



# Bloor West Complete Street Extension

Traffic Study Summary for Phase 1

October 2023

# Project Overview & Policy Context

# Project Overview



The **Bloor Street West Complete Street Extension project** aims to make travel safer, more inviting, and attractive for everyone. The project proposes to implement complete street features, including road safety improvements, cycle tracks, and public realm upgrades.

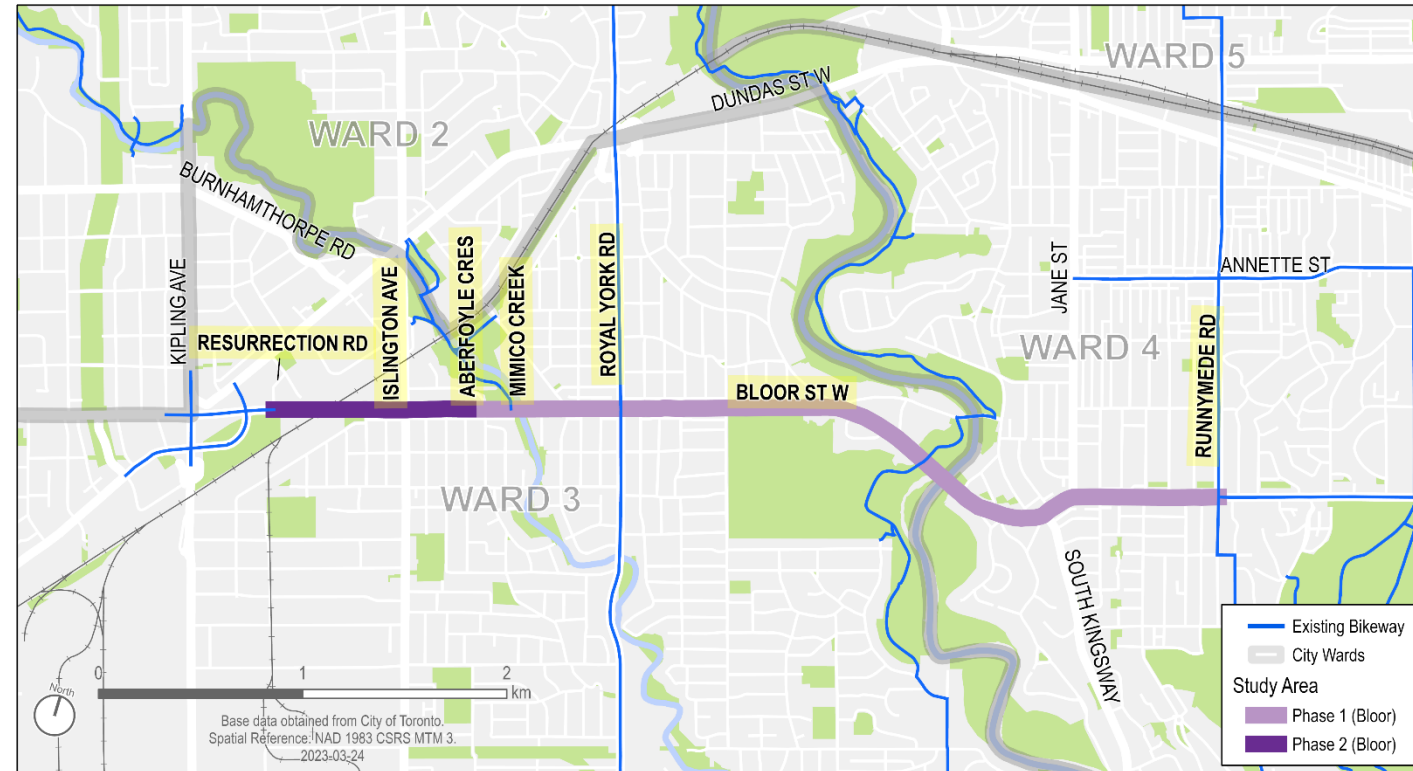
The project is being implemented in two phases:

## Phase 1 – Initiated in 2023:

Bloor Street West from Runnymede Road to Aberfoyle Crescent

## Phase 2 – Initiated in 2024:

Bloor Street West from Aberfoyle Crescent to Resurrection Road



# Policy Background: Complete Streets Projects



There are a number of policy objectives and guiding policy documents that inform complete streets projects like this, including:

## Guiding Policy Documents



### Toronto Official Plan

Make Toronto a “walking city” and bring all Toronto residents within 1km of a designated cycling route



