

# B.C. Community ROAD SAFETY TOOLKIT

## Module 1: Protecting people walking and cycling

### Bicycle Boxes and Two-stage Left-turns, continued

#### Studies have shown that:

- Bicycle boxes can reduce the overall number of conflicts between cyclists and drivers at intersections and increase drivers' yielding behaviour to cyclists.

#### Best results occur when:

- Both cyclists and drivers are aware of the purpose of bicycle boxes and how to use them, which requires public education;
- The bicycle lane leading up to the bicycle box is sufficiently long to allow cyclists to safely filter through to the front of the queue;
- The bicycle box itself is large enough for cyclists to move away from drivers and to feel comfortable using the box; and
- Bicycle boxes are used in conjunction with advance stop lines (page 6).

## Safe Bus Stop Placement and Design

### Description

The bus stop is the first point of contact between the passenger and the bus service. Designing safe bus stops requires appropriate spacing, placement and layout of the stops. This can help reduce the risk of crashes, improve personal security for transit users and improve the transit system's efficiency.



### Safe Bus Stop Placement and Design, continued

#### How it Works

Improperly designed bus stops can increase road safety risks by creating visual obstructions between different types of road users. They may also create more complex environments that increase the potential for conflict between road users. Well-designed bus stops help reduce risk by:

- Creating clear sight lines so that all road users can see and react safely to one other;
- Simplifying road user movements or separating those movements through space and time; and
- Reducing transit riders' vulnerability by loading and unloading passengers at the safest locations.

A floating bus stop (also called a bus stop bypass) is an innovative bus stop design that helps reduce crash risks to cyclists by allowing them to pass buses away from motor vehicle traffic. Floating bus stops include a curb extension, as well as a bicycle lane wrapped behind the area where passengers board or step off the bus. This design allows transit vehicle drivers to pull up to the bus stop without blocking the bicycle lane, which would otherwise force cyclists to move to the left of the bus and enter the motor vehicle traffic stream.

#### Studies have shown that:

- There is a strong correlation between the presence of bus stops and crashes involving pedestrians. This may be due to higher volumes of pedestrian traffic, but may also be related to the visual obstructions created by buses. It is therefore important that bus stop design and placement pays specific attention to safety.

#### Best results occur when:

- Bus stops should be well-lit to improve safety and personal security and increase the likelihood of use, especially at night time;
- There is an adequate "landing pad" at the bus stop, which is a stable, level and slip-resistant surface to facilitate passenger boarding and stepping down;
- Information on transit schedules is made available;
- Bus stops provide shelter from inclement weather, excessive heat and direct sun; and
- Careful thought is given to the placement of the bus stop. The following should be considered:
  - ◆ Placing bus stops on the far side of an intersection is the safest option in most cases, as it minimizes the possibility that stopped buses will visually obstruct traffic signals, road signs and crossing pedestrians;
  - ◆ Where a high-volume destination (e.g., a shopping mall or connecting bus route) is located on the near side of an intersection, the safest option may be to position the bus stop nearest to that location. This reduces the need for pedestrians to cross the intersection in order to reach their destination; and
  - ◆ It may be desirable to place bus stops at mid-block locations on very long blocks, especially if there is a popular destination in a mid-block area. To ensure that people who have to cross the road at a mid-block location can do so safely, crosswalks should be positioned such that the bus passes the crosswalk before reaching the stop. This will prevent the bus from obstructing sight lines between pedestrians and drivers.