



MD 193 (University Blvd) Bus Only Lanes Pilot Performance Evaluation

Nov 2024

Prepared by Mead & Hunt



Bus Only Lanes Pilot Compliance Evaluation

Core Considerations of the Pilot

- Is there unauthorized use of the bus only lane by non-transit vehicles?
- Are transit vehicles appropriately utilizing the bus only lanes in the MD 193 corridor?

Bus Only Lane Compliance Analysis

SCOPE

- The Bus Only Lane Pilot was launched in **February 2024** on both directions of MD 193 between Dennis Avenue & Amherst Avenue
- Four cameras were installed at two locations to evaluate driver compliance in both directions along MD 193
 - Dennis Avenue to Caddington Avenue
 - Arcola Avenue to Sligo Creek Parkway
- Data collection occurred during three time periods:
 - 8 months before bus only lane implementation
 - 4 months after bus only lane implementation
 - 8 months after bus only lane implementation
- Lane utilization was calculated for different vehicle types



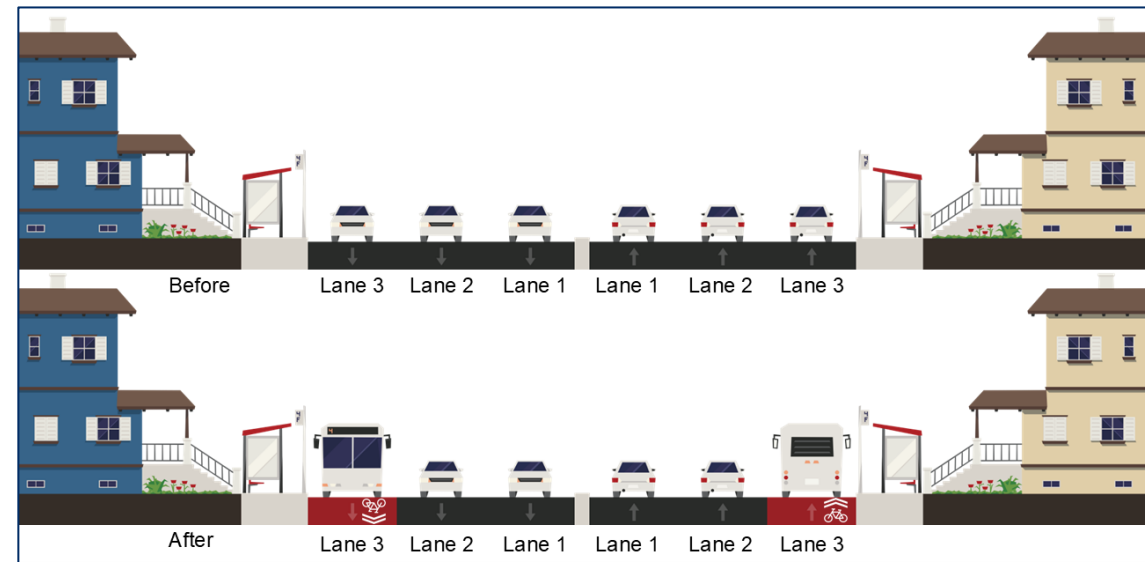
Bus Only Lanes Compliance Analysis

- Data Collection:

- Dates (Bus Only Lane Implementation, February 2024)
 - June 6-7, 2023 (Tue-Wed)
 - May 7-8, 2024 (Tue-Wed)
 - September 10-11, 2024 (Tue-Wed)
- Peak Time Period Aggregation:
 - AM Peak: 7-9 AM
 - Midday Peak: 11 AM – 1 PM
 - PM Peak: 4-6 PM

- Corridor Traffic Composition and Lane Use

- Lanes 1 & 2
 - Motor vehicles
- Lane 3
 - Metrobuses
 - Ride-On buses
 - School buses
 - Bicycles