### Complete Streets Guidelines

Complete streets consider all modes, prioritize safety, and balance the need to move people and goods, while recognizing streets as places



### Road to Health: Healthy Toronto by Design

Increased physical activity is associated with reduced risk of obesity, type 2 diabetes, cardiovascular disease, and some cancers



### Vision Zero Road Safety Plan

Fatalities and serious injuries on our roads are preventable, and we must strive to reduce traffic-related deaths and injuries to zero by prioritizing the safety of our most vulnerable road users



### TransformTO: Climate Action Strategy

Target: 75% of school/work trips under 5 km are by foot, bicycle, or transit by 2030



### Encourage All Ages and Abilities to Cycle

The majority of people rate themselves as “interested but concerned” about cycling, and will only do so if bikeways feel safe

## Policy Objectives



### Reduce Reliance on Motor Vehicles

Providing alternatives to driving allows for roadways to be used more efficiently, and for users who have no choice (e.g. emergency, deliveries)



### Recover and Rebuild from COVID-19

Reallocate space and support business to recover from the impacts of the pandemic



- The focus of this document is to summarize the analysis conducted for vehicular traffic. However, it is important to note that **traffic studies are only one type of analysis that informs the design** of complete streets projects.
- Complete street projects aim to **balance the multi-modal needs** of different types of road users, with an emphasis on accommodating the safety of vulnerable road users such as cyclists and pedestrians.
- **Other modes are monitored** in addition to vehicular traffic, such as the collection of pedestrian and cyclist volume data.

# Background and Methodology



- What is the purpose of the traffic study?
  - To improve traffic operations and road user safety within the context of the complete street project's objectives.
  - To optimize traffic light timing. This includes left/right turn arrows, green time, and improving flow from one traffic light to another.
- What were the major considerations?
  - Reducing conflicts between drivers and vulnerable road users.
  - Prioritizing the movement of TTC vehicles, especially reducing delay entering and exiting stations.
  - Balancing east-west travel demand with north-south travel demand to serve all users as efficiently as possible.



- **When were traffic counts for the traffic study collected?**
  - Traffic counts were collected at most intersections in May 2022 and reflect “new normal” conditions after the COVID-19 pandemic.
  - Counts were collected at Bloor Street West / Montgomery Road and the pedestrian crossing east of Royal York in December 2018, and at Bloor Street West / Runnymede Road in August 2021. Adjustment factors were used to align these counts with May 2022.
  - Site observations were completed in June 2022 to supplement traffic counts.
- **What time periods were analyzed?**
  - AM peak period (7:30-9:30)
  - OFF peak period (10:00-15:00)
  - PM peak period (16:00-18:00)
  - Night period (22:00-00:00), and
  - Weekend peak period (10:00-15:00)











- How did the traffic study influence the Complete Street design?
  - The design team and the traffic study team worked closely to gain an understanding of pre-complete street conditions, and to test different complete street turn lane configurations and turning restrictions. Recommendations from the traffic study balance the needs of all road users.
- What locations were analyzed?
  - All intersections with traffic signals from Runnymede Road to Aberfoyle Crescent / Gardenvale Road are included in the analysis.
- What methods were used to analyze traffic operations?
  - Synchro 11 was used, which is an industry standard modelling tool used across North America for many kinds of traffic operations studies.

# Intersection Level of Service



Intersection Level of Service (LOS) is a qualitative measure of traffic flow, typically influenced by how much delay a person driving experiences at the intersection. This is an industry-standard measure for reporting changes in operating conditions. Note that this measure focuses only on vehicles.

