

# BUS RAPID TRANSIT ROUTE AND CONFIGURATION FOR NUTANA

## ISSUE

The City of Saskatoon is working towards implementing a Bus Rapid Transit (BRT) system to improve transportation options in the community. Because of their unique features, some areas of Saskatoon, such as Nutana, require specific solutions in order to be integrated with the BRT system. What routing and infrastructure configuration for the BRT system within Nutana can best achieve the Plan for Growth goals for transit and city-building, while balancing the needs of those most directly affected?

## BACKGROUND

### History

In 2016, Saskatoon City Council approved “The Growth Plan to Half a Million.” The plan charts a course for long-term growth and revitalization that balances and promotes quality of life, sustainability, and economic development.

A key element of the Plan for Growth is rethinking the way in which the City provides transportation options to existing and future residents. As Saskatoon grows to 500,000 people, it will require a variety of transportation options to ensure the safe and efficient movement of people and goods throughout the city.

Given this objective, the Plan for Growth includes a “Transit Plan” that aims to redefine public transit in Saskatoon. The BRT is intended to form the backbone of a more modern transit system and is a catalyst for the corridor growth component of the Plan for Growth.

The proposed transit plan focuses primarily on building a BRT system and identifies changes needed to the current transit system to support high-frequency, direct service along the city’s major corridors. For the system to be successful, Saskatoon needs to reconfigure its transit network around the BRT lines, and this means fundamental changes in how the transit system operates.

On November 20, 2017 City Council approved a “preferred configuration and conceptual network” for the BRT system as the basis for further engagement and design. One component defined in the preferred configuration is BRT runningways. Runningways include buses moving in mixed traffic and dedicated lanes.

The preferred configuration included dedicated lanes as the recommended runningway configuration for BRT along select short road sections, such as Broadway Avenue. In June 2018, City Council heard and considered input from stakeholders regarding the proposed BRT configuration. During that meeting, some key stakeholders from the Nutana Area expressed concerns about having dedicated BRT lanes along Broadway Avenue. Refer to Appendix 1 for more details on public engagement results.

### **Current Status**

As approved by City Council, Administration has proceeded with functional planning and detailed design for most components of the system. To date, however, this process has excluded key areas, such as Nutana and the Downtown, due to concerns generated by the initial stakeholder and public engagement process.

Before functional planning and detailed design can be finalized for the complete BRT system, enabling further stages of implementation to proceed, City Council will be required to make decisions on how best to configure the specific BRT routes and configurations to meet the overall objectives of the Plan for Growth Transit Plan.

One such decision focuses on choosing a BRT route and infrastructure configuration for Nutana. The Administration has consulted with stakeholders and has evaluated potential route and infrastructure configuration options to ensure the Nutana routing meets the goals and objectives of the Plan for Growth and balances the needs of local stakeholders.

### **OPTIONS**

This section provides five potential options that attempt to address how to implement BRT in the Nutana area of Saskatoon. The options range from bypassing Broadway Avenue to the installation of dedicated lanes on Broadway Avenue.

Each option is evaluated based on how well it supports the City's strategic objectives, growth plan principles, and sustainability principles (including CPTED – Crime Prevention Through Environmental Design). The options have also been evaluated on more technical matters including their accessibility, feasibility, functionality, and efficiency. There are no direct positive or negative environmental implications with any of the options, environmental benefits accrue from the entire project.

The options analysis excludes Victoria Avenue and thus, the Traffic Bridge as a potential BRT route option. An evaluation of this option determined that it would be technically infeasible for a properly functioning BRT to operate along this roadway, particularly for safe, reliable winter operations. The Victoria Avenue/Traffic Bridge route is feasible for spring, summer and fall operations, on a temporary basis as a designated detour. The components of the BRT system for all options are listed in Appendix 2. A status quo option was considered but deemed infeasible since direction has been given to plan and design the rest of the BRT system. Status quo transit routing and infrastructure in Nutana, combined with a BRT system outside of the area, would present significant operational challenges due to the gap in infrastructure. Several of the options described below propose relatively small changes to infrastructure while others require more significant infrastructure investments.