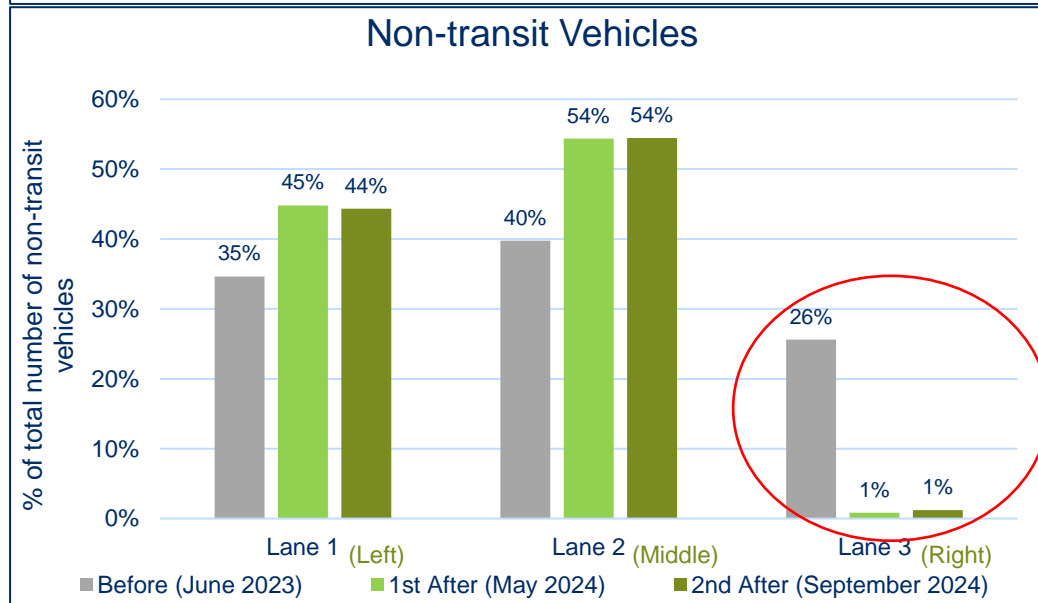
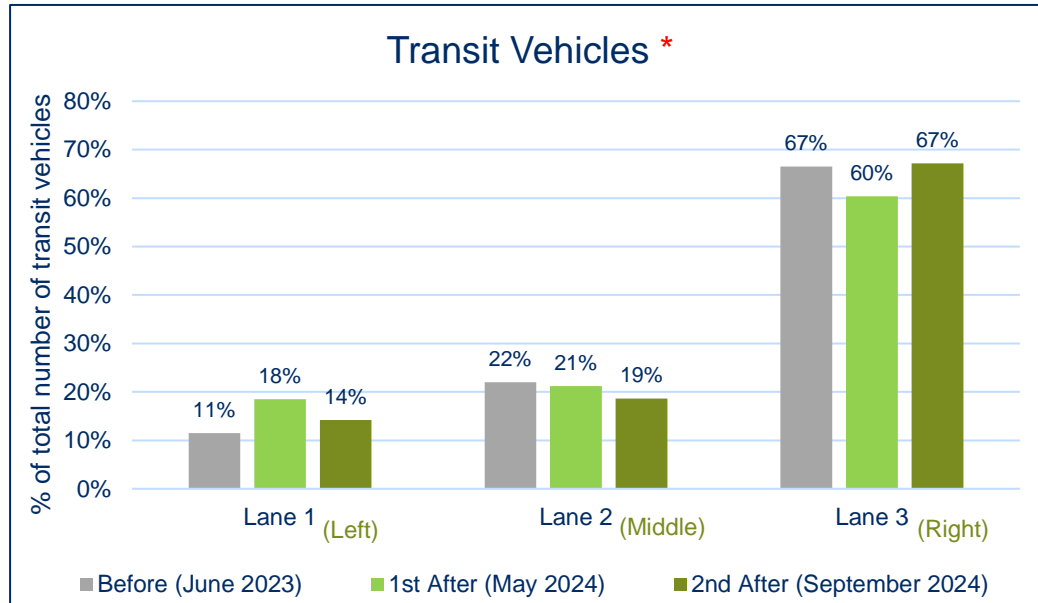


Bus Only Lane Compliance Evaluation Findings

- Non-compliance with bus only lane was observed by 1% of non-transit vehicles post-implementation.
- Most non-transit vehicles were observed using the middle lane at the beginning of the corridor in the westbound (WB) direction.
- Most non-transit vehicles were observed using the left lane toward the end of the corridor in the WB direction.

