



2022 ITE TRANSPORTATION ACHIEVEMENT AWARD

MONTGOMERY MAIN STREETS WHERE A STREET BECOMES A COMMUNITY

We would like to thank ITE for their consideration of our project for the 2022 Transportation Achievement Awards. We also acknowledge the contribution of the project team, City of Calgary, Urban Systems Ltd., and ALSA Road Construction Ltd., in the successful planning, design and delivery of this project.

Bowness Road runs through the heart of the community of Montgomery in north-west Calgary, Alberta, Canada. The street is fronted by a mix of residential housing, small businesses, and mixed-use buildings. It also connects to recreation centers, schools, and large regional parks along the Bow River.

Bowness Road was identified as a corridor in the City of Calgary's Main Streets Program. This program was established to transform our main streets into places where people want to live, work, and play. Montgomery was one of the first communities in Calgary to see re-investment in the public realm and streetscape as part of this program. The City committed funding for streetscape improvements following the land-use re-designation for the community.

INTRODUCTION

From 2018 to 2020, the City of Calgary worked with prime design consultant Urban Systems to prepare the streetscape master plan and detailed design of the corridor. Public engagement for the project began in 2018 to gather input on people's values and vision for the community and for Bowness Road, and to identify local issues and opportunities.

Along with site analysis and data collection, the engagement findings were used to develop the project vision and goals. The vision for Montgomery Main Street is: **"Where a street becomes a community"**, and included the following goals:

- **Social + Healthy Lifestyle:** Create a family-friendly and safe street environment that focuses on promoting a sense of community.
- **Mobility + Functionality:** Achieve a balance of multi-modal transportation options with a focus on pedestrian-friendly and inclusive design.
- **Character + Identity:** Create a street that establishes a unique sense of place and offers memorable experiences for both residents and visitors.
- **Economic:** Street improvements promote economic vitality by encouraging redevelopment opportunities and promoting investment.

We are proud to submit this project, **Montgomery Main Streets – Where a Street becomes a Community**, for the ITE International Transportation Achievement Award.

ORIGINAL CONDITION

Bowness Road had been identified in the Calgary Transportation Plan as a key transportation corridor. The street is classified as an Arterial Street in the western portion of the project area, which also serves as a secondary route in the City's goods movement network. The eastern portion holds the Neighbourhood Boulevard classification, which is meant to give walking and cycling a higher priority under Calgary's Complete Streets Policy (2014).



IMAGE 1. EXISTING NEIGHBOURHOOD BOULEVARD CROSS-SECTION WITH WIDE TRAVEL LANES, ON-STREET PARKING AND NARROW SIDEWALKS

Most of the original corridor accommodated two vehicle travel lanes with a parking lane on each side. At intersections, the wide travel lanes and parking lanes encouraged higher vehicle travel speeds and created longer crossing distances for people walking and cycling. Most intersections were also missing wheelchair ramps or had ramps that were poorly aligned with crosswalks. The traffic controls along Bowness Road were such that the main street primarily had right of way over the side street, with only two set of traffic signals over a two-kilometre stretch. This led to a consistent stream of traffic with little to no gaps for people trying to cross the road. Infrequent streetlighting and concerns around perception of safety at night were also a common theme from community engagement and represented a barrier to people feeling safe while walking along the street, particularly in the evenings.