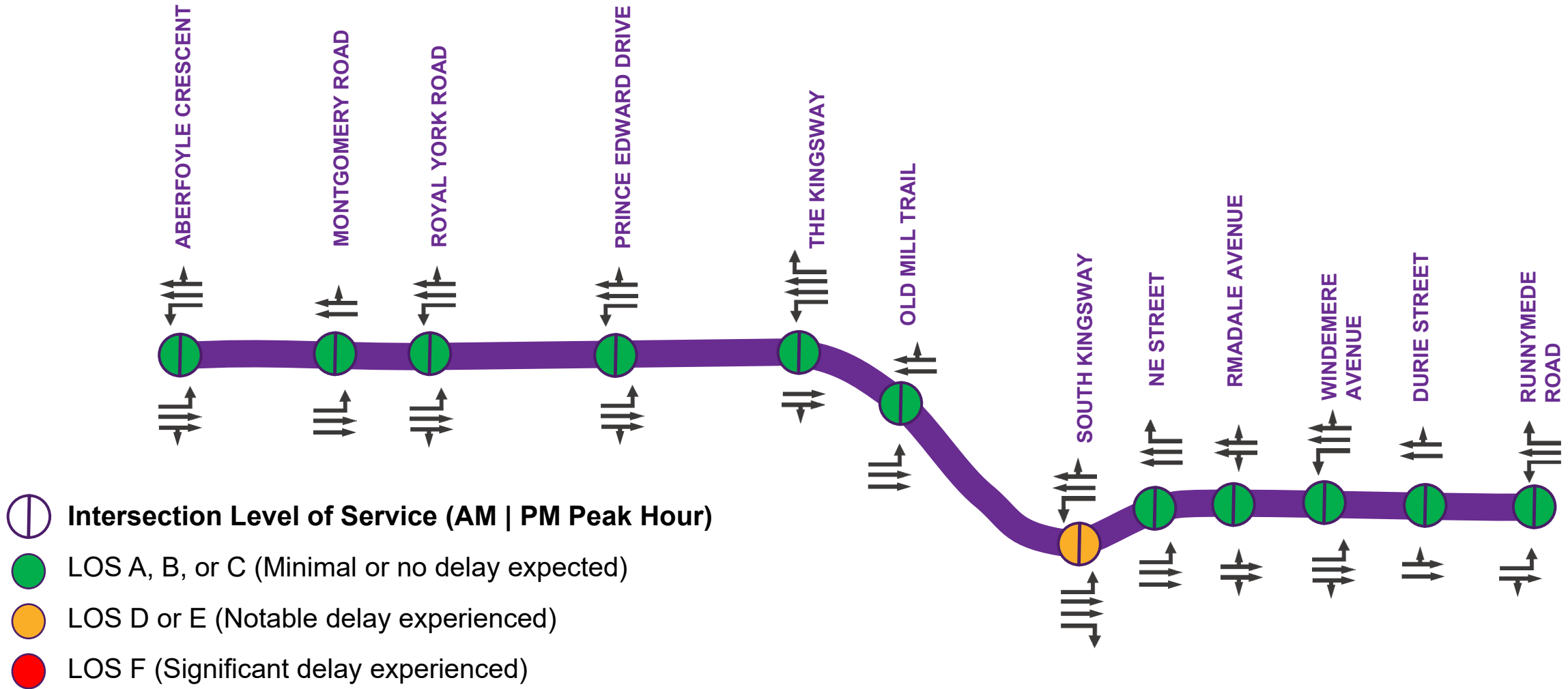
LOS	Description	Similar Example
A 	Free-flow traffic	<b>Bloor and Shaw</b> in the morning
B 	Little to no delay. Drivers can move through intersection very quickly and comfortably.	<b>Bloor and Bedford</b> in the morning
C 	Very light delay. Drivers can still move through the intersection comfortably.	<b>Bloor and Dufferin</b> during morning and evening rush hour
D 	Mild delay, where drivers may encounter more than one red light if their approach serves a lot of vehicles.	<b>Bloor and Keele</b> during morning and evening rush hour
E 	Notable delay. Backups are present on occasion.	<b>Bloor and Dundas</b> on a weekend
F 	Significant delay. Consistently low average speeds and traffic backups are expected.	<b>Bloor and Kipling pre-Six Points Reconfiguration</b> during evening rush hour