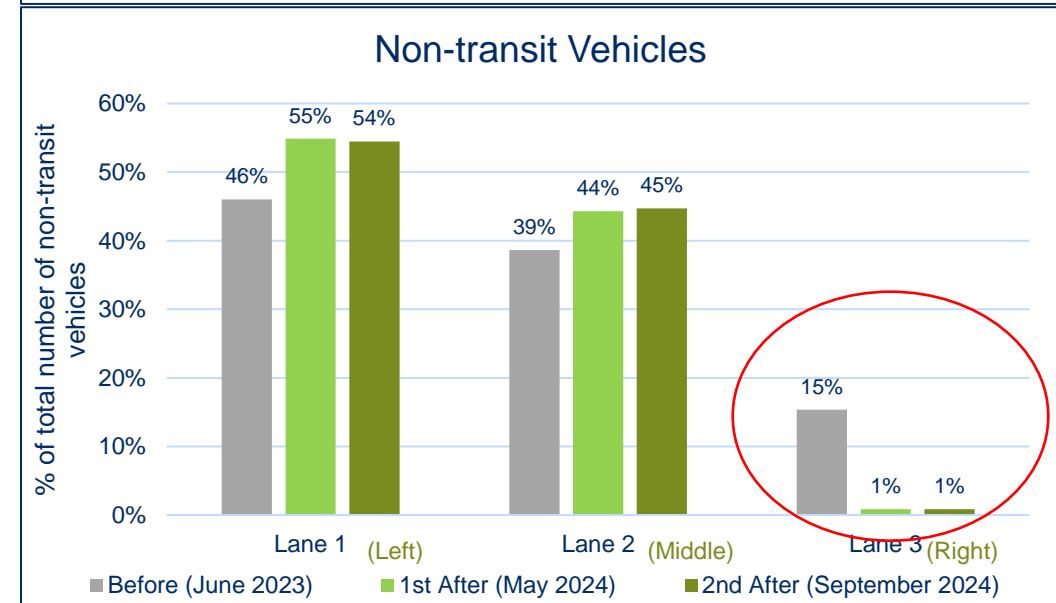
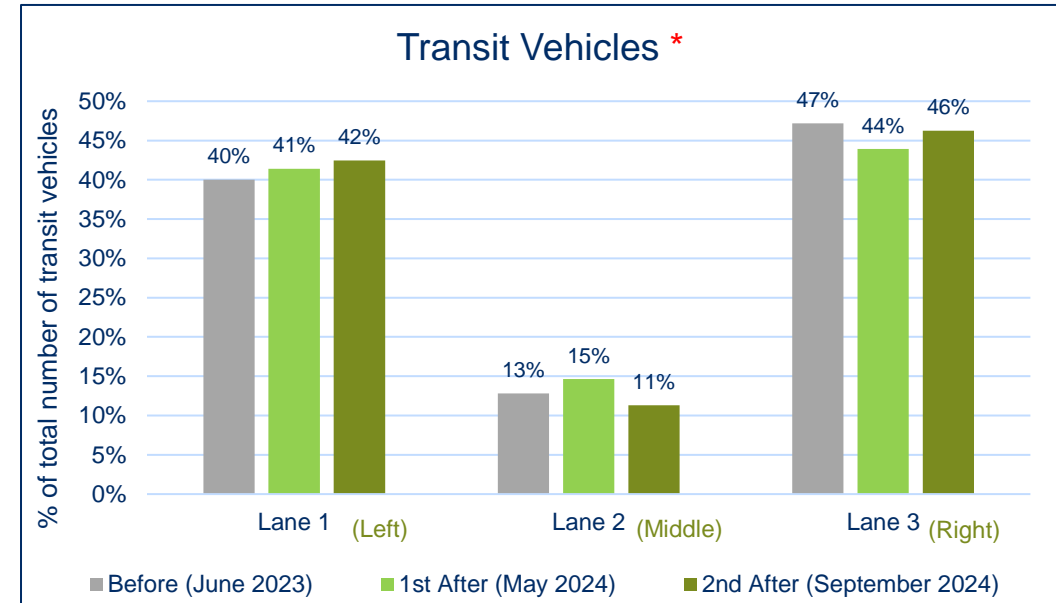
Bus Only Lane Compliance