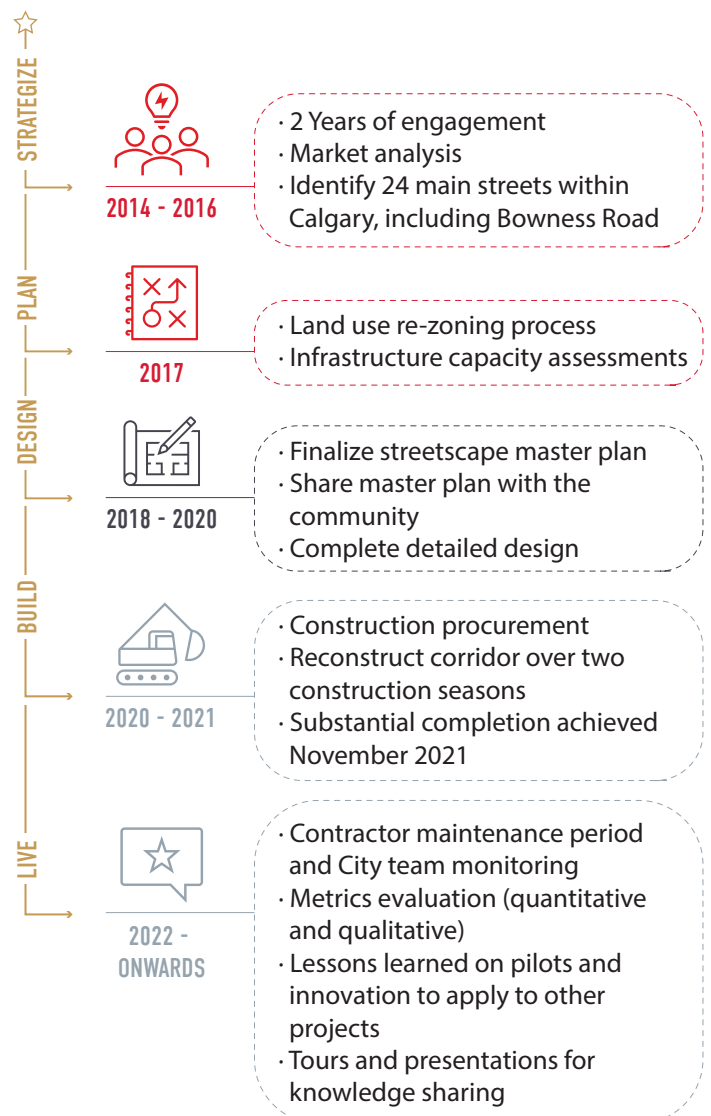
For pedestrians, Bowness Road provided narrow, uneven sidewalks often with no established curb or separation from the roadway. This encouraged drivers to encroach into the sidewalk space when parking and squeezed pedestrians against overgrown vegetation and residential fences. This issue was further

exacerbated during winter months when windrows created by snowplows further narrowed the sidewalk. Bowness Road was not a desirable walking corridor, especially at intersections.



IMAGE 2. NARROW SIDEWALK WITH NO CURB DELINEATION FROM ROADWAY, OVERGROWN VEGETATION

PROJECT TIMELINE



COMPLETE STREETS: DESIGNING FOR PEOPLE

The project team developed an innovative design that aimed to bring the community together by allowing people of all ages and abilities to travel safely and comfortably. To re-balance the street space between different travel modes, the design reduced the width of vehicle travel lanes and parking lanes, while still accommodating a bus rapid transit route through the community. The project team also completed several parking studies and found that on-street parking was under-utilized along some parts of the corridor. Parking was reduced or removed in these areas, and the space reallocated to support some of the design interventions, such as landscaping elements. This reapportion of right of way space was utilized to construct new active transportation and public amenities.

ALSA Road Construction Ltd. was selected as the General Contractor for the project through a two-stage procurement process. Construction began in the summer of 2020. Some of the key design interventions and innovation for the project include:

- a. Widened sidewalks with buffering from roadway traffic and parking. The project also completed several missing sidewalk and pathway links in the neighbourhood.



IMAGE 3. RECONSTRUCTED SIDEWALKS – BEFORE (TOP) AND AFTER (BOTTOM)



IMAGE 4. CONTINUOUS BICYCLE FACILITY ACROSS DRIVEWAY



IMAGE 5. CURB EXTENSIONS AND DIRECTIONAL CROSSWALKS AT BOWNESS RD AND 43 ST INTERSECTION, AND ENHANCED PEDESTRIAN FLASHERS ON BOTH SIDES OF THE STREET