# Pre-Complete Streets Project Conditions

# Pre-Complete Streets Conditions | Results (Phase 1)



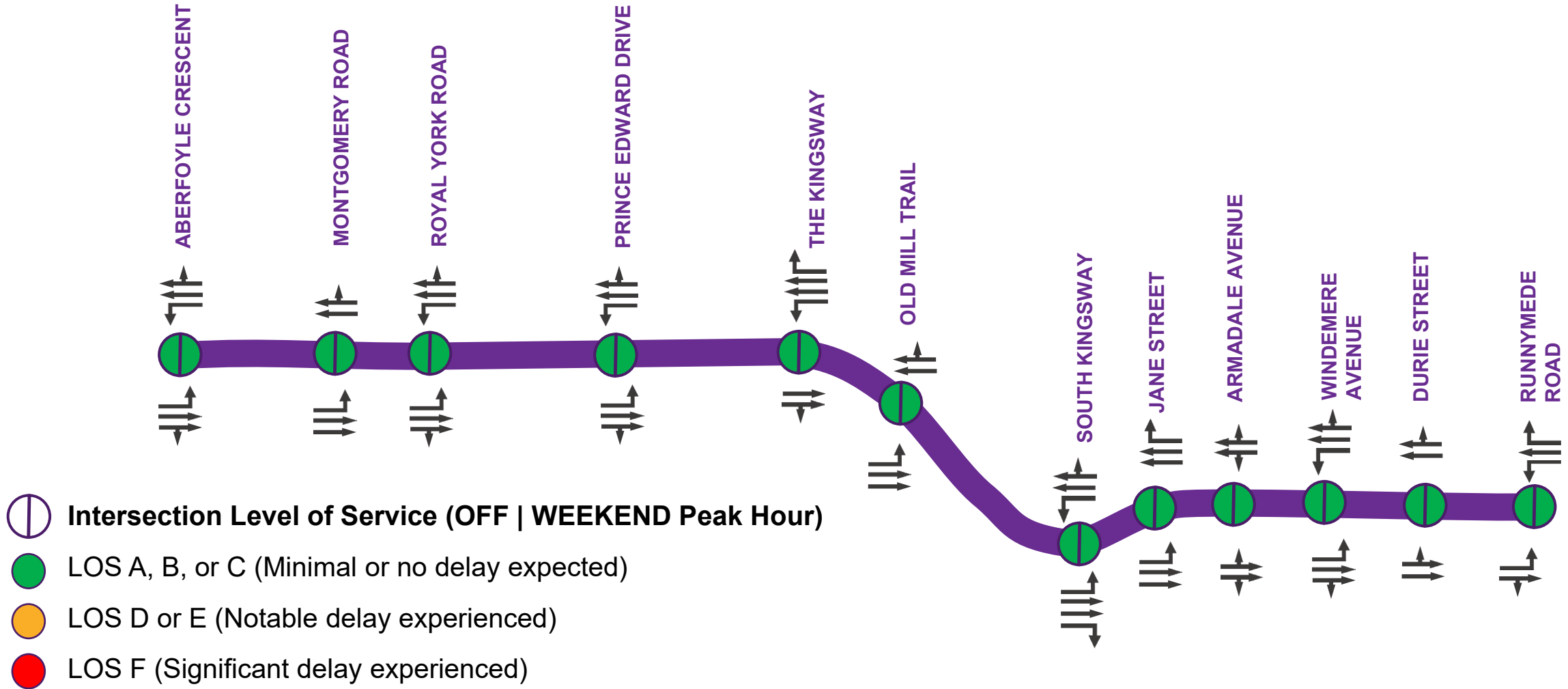
AM/PM: Pre-Complete Street



# Pre-Complete Streets Conditions | Results (Phase 1)



OFF/WEEKEND: Pre-Complete Street

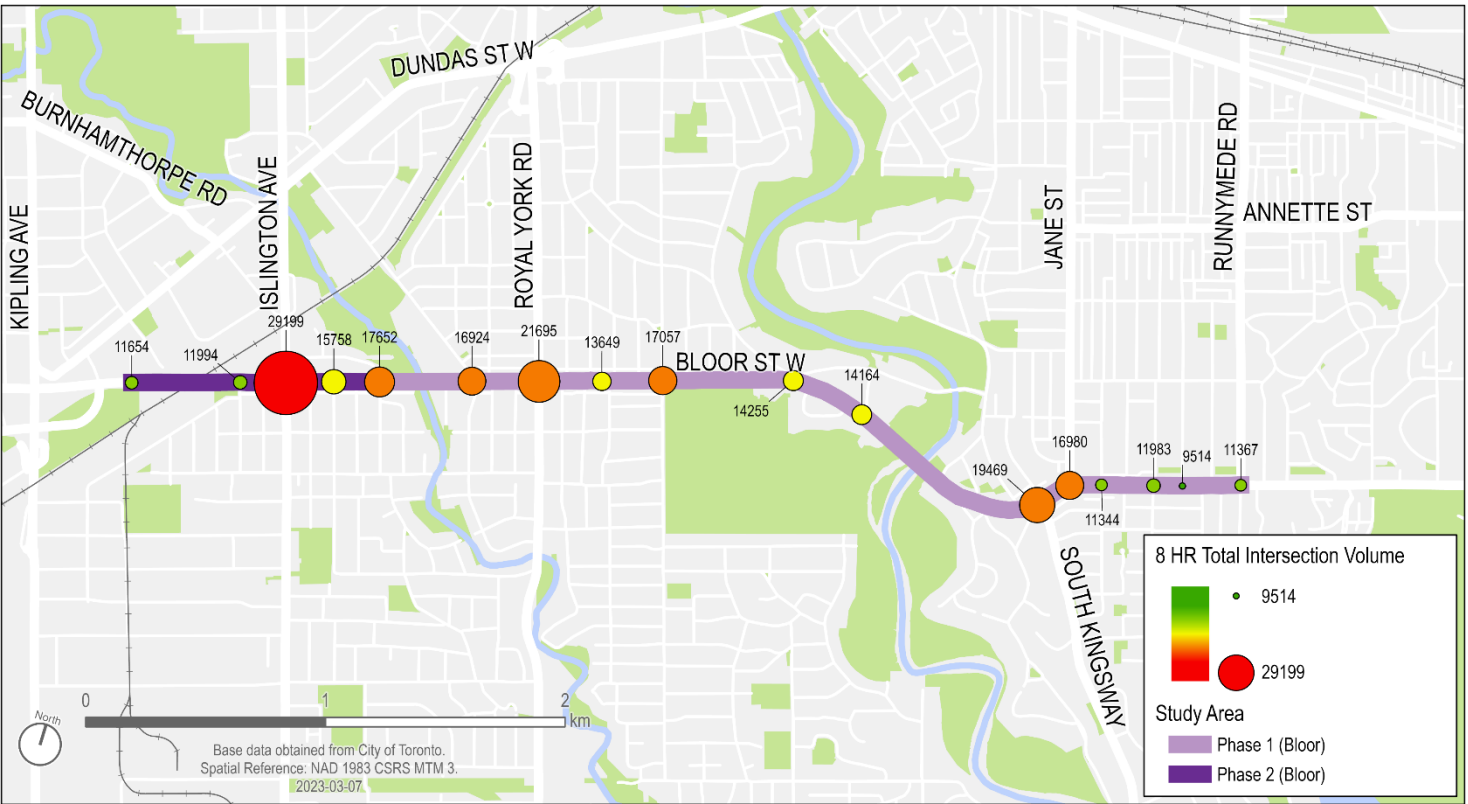


