);
3. Eastview/Nutana Suburban Centre (Ward 7);
4. Westview (Ward 4);
5. Massey Place (Ward 4);
6. Fairhaven (Ward 3);
7. River Heights (Ward 5); and
8. Forest Grove (Ward 1).

Speeding concerns in other neighbourhoods will continue to be addressed on a case-by-case basis.

The prioritization of the neighbourhoods is outlined in Attachment 2.

The neighbourhood traffic reviews for the Rosewood, Lakewood Suburban Centre, Pacific Heights, and Evergreen neighbourhoods will not proceed in 2018 as the traffic patterns in these neighbourhoods will continue to evolve until development is complete.

Public and/or Stakeholder Involvement

Public meetings will be held for each of the eight reviews, including an initial meeting with residents and stakeholders, to identify specific traffic concerns and potential improvements, and a second meeting to present a neighbourhood draft traffic plan for discussion. A third meeting may be held if significant changes of the traffic plan are proposed. The neighbourhoods grouped together will attend a combined meeting.

Residents and business owners who cannot attend the meetings will be able to provide feedback via the City of Saskatoon's (City) online neighbourhood traffic concerns form, online engagement portal, or by phone, email, or mail.

Initial meetings will be held in spring 2018, while the second meetings will be held in fall 2018. The City's internal departments will have an opportunity to provide input on the plan pertaining to the impact on their operations.

Communication Plan

Residents and stakeholders in each neighbourhood will be invited to attend both meetings. The meeting invitations will be provided as follows:

- A flyer delivered to each residence in the neighbourhood;
- Through the Events section of the saskatoon.ca homepage;
- Through the online engagement portal;
- Through requesting the neighbourhood community associations to post the information on their website or social media pages; and
- By notifying the appropriate Councillor.

The collection of issues and potential improvements will be compiled through the following:

- The online engagement portal;
- Written submissions at the meetings;
- Written notes taken by the Administration at the meetings; and
- Written, verbal, and e-mail submission to the Administration.

Financial Implications

The resources required to undertake the neighbourhood traffic reviews outlined in this report are estimated at \$250,000, and will be submitted for approval as part of the 2018 Business Plan and Detailed Budget under Capital Project #1512 – Neighbourhood Traffic Management funded from the Traffic Safety Reserve. Temporary traffic calming measures installed from recommendations with individual reviews are included in this funding.

Improvements identified in the traffic plans are funded through the Traffic Safety Reserve. The purpose of the Traffic Safety Reserve is to provide funding for vehicular traffic, pedestrian, and safety related projects, including traffic calming. It is funded from the City's share of the fine revenue generated from red light cameras and Automated Speed Enforcement.

Environmental Implications

Neighbourhood traffic reviews are expected to have positive greenhouse gas emissions implications, as the goal is to reduce total vehicle mileage in a neighbourhood by reducing speeds and improving conditions for walking, cycling, and transit use.

Other Considerations/Implications

There are no options, policy, privacy, or CPTED considerations or implications.

Due Date for Follow-up and/or Project Completion

A report presenting the traffic plan will be prepared for each neighbourhood, and an annual report outlining the previous years' selections will be presented to City Council.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachments

1. Neighbourhood Traffic Review Distribution (Map)
2. Neighbourhood Prioritization List

Report Approval

Written by: Nathalie Baudais, Senior Transportation Engineer, Transportation
Reviewed by: David LeBoutillier, Acting Engineering Manager, Transportation
Jay Magus, Acting Director of Transportation
Approved by: Angela Gardiner, Acting General Manager, Transportation &
Utilities Department

