



Major Bike Routes Project

Strathcona and Downtown
Facility Type Evaluation Overview
April 2015

Introduction

The City of Edmonton is planning for the upcoming construction of two major bike routes in the central part of Edmonton. The Strathcona Route will connect the communities of Strathcona, Garneau and the University area and the Downtown Route will connect the communities of Downtown, Oliver, Westmount and Glenora. The implementation of quality cycling infrastructure provides connections to the places people want to go and encourages cycling as a safe and healthy alternative for travelling around the city.

The development and implementation of bicycle infrastructure in Edmonton has been ongoing since Council approved the Transportation Master Plan *“The Way We Move”* and the Bicycle Transportation Plan in 2009. In June 2014, Council provided additional direction on bicycle infrastructure implementation. This direction focussed efforts on developing higher quality bicycle infrastructure in areas where there is existing ridership and where there is greater potential to expand bicycle ridership. Along with providing direction to focus on developing higher quality infrastructure, Council approved an expanded public engagement process that gives the public more opportunities to provide input and feedback on bicycle route locations and types of cycling infrastructure.

This direction has been applied to the major bike routes currently proposed for the Downtown and Strathcona areas. The initial stage of the project involved evaluating the potential route options within each area to determine which route would be most suitable for a major bike facility. This stage of the planning process identified 102 Avenue and 83 Avenue as the preferred bike route corridors. The subsequent stage of the project focused on developing two design options for each route: a bike boulevard treatment that calmed traffic and provided a shared space for cyclists and drivers, and a cycle track (protected bike lane) option that provided a physically separated facility for cyclists along the corridor.

This report summarizes the detailed evaluation of the design options and recommendation for developing a single concept plan for each route.

Design Options and Evaluation

Design options for each route were presented to the public at a series of public meetings in November 2014, with a repeat 83 Avenue meeting held in early January 2015 to provide the public with a second chance to review the plans as a major snow event in November may have prevented some people from attending the November meeting.

At each meeting, project staff gave a formal presentation on the two design options and members of the public were able to review and comment directly on design plans displayed throughout the meeting room. Project staff circulated and answered any questions or concerns. The public engagement consultant for the project, Soles and Company, collected feedback and summarized it in a report.

Once the public consultation on the design options was completed, project staff undertook a detailed analysis of the designs. This analysis took into consideration key issues identified during the public consultation, including design consistency, safety, year-round operability and accessibility. Public feedback indicated that people liked the traffic calming elements associated with the bicycle boulevard and felt it built on the existing character of the streets, however the cycle track option was considered very appealing because it would provide a more comfortable experience for a wider range of riders. The public also felt that the cycle track option was a better option as it provided a dedicated space for cyclists separating them from motor vehicle traffic and pedestrians.

The evaluation also took into consideration key issues identified by internal stakeholders at the City of Edmonton including integrating the bike facility with existing roadway operations, transit, waste management and emergency response requirements along the corridors. Maintenance was another key issue associated with the design evaluation and addressed impacts of winter maintenance, snow storage areas and interaction between the adjacent roadway winter maintenance requirements and the bike facility winter maintenance requirements.

The designs were assessed using nine evaluation criteria developed using the route location evaluation criteria, industry best practices as well as the aforementioned public input. The evaluation criteria included safety and operational metrics to measure the impacts associated with the design options. For the assessment, each criterion was evaluated on a scale of 1 (worst) to 5 (best) using an objective evaluation process. The evaluation was completed for different segments of the route as well as for the route in its entirety to determine the best design fit based on locational attributes along the corridor and for the corridor as a whole.

Evaluation Summary

Strathcona Route

83 Avenue is a continuous east-west roadway through the Strathcona and Garneau neighbourhoods and provides connections to key destinations in the area including the Farmers' Market, Whyte Avenue and the University. The existing roadway functions as a local road providing access to adjacent properties and on-street parking. The existing cross-section varies along the corridor but is generally wide enough to accommodate one or two motor vehicle travel lanes, one parking lane - although there are some blocks with parking lanes on both sides of the corridor - and includes boulevard space that accommodates sidewalks and landscaping.