# Pre-Complete Streets Conditions – Pedestrian and Cyclist Volumes

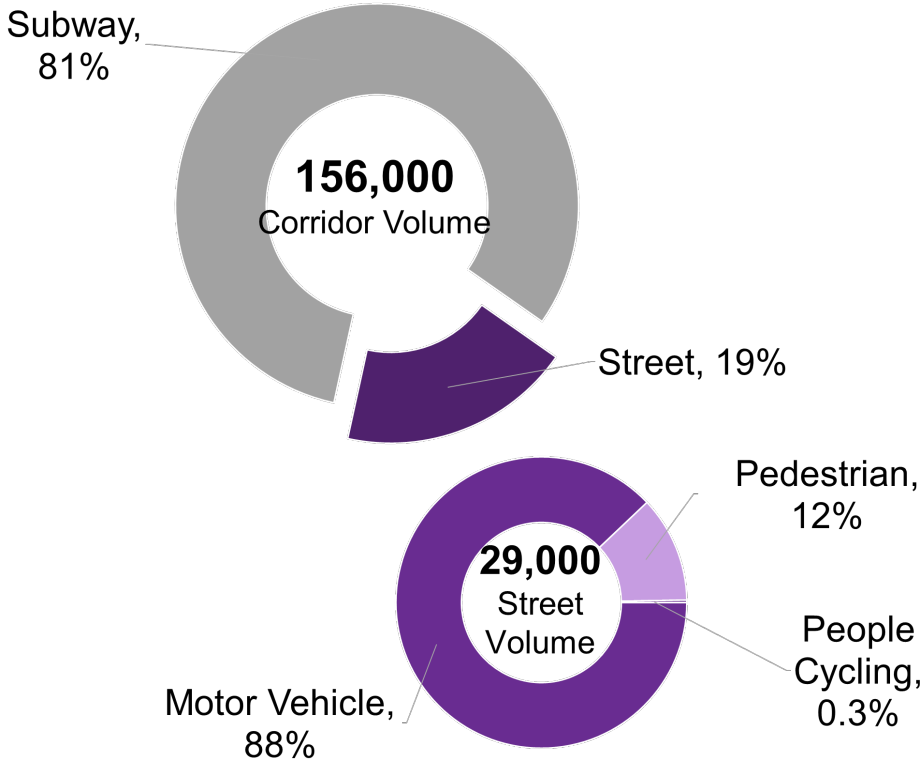


An analysis of movement patterns, including motor vehicle volumes, on the Bloor Street West corridor is an important part of the design process. The analysis informs the proposed complete street improvements, especially at signalized intersections.