Location 1: Caddington Avenue to Dennis Avenue



Eastbound – Aggregated

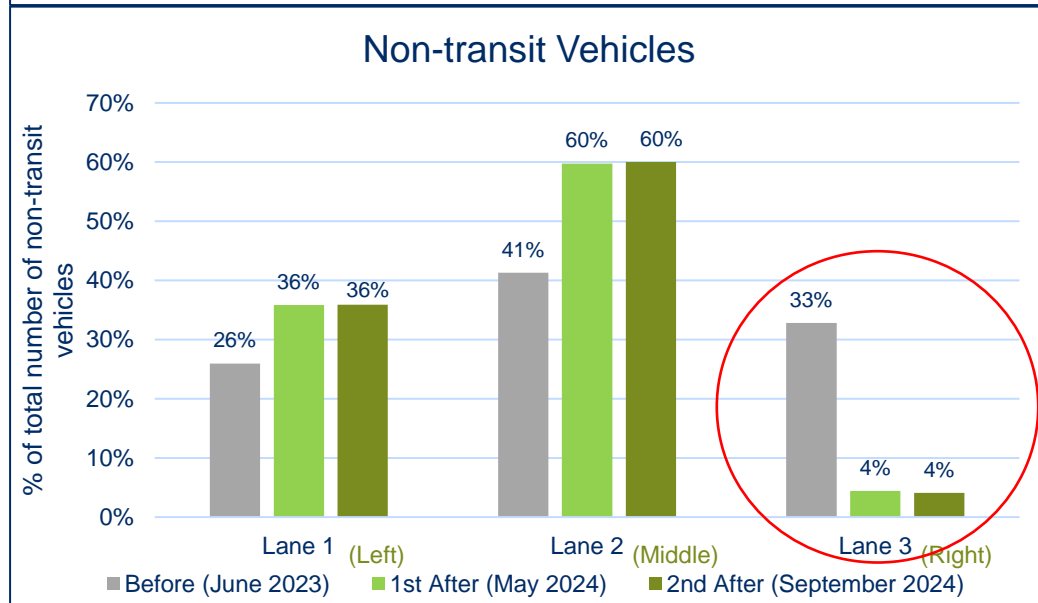
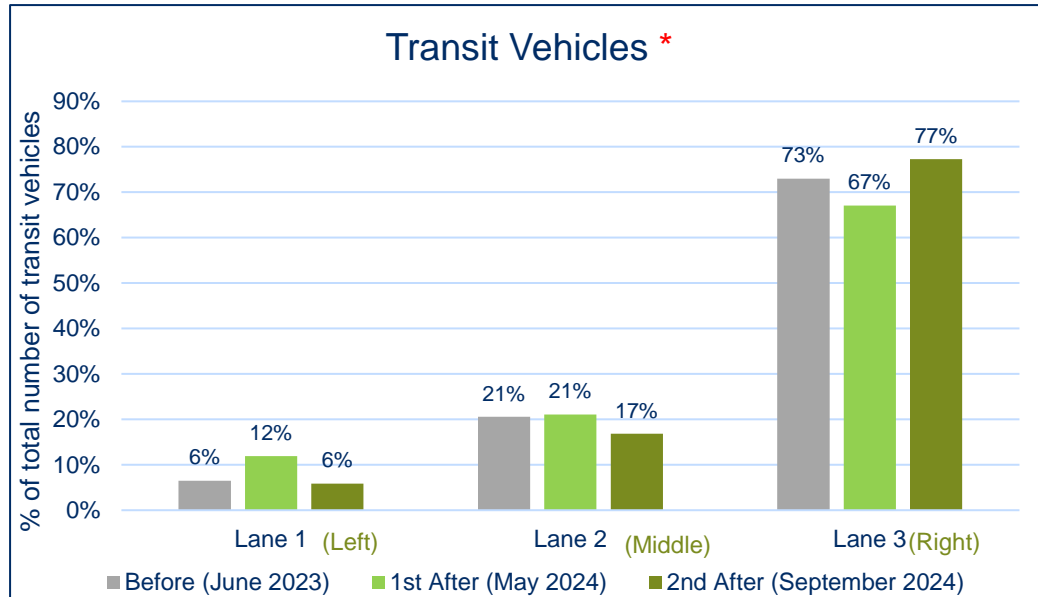
Location 2: Sligo Creek Parkway to Arcola Avenue