#### **Option 1 - Bypass Broadway - 8<sup>th</sup> Street to Idylwyld Drive**

This option implements a BRT route along 8<sup>th</sup> Street to Idylwyld Drive. The BRT would operate mixed flow, meaning no dedicated lanes. It avoids Broadway Avenue completely and travels in an east-west direction heading along 8<sup>th</sup> Street and into

Downtown across the Senator Sid Buckwold Bridge. To implement this option, a pair of station platforms would be constructed near the intersection of Broadway Avenue and 8<sup>th</sup> Street to provide access to Broadway Avenue and local transit routes. Additionally, a pair of stations would be introduced near the 8<sup>th</sup> Street and Lorne Avenue intersection to provide connectivity to the west end of the corridor. Appendix 2 includes an illustration of this option.

Of the 961 people who participated in an engagement event, 170 preferred this option. The estimated capital financial implications for this option are \$3.2 million. The costs are primarily related to the construction of BRT stations along this portion of the route. There are some negative social implications with this option as a preliminary CPTED review found this option may lack “natural surveillance” to ensure the safety and security of users. This option would require the greatest degree of change in land use and investment in public realm in order to establish a transit-supportive environment around the stations – at both Broadway Avenue and Lorne Avenue.

### **Advantages:**

- Provides good system reliability in terms of on-time performance both in the short and long term.
- Minimal construction impacts to Broadway area businesses and residents.
- Minimal, if any, change to Broadway Avenue road infrastructure.
- Improved signal coordination along 8<sup>th</sup> Street.
- Some potential to support investment in corridor growth along Broadway Avenue but would likely be limited to one to two blocks immediately north and south of 8<sup>th</sup> street.
- Addition of 19 on-street parking stalls on Broadway Avenue, primarily through the removal of some existing transit stops.

### **Disadvantages:**

- Reduces transit access and coverage for Broadway Avenue between 10<sup>th</sup> Street and 12<sup>th</sup> Street.
- Has less natural surveillance from surrounding land uses than the Broadway route.
- Sub-optimal connection to a potential 3<sup>rd</sup> Avenue BRT line.
- May be an impediment to achieving transit ridership targets.
- Provides limited or no opportunities to improve public amenities and streetscaping on Broadway Avenue.
- Adjacent land use is less supportive of transit.

### **Option 2 - Broadway Avenue Mixed Flow**

This option proposes to implement a BRT system along Broadway Avenue in a north-south direction from 8<sup>th</sup> Street to 12<sup>th</sup> Street. It proposes to construct two pairs of BRT

stations on either side of Broadway Avenue at 12<sup>th</sup> Street and at 9<sup>th</sup> Street. Appendix 2 provides an illustration of this option.

Under this option, there are no dedicated BRT lanes along Broadway Avenue, but Transit Signal Priority measures would be installed in traffic signals. The proposed BRT would “mix” with motor vehicle and cycling traffic that typically travel along Broadway Avenue, as well as vehicles entering and leaving on-street parking spaces.

Of the 961 people who participated in an engagement event, 83 preferred this option. The estimated capital financial implications for this option are \$3.7 million. The costs are primarily related to the construction of BRT stations along this portion of the route. There are some positive social implications with this option, as a preliminary CPTED review found this option may provide a higher degree of natural surveillance.

### **Advantages:**

- Provides the highest level of coverage (from among the options) for Broadway Avenue with the installation of two station locations near the north and south ends of the commercial “main street” area of the street.
- Strong potential to support investment in corridor growth along Broadway Avenue.
- Improved signal coordination along Broadway Avenue.
- Provides good natural surveillance to improve safety and security for users.
- Addition of 19 on-street parking stalls on Broadway Avenue, primarily through the removal of some existing transit stops.