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Legend

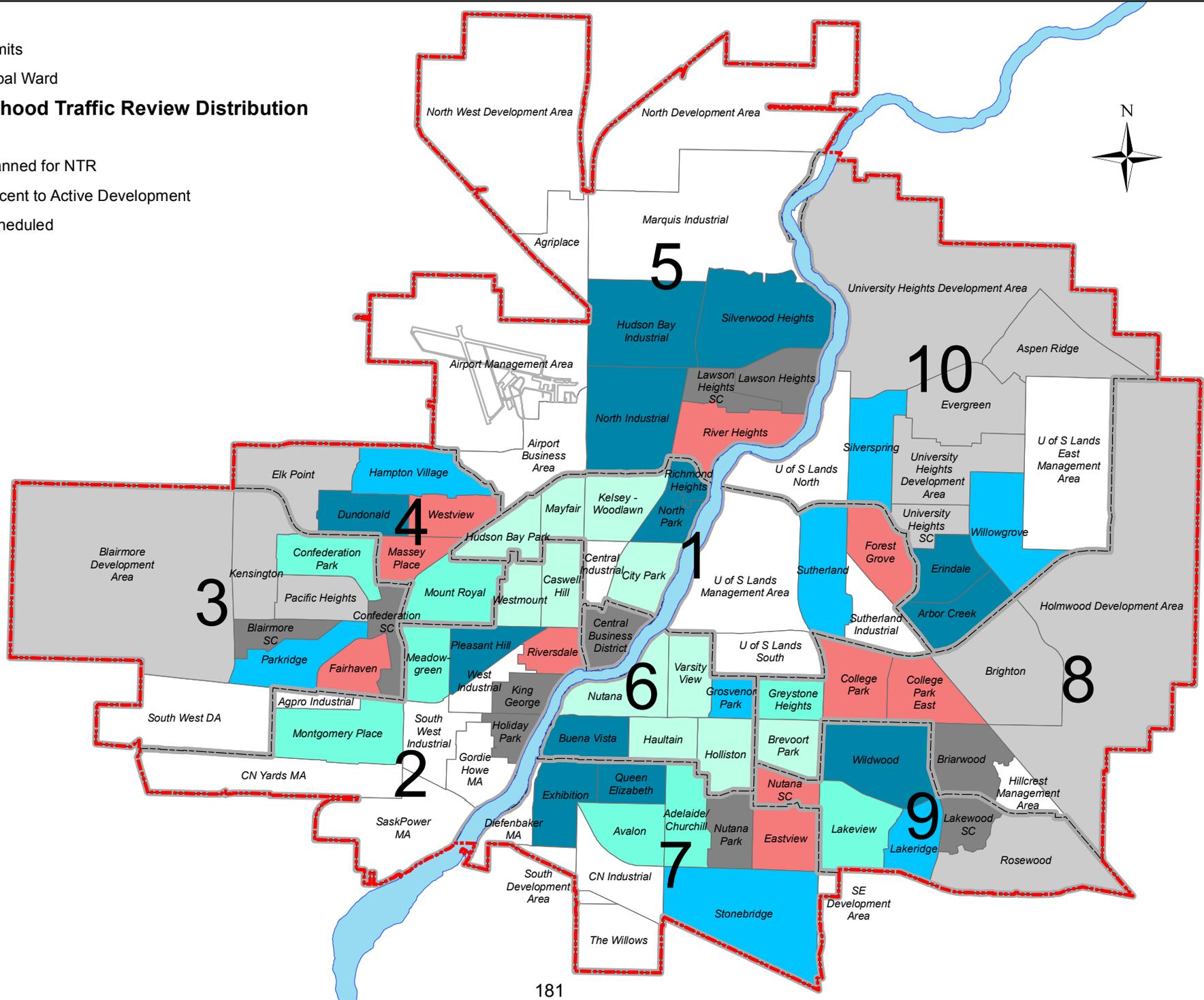
 City Limits

 Municipal Ward

Neighbourhood Traffic Review Distribution

Year

-  Not Planned for NTR
-  In/Adjacent to Active Development
-  Not Scheduled
-  2014
-  2015
-  2016
-  2017
-  2018