Members of the public and stakeholders provided input on both the cycle track and the bicycle boulevard designs. A significant amount of feedback was collected during the consultation process and some of the key items that were identified included providing a safe facility for all roadway users, consistency of design, and developing a bicycle facility that could be maintained year-round. Impacts on parking and vehicle travel along the corridor were also emphasized as considerations.

Figure 1 illustrates the analysis by criterion for the entire 83 Avenue route for each design option. Figure 2 illustrates the analysis of the overall score for each route segment and overall score for the entire 83 Avenue route for each design option.

From Figure 1, the analysis of the 83 Avenue route illustrates that the cycle track rates significantly better than the bicycle boulevard in the the perceived safety and maintenance criteria. Due to the narrowness of the existing corridor, the cycle track design does have a greater impact on parking and freight/loading zones compared to the bicycle boulevard. When all the criteria are considered and the scores based on the analysis are summed, the cycle track design had an overall score of 37.4, which was higher than the bicycle boulevard design overall score of 34.0 (as shown in Figure 2).

When the 83 Avenue route is analyzed by segment, the cycle track option also scores higher than the bicycle boulevard option except for the segment east of 99 Street where the bicycle boulevard has a higher score. The primary reasons associated with this differentiation for the segment between 99 Street and 95A Street are the lower traffic volumes on this roadway and reduced impacts with parking and loading zones.