### **Disadvantages:**

- Reduces short- and long-term system reliability and on-time performance due to no dedicated BRT lane.
- Requires some change to Broadway Avenue infrastructure for stations and Transit Signal Priority.
- Produces construction impacts on area businesses and residents.
- Provides limited opportunities to enhance public amenities and streetscaping.

### **Option 3 - Broadway Avenue Deferred Configuration Decision**

This option proposes to confirm Broadway Avenue as the route choice but defers a final decision on a permanent BRT design configuration on Broadway (Mixed Traffic or Dedicated Lanes) to a future date. This will keep the level of investment in infrastructure to the minimum level necessary to operate a BRT. All local bus routes would continue to use the current stops on Broadway Avenue. The components included under this option are as follows:

- Communication cable installations to each intersection.
- Transit signal priority (TSP) measures at each intersection.
- A single curbside stop for the Blue Line near the proposed dedicated station between Main Street and 9th Street.

This option enables a short-term solution to allow planning, design and overall implementation of the BRT system to proceed subsequent to future City Council approval. It ultimately defers a final decision on a permanent BRT design configuration through Nutana.

Public engagement input is not provided on this option as it was developed by the Administration after the engagement was conducted to address some of the feedback. In terms of design and function, this option could be considered most like a limited version of Option 2: Broadway Avenue Mixed Flow. The estimated capital financial implications for this option are \$500,000. The costs are primarily related to the installation of communication cables and transit signal priority measures along this portion of the route.

### **Advantages:**

- Provides good coverage for Broadway Avenue.
- Minimal construction impacts to area residents, businesses and institutions.
- Signal coordination along Broadway Avenue.
- May support investment in corridor growth along Broadway Avenue.
- Enables functional benefits of BRT at minimal investment.
- Flexible to enable future decision on infrastructure configuration and implementation timing.

### **Disadvantages:**

- Reduces short-term system reliability and on-time performance.
- May impact ability to achieve transit ridership targets.
- Provides limited or no opportunities to update public amenities and streetscaping on Broadway Avenue.

### **Option 4 - Broadway Avenue Phased Implementation**

This option proposes to confirm Broadway Avenue as the final route choice, and to confirm the long-term configuration on Broadway as either Mixed Traffic or Dedicated Lanes while delaying the implementation on Broadway until a future date. This will keep the level of investment in infrastructure to the minimum level necessary to operate a BRT. All local bus routes would continue to use the current stops on Broadway Avenue. The components included under this option are the same as those listed in Option 3.

This option enables a short-term solution to allow planning, design and overall implementation of the BRT system to proceed subsequent to a future City Council decision on the timing for implementation.

Public engagement input is not provided on this option as it was developed by the Administration after the engagement was conducted. In terms of design and function, this option could be considered most like a limited version of Option 2: Broadway Avenue Mixed Flow. The estimated capital financial implication for this option is

\$500,000. The costs are primarily related to the installation of communication cables and transit signal priority measures along this portion of the route.

### **Advantages:**

- Provides good coverage for Broadway Avenue.
- Minimal construction impacts to area residents, businesses and institutions.
- Signal coordination along Broadway Avenue.
- May support investment in corridor growth along Broadway Avenue.
- Enables functional benefits of BRT at minimal investment.
- Flexible to enable future decision on implementation timing.

### **Disadvantages:**

- Reduces short-term system reliability and on-time performance.
- May impact ability to achieve transit ridership targets.
- Provides limited or no opportunities to update public amenities and streetscaping on Broadway Avenue.

### **Option 5 - Broadway Avenue Dedicated Lanes**

This option proposes to implement dedicated BRT lanes along Broadway Avenue from 8<sup>th</sup> Street to 12<sup>th</sup> Street. It would run in dedicated lanes constructed in the centre of Broadway Avenue with one centre median BRT station. One station is proposed to be constructed at the intersection of Broadway Avenue and Main Street. Refer to Appendix 2 for an illustration of this option.