* Transit vehicles include Metro, Ride-on, and school buses

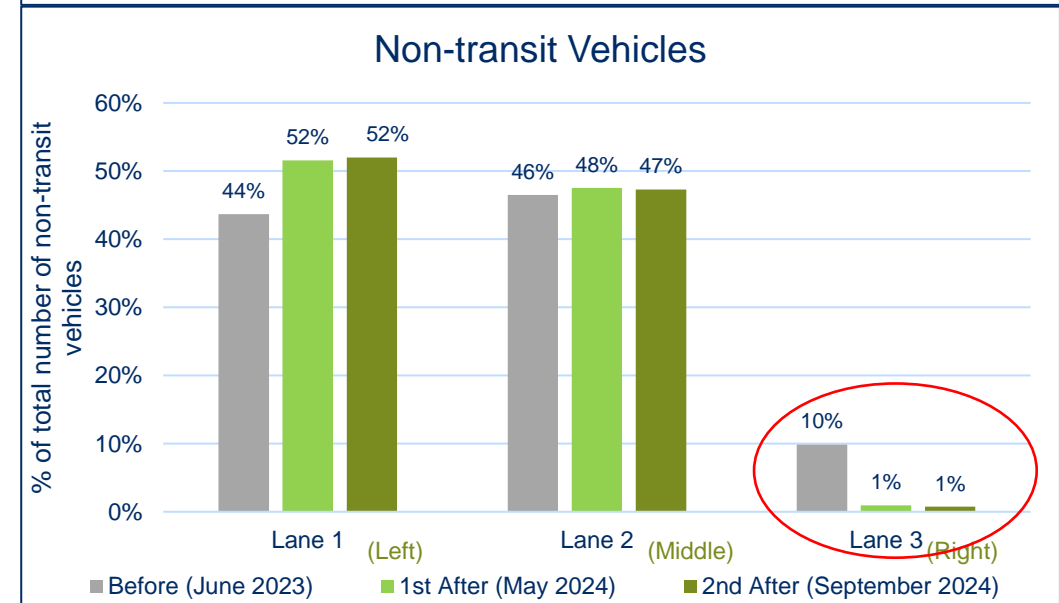
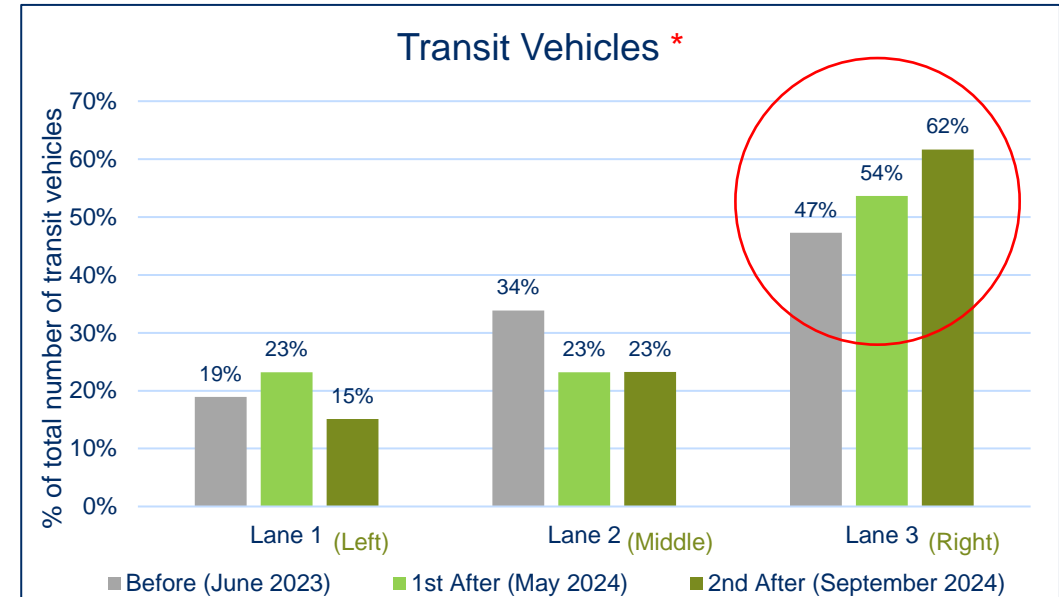
Bus Only Lane Compliance

Location 1: Caddington Avenue to Dennis Avenue



Westbound – Aggregated

Location 2: Sligo Creek Parkway to Arcola Avenue



* Transit vehicles include Metro, Ride-on, and school buses

Travel Time Analysis

- How did the use of bus only lane improve transit travel time?
- How did capacity reduction because of bus only lane implementation impact vehicular travel time?