- b. Installation of uni-directional, raised cycle tracks with buffering and visual delineation from sidewalks and parking lanes. The separation from motor vehicle traffic was key to making the street more desirable to walk and wheel along, while increasing safety by separating users by their travel speed. Another important consideration is the added buffer space between the roadway and bikeway, which protects users from close vehicle passes and from someone opening the door of a parked car.
- c. Upgrading of overhead pedestrian flashers (pedestrian crossovers) along the corridor, and the addition of a midblock rapid rectangular flashing beacon (RRFB) crossing in the main commercial core area. At two intersections with overhead pedestrian flashers, 43 Street and 52 Street, a second overhead flasher arm was added for increased accessibility, so that people could choose the more convenient side of the intersection to cross Bowness Road.
- d. Curb extensions on the main street and cross streets at intersections and marked crosswalks across the main street. These measures calm vehicle speeds, reduce pedestrian crossing distance, and improve visibility of crossings and of people at crossings. At a typical intersection, pedestrian crossing distance

was reduced by over 50% when crossing parallel to Bowness Road (from 14 metres down to 6.5 to 7.0 metres) and by 48% when walking or wheeling across Bowness Road (from 21 metres down to 11 metres).

- e. Calgary’s first protected intersection at Bowness Road and Home Road, including connections to the existing painted bicycle lanes along Home Road. The protected intersection allows people on bicycles to make right or left turns at the intersection with reduced conflict points, increasing the convenience and safety of transitioning between the two roadways. The learnings from this intersection design can be applied to complex locations in other municipalities and locations within Calgary to enhance accessibility and crossings for people of all ages and ability.



IMAGE 6. PROTECTED INTERSECTION AT BOWNESS ROAD AND HOME ROAD - BEFORE (TOP) AND AFTER (BOTTOM)

- f. Piloting of accessibility measures including additional tactile elements at bus stop / cycle track interface. The City of Calgary is working internally to improve these treatments and construction methods through various projects around the City, with input from people with vision loss and other accessibility challenges. The tactile elements include tactile plates, tooled grooves, curb walls and mountable curb buffer.
- g. Enhanced winter maintenance and streetlighting along the entire corridor, including pedestrian scale

lighting in the commercial core area and a higher level of lighting at intersections. Calgary’s goals for a connected 5A Cycling Network (Always Available for All Ages and Abilities) includes “Improving Visibility” as a key principle. Another principle is “Make it Reliable”, which is achieved on this project by prioritizing the corridor for snow clearing of roadways and pathways within 24 hours of a snowfall event.

- h. Installation of bicycle and accessibility friendly grates over stormwater trench. The grates have a non-slip surface and gaps that are narrow so that wheels do not get caught. The grates were also customized in size and weight to accommodate the maintenance needs of City business units.

The following table shows the change in space allocation, within the right-of-way, before and after the corridor upgrades to Bowness Road:

Street Elements	ALLOCATION OF RIGHT-OF-WAY	
	Before (%)	After (%)
Vehicle - Travel Lanes	44%	33%
Vehicle - Parking	19%	7%
Pedestrian Travel	11%	19%
Bicyclist Travel (dedicated space)	0%	19%
Landscaped Areas	13%	15%
Other (ie. curb, gutter, asphalt or concrete boulevard, setback, etc.)	13%	7%

TABLE 1. SPACE ALLOCATION OF BOWNESS ROAD

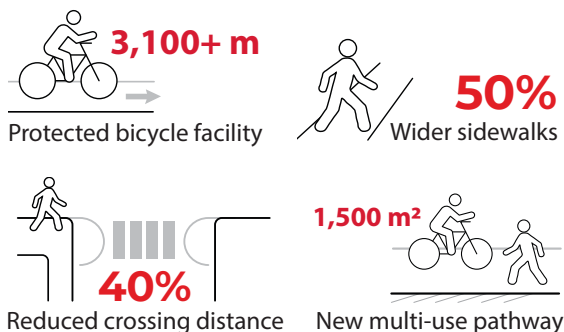
Other improvements to Bowness Road through this project included planting street trees, ornamental grasses, perennials, piloting urban seed mixes, improving drainage and piloting low impact development (LID) stormwater features with bioretention areas. The project also included reconstructing transit stops with expanded waiting areas, installing street furniture such as benches, bicycle racks and garbage receptacles, and completely resurfacing Bowness Road in the project area.