## Intersection Motor Vehicle Volumes



## 24-Hour Corridor Volume (All Modes)



# Complete Streets Conditions



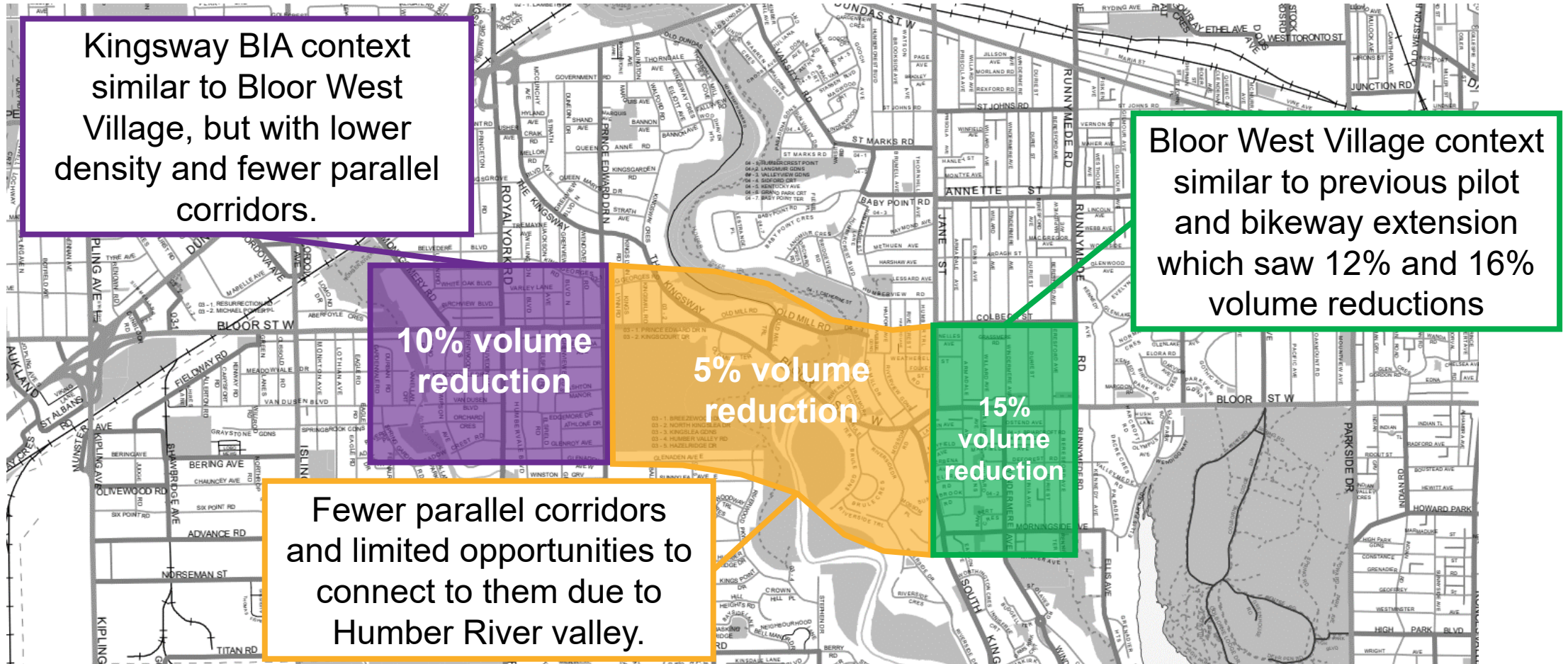
- How were traffic signal timings optimized?
  - The following updates were made to signal times to align with the City's latest Vision Zero policies:
    - **Longer all-red times** to allow road users more time to clear the intersection
    - **Leading pedestrian intervals** to give pedestrians a head-start to enter the intersection
  - Adjustments were made to provide more time to east-west travelling vehicles
  - Signals were optimized to allow more vehicles to drive through one green light after another without stopping and minimize traffic backups at red lights for east / west travel