Of the 961 people who participated in an engagement event, 143 preferred this option. The estimated capital financial implications for this option are \$2.5 million. The costs are primarily related to the construction of the dedicated lanes and BRT stations along this portion of the route. There are some positive social implications with this option. For example, preliminary CPTED review found that this option provides a high degree of natural surveillance compared to Option 2: Bypass Broadway – Idylwyld Drive to 8th Street.

### **Advantages:**

- Provides very good coverage of Broadway Avenue from 12th Street to 8th Street for area residents, businesses and institutions.
- Offers high reliability in both short- and long-term planning horizons.
- Improved signal coordination along Broadway Avenue.
- Strong potential to support investment in corridor growth along Broadway Avenue.
- Provides significant opportunity to improve public amenities and streetscaping.

### **Disadvantages:**

- Loss of one driving lane for other vehicles.
- Requires substantial change to Broadway Avenue infrastructure.

- Produces short-term construction impacts for area businesses and residents.
- Results in the loss of 14 parking stalls.

### **RECOMMENDATION**

That City Council approve Option 3: Broadway Avenue Deferred Configuration Decision, for the BRT system within the Nutana area.

### **RATIONALE**

All options outlined above are viable and compatible with the proposed BRT network and strategy. Considering all factors, the Administration is recommending Broadway Avenue as the most suitable corridor for BRT, because it is a major destination and is within a 400m walking distance to residential, commercial and retail uses. The BRT corridor would connect approximately 54,000 residents with the businesses and destinations on Broadway Avenue. It also connects directly to Broadway Bridge linking the corridor with Downtown.

Deferring the configuration decision of BRT along Broadway provides some of the functional benefits of BRT without the initial investment and construction impacts. This option provides the opportunity to monitor the impacts of BRT along Broadway to traffic flows, business impacts and transit ridership prior to making a decision on the design configuration.

### **ADDITIONAL CONSIDERATIONS/ IMPLICATIONS**

Once the remaining unconfirmed components of the BRT system are approved by City Council (specifically Nutana and Downtown routing and configuration), the City of Saskatoon can proceed with next steps of implementation. This will include obtaining the proper City Council approvals, through future reports to submit the project for federal and provincial infrastructure funding under the Public Transit Stream of the Investing in Canada Infrastructure Plan. The decision on the Nutana BRT route configuration represents a key element of the overall investment required to implement the BRT.

To offset the costs associated with constructing and implementing the BRT in Saskatoon, the City is working with federal and provincial governments on potential funding for various infrastructure projects. The BRT is an excellent candidate project for federal and provincial funding under the Investing in Canada Infrastructure Plan (ICIP). If successful under the ICIP, the City would be required to cover almost 27% of total eligible costs, while the balance would be covered by the governments of Canada and Saskatchewan.

From a horizontal policy perspective, the City's Official Community Plan Bylaw No. 8769 includes a "Planned Growth Map" that identifies Broadway Avenue as a "Rapid Transit Corridor". However, if City Council adopts Option 2: Bypass Broadway – Idylwyld Drive to 8th Street or any other routing for BRT through Nutana that does not align with this

map, the Administration would need to undertake consequential amendments to the Official Community Plan.

### **COMMUNICATION ACTIVITIES**

Following City Council's decision on this and associated BRT reports, the Administration will update the project web page and Engage page with information about the finalized BRT route, including supporting materials, as well as issue a Media Release on the decision. A "BRT Update" communique will be shared with project stakeholders via established channels, including the Plan for Growth and BRT eNewsletters, and social media.

As detailed design and construction planning proceeds, the project team will work with key stakeholders to address specific design and implementation matters throughout BRT implementation.

### **PUBLIC NOTICE**

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

### **APPENDICIES**

1. Engagement Results
2. BRT Summary and Nutana BRT Route Options

### **REPORT APPROVAL**

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BRT Route and Configuration for Nutana/dh