Travel Time Analysis Methodology

- Data Collection Time

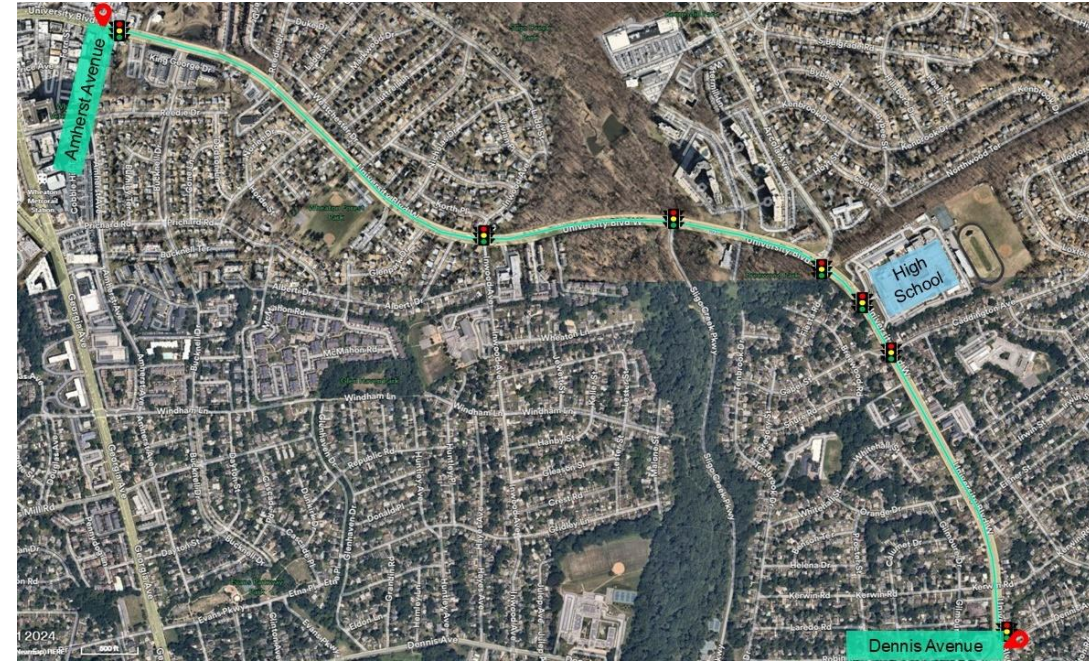
- Dates (Bus Only Lane Implementation, February 2024)
 - October 08-14, 2023
 - April 14-20, 2024
 - September 08-14, 2024
- Peak Time Periods
 - AM: 6-9 AM
 - Midday: 9 AM – 3 PM
 - PM: 3-7 PM

- Data Sources

- WMATA Metro bus Routes C2-C4
- Regional Integrated Transportation Information System, RITIS (Vehicle Travel Times)

