Bus Rapid Transit Information Sheet

INTRODUCTION

Bus rapid transit (BRT), also referred to as express bus service, is a form of enhanced bus service. The "enhancement" comes from providing a faster travel time between destinations than would be provided through regular bus service or by driving a personal vehicle.

Typical characteristics of express bus service include:

- Frequent, high-capacity service with passenger wait times of less than 10-minutes during peak periods
- High-quality vehicles that are easy to board, quiet, clean and comfortable
- Prepaid fare collection to minimize boarding delays
- Integration with other transportation modes including walking and cycling facilities, taxi services and intercity bus routes
- Improved security for transit users and pedestrians
- Stations include heated shelters, seating and other design features similar to LRT stations
- High Occupancy Vehicle (HOV) lanes for buses, vanpools and carpools

There are multiple ways of providing express bus service. Each comes with its own set of pros and cons and is appropriate in different settings.

REGULAR SERVICE (EXPRESS BUS WITH QUEUE JUMPS)

In this option express buses operate in mixed-traffic with queue jumps at congested points. Within Edmonton, bus advance lights, which allow the bus to leave an intersection four-seconds ahead of the rest of traffic, are used in approximately 65 locations around the city. Some locations include St. Albert Trail north and southbound at Yellowhead Trail and 137 Avenue, Riverbend Road and Haddow Drive, 95 Avenue and Connors Road, and Belvedere LRT and Fort Road.

Pros: This is the lowest-cost option. It also requires the least amount of time to implement.

Cons: This option has the highest travel time. The travel time is also the least reliable of the different BRT options. The travel time is the least reliable as buses would mix with other traffic along the existing roadway, which means travel time is dependent on traffic congestion. This also means travel times would get longer in the future as congestion increases with traffic growth.

ENHANCED SERVICE (EXPRESS BUS LANES IN MIXED TRAFFIC)

This option uses a blend of express bus services methods. Some sections of the route would have mixed-traffic bus service (as in the express bus with queue jumps option), while other sections would have curbside bus lanes and/or a dedicated busway.

By blending methods, this option aims to balance cost and time to implement the service, as well as travel time and traffic congestion impacts. Local examples include 97 Street bus service from Downtown to 137 Avenue, and 109 Street from 61 Avenue to Whyte Avenue, where in the peak hour dedicated transit lanes are provided within key segments.

Pros: Provides a balance of the Regular and Premium service level options, and provides flexibility to use dedicated bus lanes where land is available, and mixed traffic operations elsewhere.

Cons: Sections with mixed running traffic creates uncertainity in bus travel times as buses can be impacted by traffic congestion.

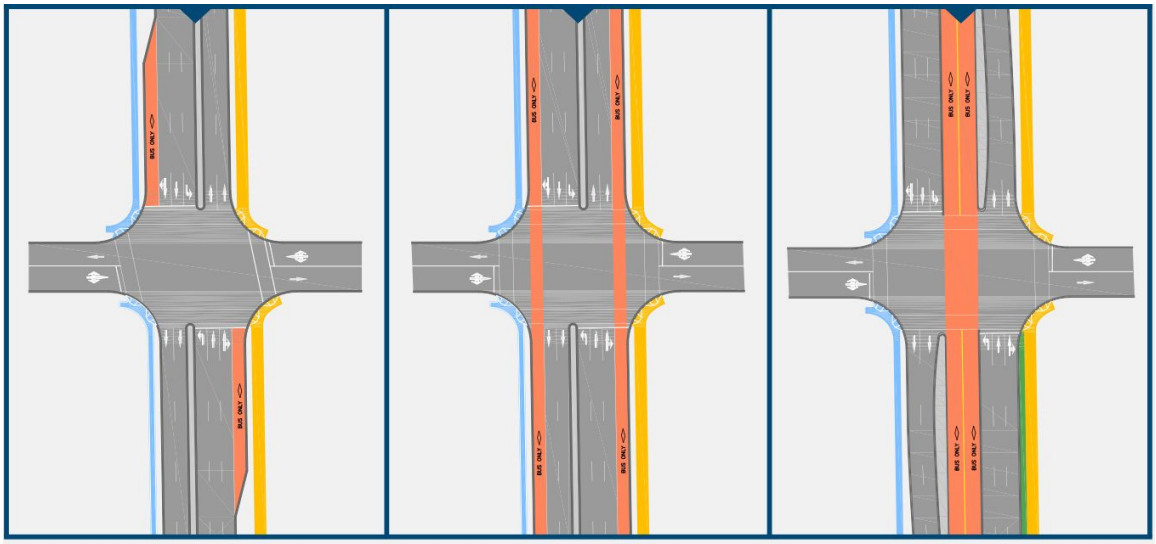
PREMIUM SERVICE (EXPRESS BUS IN DEDICATED LANES)

In this option a new two-lane dedicated busway is created. There is also the possibility in this option to have the service operate with Transit Signal Priority, similar to Urban LRT operations. While there are local examples of lanes dedicated for buses, bicycles and taxis (such as the Belgravia bridge and Fox Drive), there are no examples of lanes dedicated exclusively for buses in Edmonton

Pros: Travel time is the fastest in this option. Traffic impacts are generally reduced due to the dedicated busway. If Transit Signal Priority is used, reliability is further increased.

Cons: This is the highest-cost option. It also requires the most amount of time to implement. This option requires roadway widening and reconstruction to accommodate the new two-lane dedicated busway. Land acquisition is typically required. If Transit Signal Priority is used, this option also requires upgrades at signalized intersections.

SAMPLE ROAD CROSS SECTION OF EACH OPTION



Option 1: Express Bus with Queue Jumps

Lowest cost option. Express bus travels in mixed traffic with queue jumps at key intersections.

Option 2: Express Bus Lanes in Mixed Traffic

Higher cost than option 1. Combination of express buses in mixed traffic with queue jumps (similar to option 1) and sections with dedicated bus lanes so that buses can avoid congestion.

Option 3: Express Bus in Dedicated Lanes

Highest cost and fastest transit service compared to Options 1 and 2. Express bus travels in dedicated lanes separated from traffic.