Figure 1: 83 Avenue Design Option Analysis by Criterion for the Entire Route

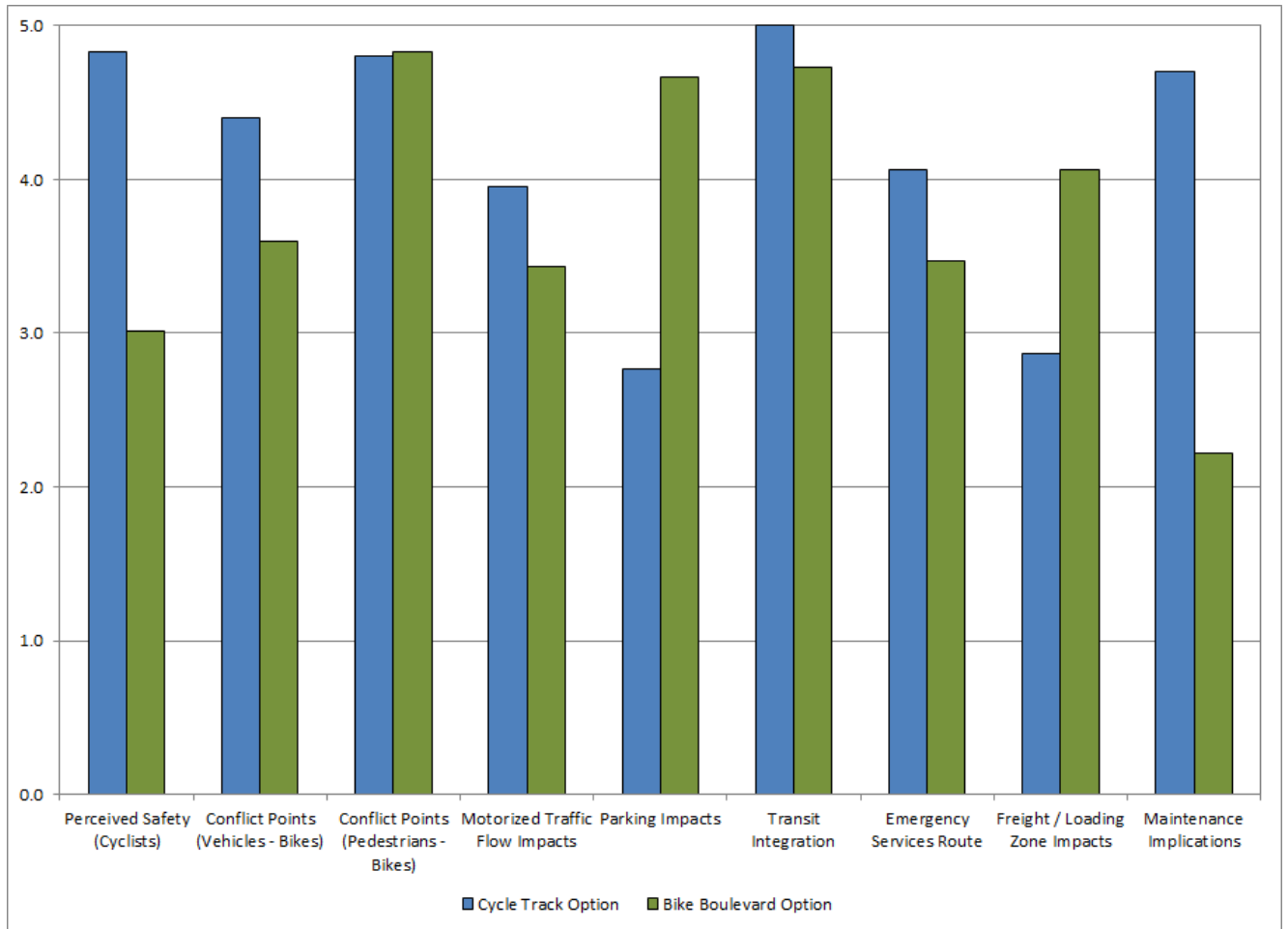
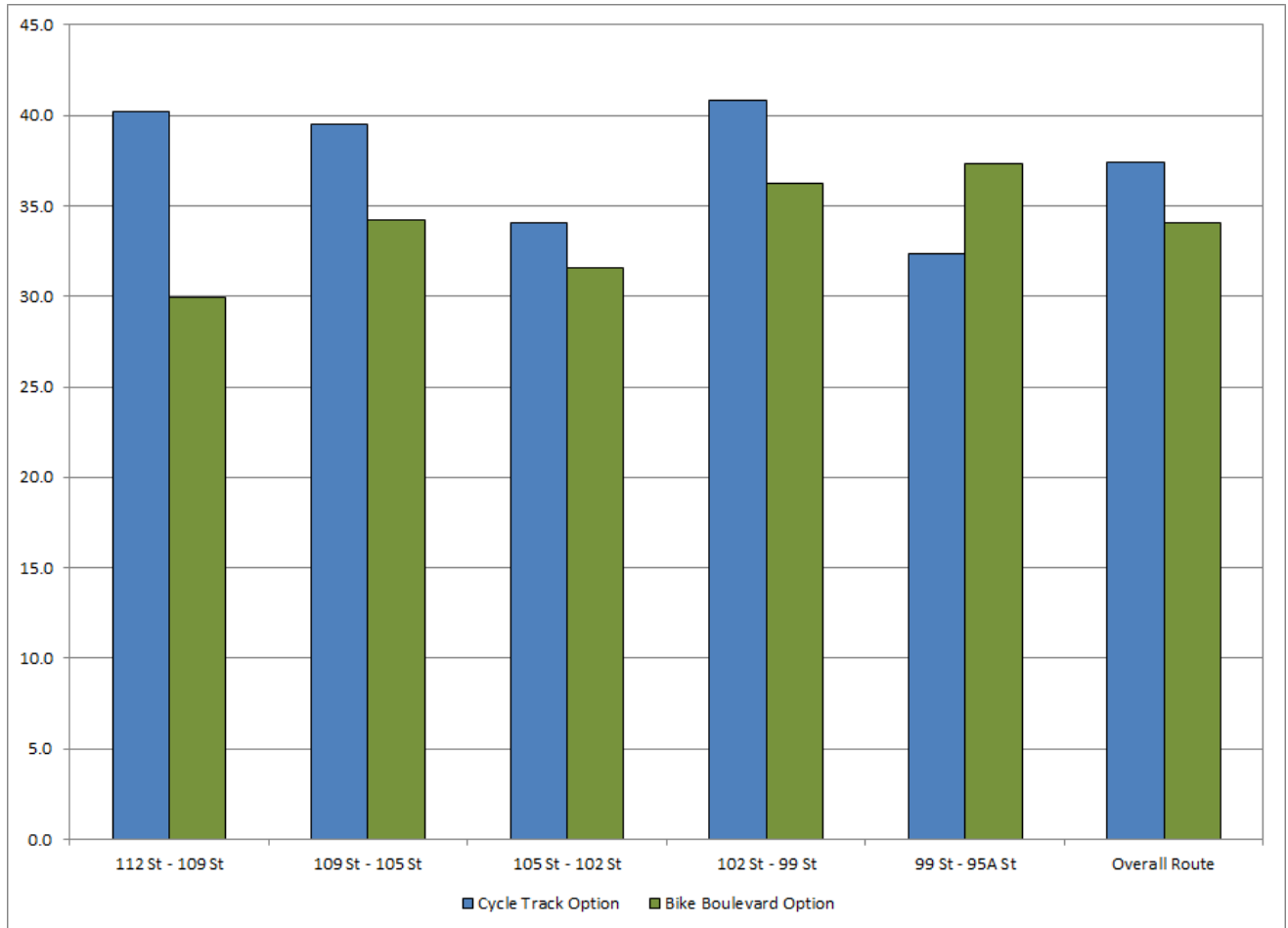