# Complete Streets Conditions | Diversion Rate Assumptions



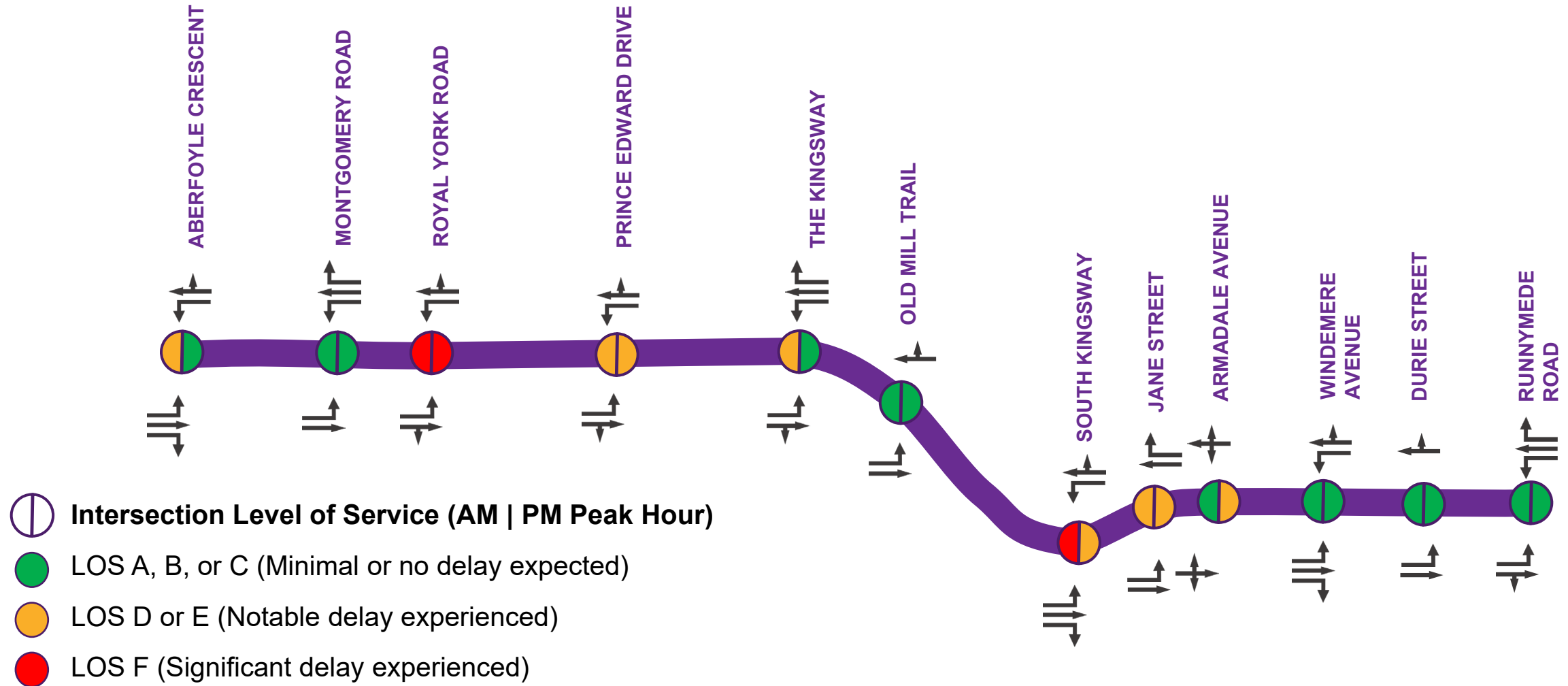
The traffic study assumes a percentage of vehicle volumes on Bloor Street West will be reduced once Complete Street extension is implemented. These diversion rates are based on observations on similar projects in the City.