Reconstruction of the corridor was substantially completed and fully opened to the public in November 2021, ahead of schedule, after 1.5 years of construction.

OUTCOMES

With the transformed street now open to the public, the following outcomes have been achieved or will be monitored, with the overall goals and vision in mind of creating a street that welcomes everyone:

- **Improved comfort and safety** for everyone along the corridor whether they are traveling through, visiting or enjoying the street and surrounding amenities. This has been achieved through a people-first design that provides separation of spaces by travel mode and speed, more visibility between people at intersections, slower vehicle speeds, and better lighting.
- **Increased attractiveness** for people to walk or wheel along the corridor. The project team has already observed more individuals and families (with young children) walking, scootering and bicycling, even before the corridor reconstruction was fully complete.
- **Increased redevelopment** spurring the economic and social benefits of this project, which are just starting to be realized as the community continues to redevelop and densify. As more people and businesses move into this community, the environmental benefits of Bowness Road as a more efficient mobility corridor will be realized with more people moving by active modes.

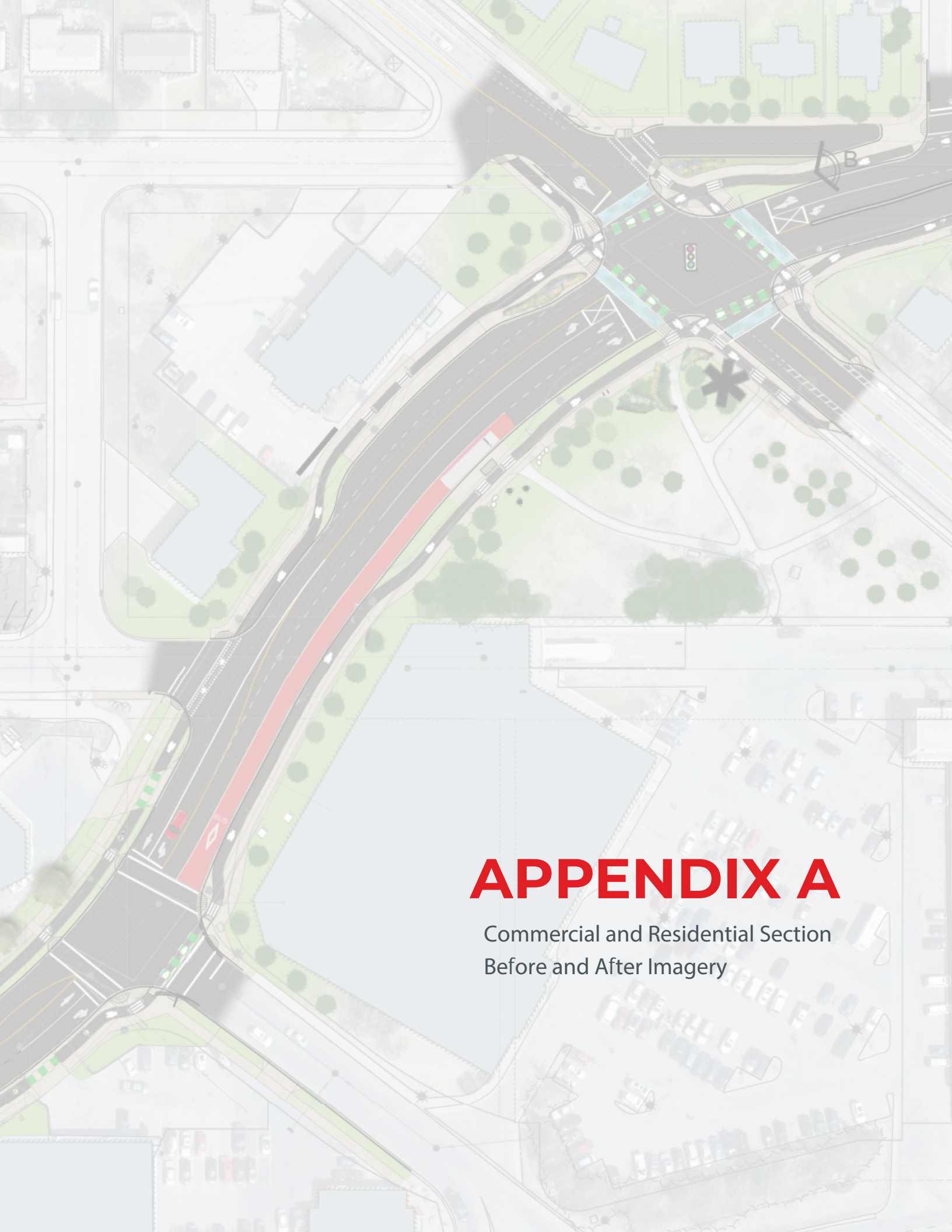


Over the next two years the City of Calgary plans to undertake a metrics program to track success in meeting the project objectives. Some of these metrics, like increased sidewalk width and number of trees, have already been realized. Others such as business satisfaction, air quality, and diversity of user groups will be evaluated over several years in comparison to baseline data before project construction. This information can be shared with other municipalities to build public support and integrate lessons learned for future transportation corridor projects.

This project delivered innovation in design interventions and delivery of project that are relevant and transferable to other Canadian and North American cities.

- The raised bikeway and intersection configurations could be implemented in dozens of other corridors just within Calgary, as demand grows for these more protected facilities.
- The adaptation of the cross section along the corridor to maximize space for creating a more comfortable environment to travel through with increased landscaping and allowing for underutilized parking to transition over time.