Figure 2: 83 Avenue Design Option Analysis by Segment and for the Entire Route



Strathcona Route Design Direction

Based on the the public engagement feedback and the results of technical analysis, a single concept plan will be developed for the 83 Avenue route with the protected bike lane (cycle track) being implemented between 111 Street and 99 Street and the bicycle boulevard design being implemented between 99 Street and 96 Street. A shared-use pathway will also be included to connect to the 83 Avenue route along 95A Street from the bridge across the Mill Creek Ravine along Whyte Avenue.

Downtown Route

102 Avenue is an east-west roadway that connects areas west of the Groat Ravine through the 124 Street/High Street area and into Oliver. The bicycle route along this corridor will extend east of 111 Street through Raitown connecting into Downtown in conjunction with construction of the Valley Line LRT. Planning and design of the Downtown portion of the 102 Avenue major bike route will be occurring once the design from the Valley Line LRT is confirmed.

The existing roadway can be split into three functional sections. The section west of 124 Street operates as an arterial roadway, the section between 124 Street and 121 Street operates as a collector roadway, and the section east of 121 Street operates as a local roadway. The existing cross-section varies along the corridor but typically includes motor vehicle travel lanes, parking lanes where they can be accommodated (excluding the arterial roadway section), and boulevard space with sidewalks and landscaping.

Public and Stakeholder input identified both positive and negative aspects of introducing a cycle track or a bicycle boulevard design to this roadway. Some of the key items identified during the consultation included providing a safe facility for all roadway users, ensuring that vehicle travel on the arterial roadway section was not interrupted and that year round maintainability of the bicycle facility should be taken into consideration.

Figure 3 illustrates the analysis by criterion for the entire 102 Avenue route for each design option. Figure 4 illustrates the analysis of the overall score for each route segment and overall score for the entire 102 Avenue route for each design option.

Figure 3 illustrates that the cycle track rates significantly better than the bicycle boulevard in the perceived safety, transit integration and maintenance criteria. The bicycle boulevard had minor advantages related to conflict points with pedestrians because the cycle track option included a pedestrian and cyclist shared-use path west of the Groat Road Bridge.

When all criteria are considered, the cycle track design option for 102 Avenue had a score of 37.4 which was significantly higher than the 29.2 score for the bicycle boulevard design option as shown in Figure 4. In addition to the overall corridor analysis, analysis for each segment of the 102 Avenue route revealed the cycle track design option scored higher for each segment as well.