# Complete Streets Conditions | Results (Phase 1)



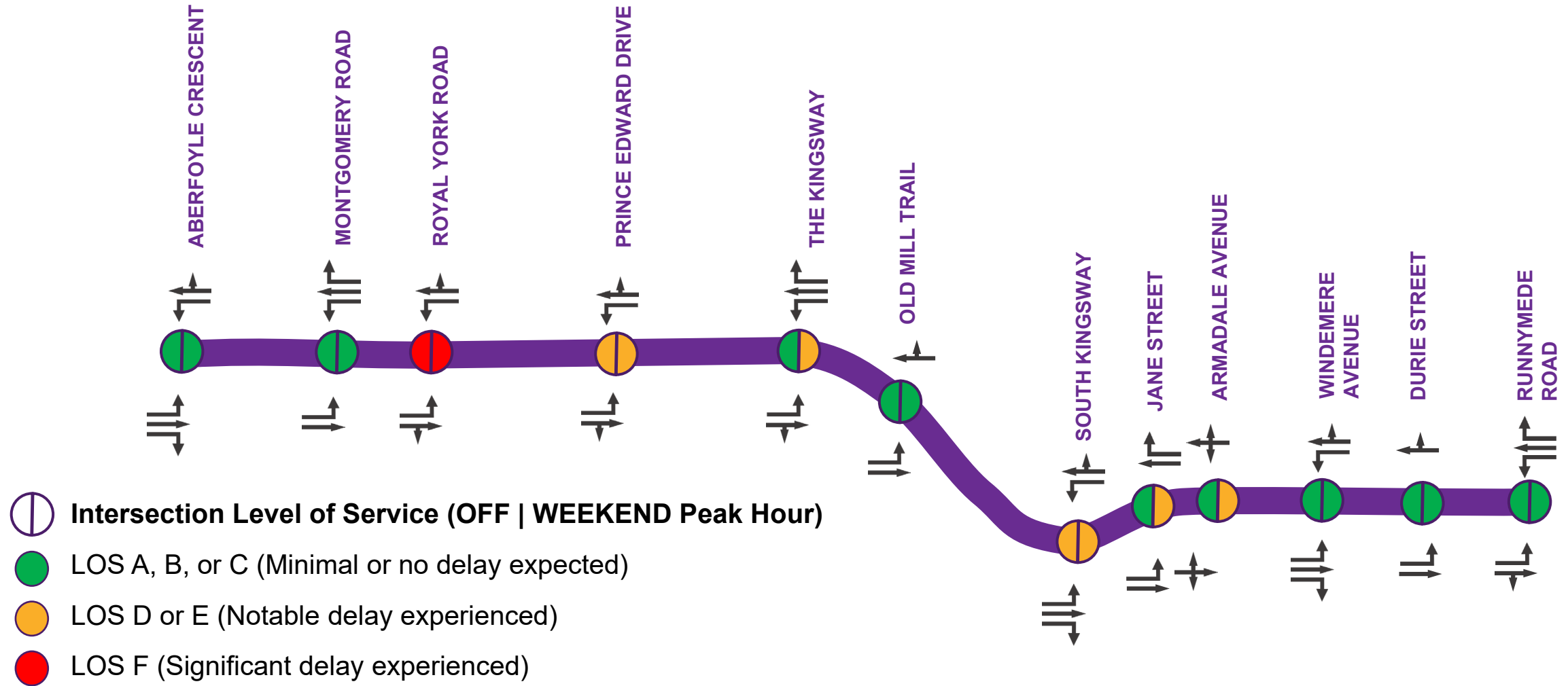
AM/PM: Complete Street with Optimized Signals



# Complete Streets Conditions | Results (Phase 1)



OFF/WEEKEND: Complete Street with Optimized Signals



# Conclusions



- Traffic operations are expected to be impacted
  - A significant contributor to impacts come from safety improvements for pedestrians and cyclists. Includes, but is not limited to:
    - Leading Pedestrian Intervals (i.e., pedestrian head start before drivers on green lights)
    - Fully-protected turning arrows (i.e., turns on the “arrow” phase only)
- Post-installation monitoring will provide guidance on how to further improve traffic flow, potentially through:
  - Additional / reduced turn restrictions
  - Further signal timing changes
  - New advanced-turn phases (i.e. green arrows)

# Next Steps



- **What traffic monitoring is planned?**
  - After Complete Streets are implemented, traffic volumes will be observed to understand how the project impacts road users in the area
  - Qualitative (site visit observations, road user and community feedback), and quantitative (new multi-modal traffic counts) monitoring is planned and will inform potential future changes to the design and traffic signal timing.
  - Consideration could be given to additional / reduced turn restrictions, further signal timing changes, or new advanced-turn phases (*i.e.* green arrows) based on observations.
  - Installing four cycling counters along the corridor to monitor cyclist volumes post-installation.
- **What other changes are pending?**
  - The traffic study examined the need for fully-protected turns (*i.e.*, turns on the “arrow” phase only) at some intersections to separate vehicles from vulnerable road users. Due to required changes to traffic signal equipment, these measures are to be installed later pending traffic operations and safety observations.
  - Other signal timing equipment changes and physical roadway changes are also being explored, such as at South Kingsway, Mossom Road and Riverview Gardens.