- The focus on 4-season maintenance and 24-hour visibility is a key element in encouraging active transportation as a realistic and attractive travel choice. As a winter City, extra consideration is being taken on the maintenance of the bikeway and ramps over winter and in the spring. Sections that were completed during the first construction season were monitored over the winter to consider better approaches for snow clearing and storage for the future.
- The accessibility, stormwater, and landscaping pilot treatments also provide lessons for other jurisdictions as our industry continues to evolve and work towards creating more inclusive and climate-resilient cities.
- The different City departments working together to balance competing needs within the right-of-way, and on operation, maintenance, and lifecycle considerations in the design of the different spaces along the corridor.
- The City project team working in collaboration with community partners on implementation and maintenance of special features along the corridor that include holiday lighting, gateways and planters.

We would like to also take this opportunity to recognize the entire project team who worked so diligently together to complete this major infrastructure project ahead of schedule and under budget. Urban street reconstructions can be very disruptive to communities. Recognizing this, the team took extra care from the outset and collaborated well on project staging, detours, pedestrian accommodation, and efficient completion of the work. People walking and cycling are not often accommodated during construction, extra efforts were made to ensure dedicated space for active modes during construction and included such measure as temporary walkways and ramps, custom signage, and temporary floating bus stops.



APPENDIX A

Commercial and Residential Section
Before and After Imagery

COMMERCIAL ZONE-BEFORE:



COMMERCIAL ZONE-AFTER:



RESIDENTIAL ZONE-BEFORE:



RESIDENTIAL ZONE-AFTER:



POST IMAGES - COMMERCIAL ZONE



POST IMAGES - COMMERCIAL ZONE



POST IMAGES - RESIDENTIAL ZONE



POST IMAGES - RESIDENTIAL ZONE



POST DESIGN - TYPICAL CROSS SECTIONS

- Travel Lane with Standard Curb
- Roadway / Bikeway Buffer
- Asphalt Bikeway
- Bikeway / Sidewalk Buffer
- Sidewalk



NEW BOWNESS ROAD CROSS-SECTION FOR ARTERIAL STREET SECTION, INCLUDING UNI-DIRECTIONAL CYCLE TRACK AND BUFFER ZONES

- Travel Lane
- Parking Lane with Standard Curb
- Parking Door Zone / Bikeway Buffer
- Asphalt Bikeway
- Bikeway / Sidewalk Buffer
- Sidewalk



NEW BOWNESS ROAD CROSS-SECTION FOR NEIGHBOURHOOD BOULEVARD (RESIDENTIAL) SECTION, INCLUDING UNI-DIRECTIONAL CYCLE TRACK AND BUFFER ZONES