Figure 3: 102 Avenue Design Option Analysis by Criterion for the Entire Route

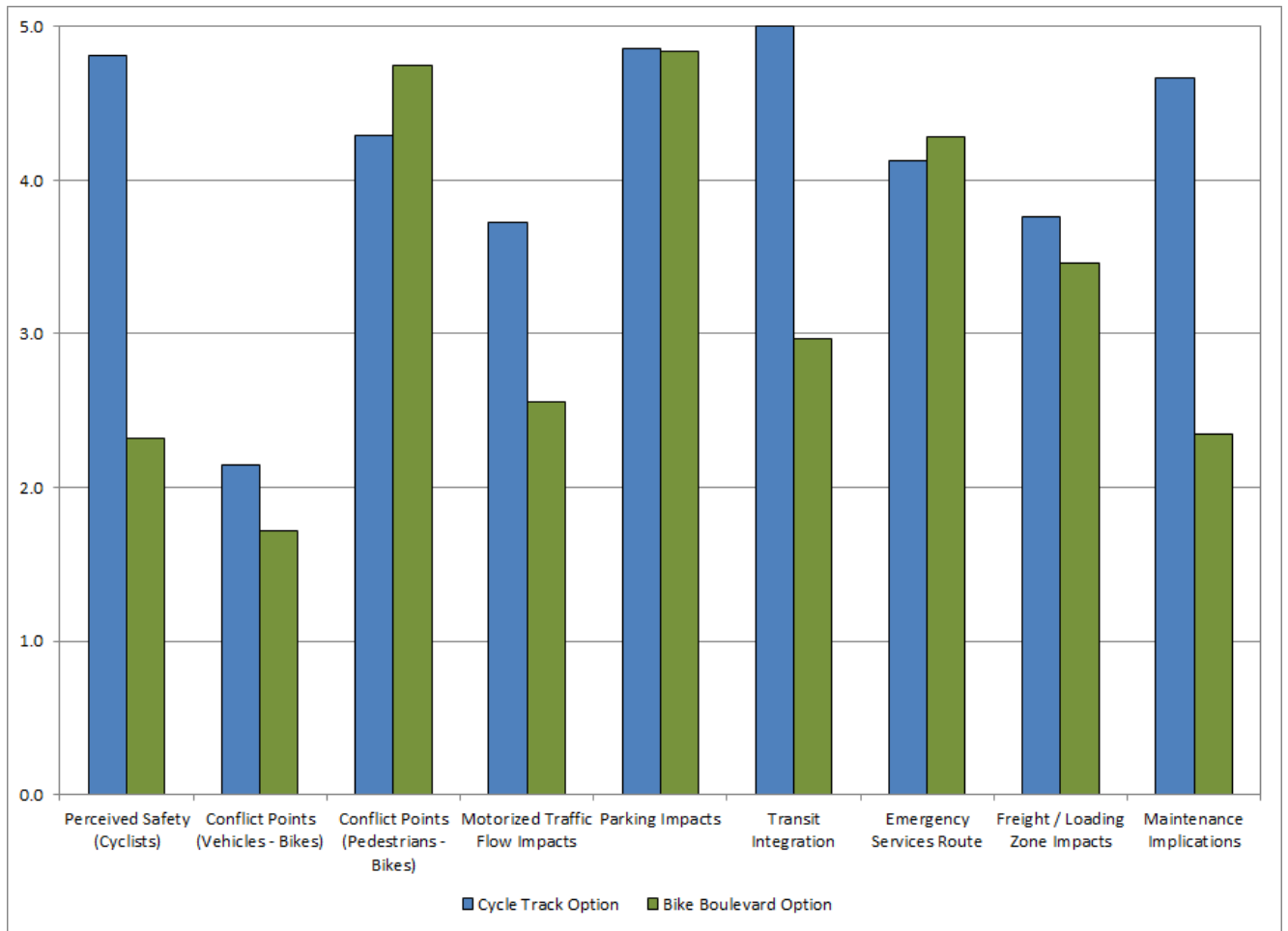
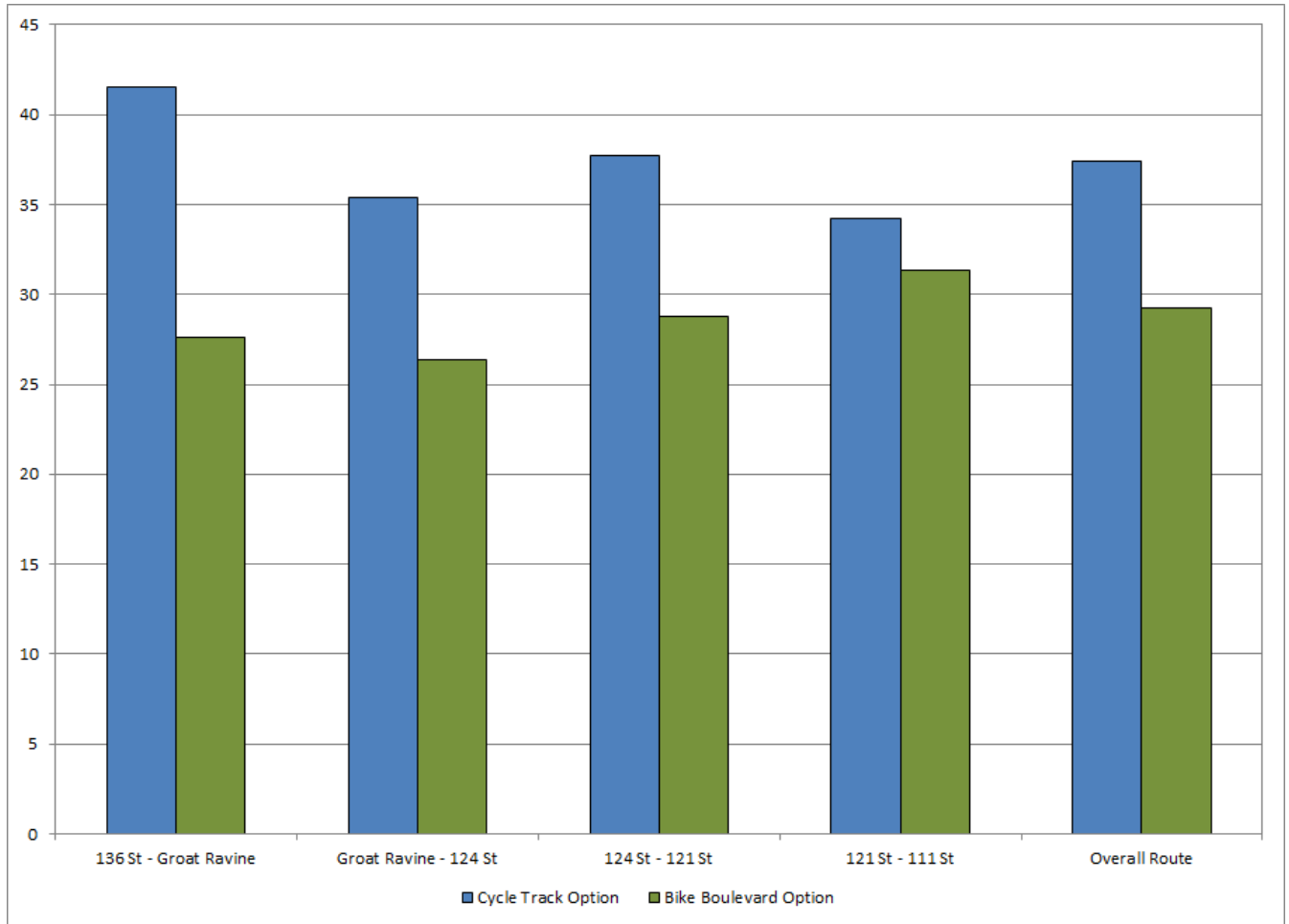


Figure 4: 102 Avenue Design Option Analysis by Segment and for the Entire Route



Downtown Route Design Direction

Based on the the public engagement feedback and the results of technical analysis, a single concept plan will be developed for the 102 Avenue route based on the cycle track design. This includes implementation of a shared-use pathway on the north side of 102 Avenue between 136 Street and the Groat Ravine and protected bike lanes on 102 Avenue between the Groat Ravine and 111 Street.