| Neighbourhood | # of Concerns | Temporary Traffic Calming Devices | Collisions | Councillor Selection | TOTAL SCORE | Year of Review | Ward |
|--------------------------------|---------------|-----------------------------------|------------|----------------------|-------------|----------------|------|
| College Park/College Park East | 9 | | 1 | 3 | 13 | | 8 |
| Riversdale | 3 | 5 | 2 | 3 | 13 | | 2 |
| Eastview / Nutana SC | 6 | 1 | 2 | 3 | 12 | | 7 |
| Rosewood / Lakewood SC | 11 | | 1 | | 12 | | 9 |
| Pacific Heights | 11 | | 0 | | 11 | | 3 |
| Westview | 7 | 1 | 0 | 3 | 11 | | 4 |
| Evergreen | 7 | | 1 | 3 | 11 | | 10 |
| Massey Place | 9 | 1 | 0 | | 10 | | 4 |
| Fairhaven | 4 | | 1 | 3 | 8 | | 3 |
| River Heights | 4 | | 1 | 3 | 8 | | 5 |
| Holiday Park / King George | 6 | 1 | 0 | | 7 | | 2 |
| Forest Grove | 4 | | 0 | 3 | 7 | | 1 |
| Briarwood | 4 | | 1 | | 5 | | 8 |
| Lawson Heights & SC | 3 | | 0 | | 3 | | 5 |
| Nutana Park | 2 | | 0 | | 2 | | 7 |
| Blairmore SC | | | | | 0 | | 3 |
| University Heights SC | | | | | 0 | | 10 |
| Kensington | | | | | 0 | | 3 |
| Aspen Ridge | | | | | 0 | | 10 |
| Brighton | | | | | 0 | | 8 |
| Brevoort Park | | | | | | 2014 | 8 |
| Caswell Hill | | | | | | 2014 | 2 |
| City Park | | | | | | 2014 | 2 |
| Haultain | | | | | | 2014 | 1 |
| Holliston | | | | | | 2014 | 6 |
| Hudson Bay Park | | | | | | 2014 | 6 |
| Kelsey-Woodlawn | | | | | | 2014 | 1 |
| Mayfair | | | | | | 2014 | 1 |
| Nutana | | | | | | 2014 | 6 |
| Varsity View | | | | | | 2014 | 6 |
| Westmount | | | | | | 2014 | 4 |
| Confederation Park | | | | | | 2015 | 3 |
| Montgomery Place | | | | | | 2015 | 2 |
| Greystone Heights | | | | | | 2015 | 8 |
| Avalon | | | | | | 2015 | 7 |
| Lakeview | | | | | | 2015 | 9 |
| Meadowgreen | | | | | | 2015 | 2 |
| Mount Royal | | | | | | 2015 | 4 |
| Adelaide-Churchill | | | | | | 2015 | 7 |
| Stonebridge | | | | | | 2016 | 7 |
| Willowgrove | | | | | | 2016 | 10 |
| Hampton Village | | | | | | 2016 | 4 |
| Sutherland | | | | | | 2016 | 1 |
| Silverspring | | | | | | 2016 | 10 |
| Grosvenor Park | | | | | | 2016 | 6 |
| Lakeridge | | | | | | 2016 | 9 |
| Parkridge | | | | | | 2016 | 3 |

| Neighbourhood | # of Concerns | Temporary Traffic Calming Devices | Collisions | Councillor Selection | TOTAL SCORE | Year of Review | Ward |
|-------------------------------|----------------------|--|-------------------|-----------------------------|--------------------|-----------------------|-------------|
| Queen Elizabeth / Exhibition | | | | | | 2017 | 7 |
| Buena Vista | | | | | | 2017 | 6 |
| Erindale / Arbor Creek | | | | | | 2017 | 10 |
| Pleasant Hill | | | | | | 2017 | 2 |
| Dundonald | | | | | | 2017 | 4 |
| North Park / Richmond Heights | | | | | | 2017 | 1 |
| Silverwood Heights | | | | | | 2017 | 5 |
| Wildwood | | | | | | 2017 | 9 |