- Bus Lane Corridor Boundaries

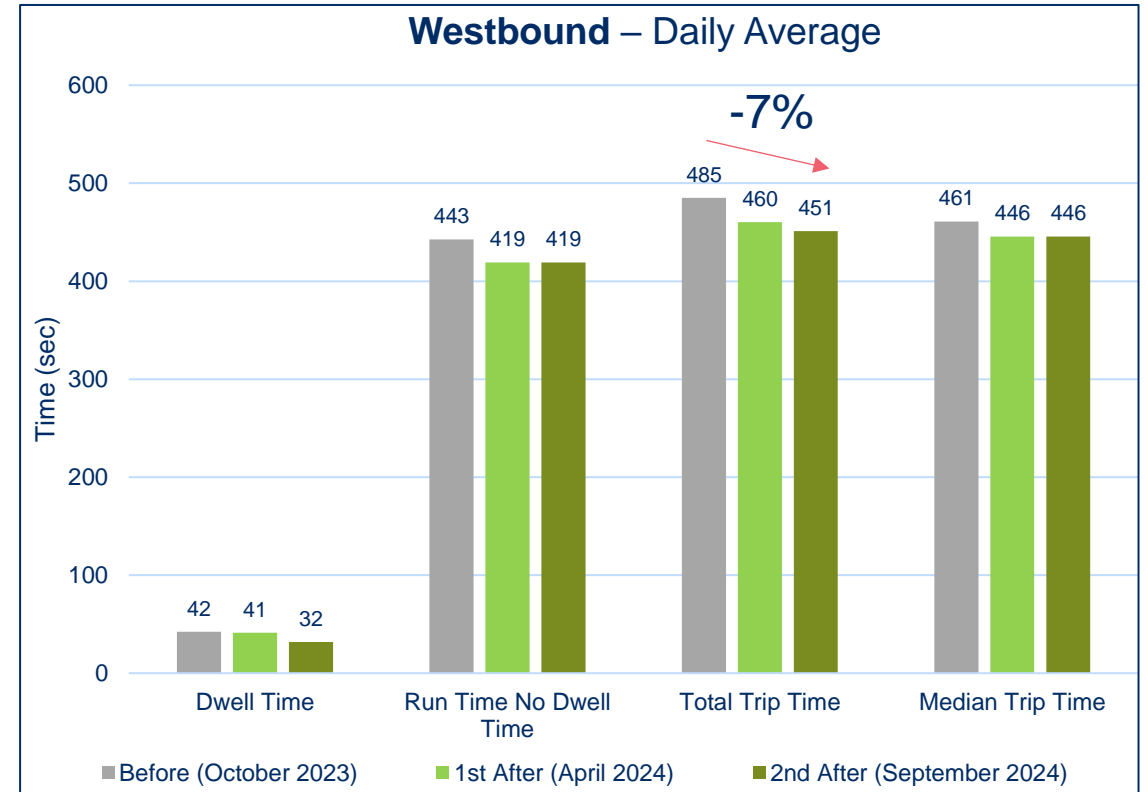
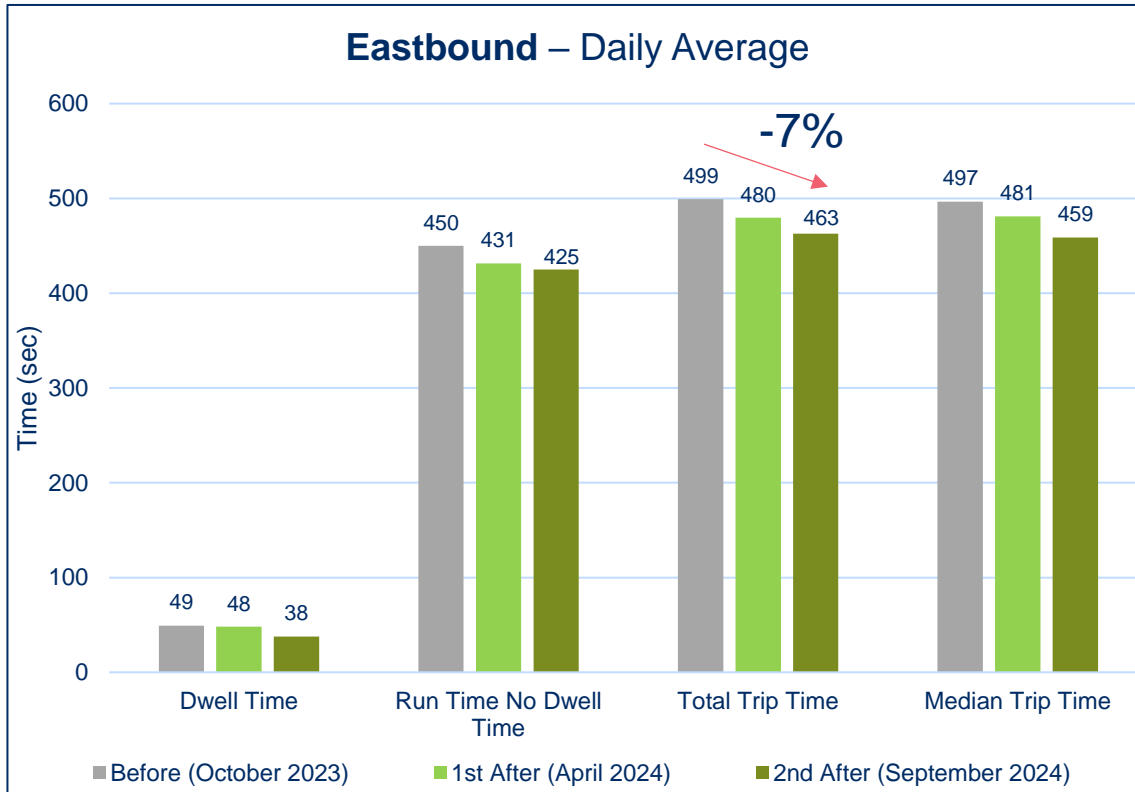
- MD 193 (University Blvd) from Dennis Avenue to Amherst Avenue (both directions)



Travel Time Analysis - Findings

- Bus performance metrics showed a **7% reduction in total trip time** in both directions of MD 193.
- Vehicular travel time **increased by 7%** after bus only lane implementation. As expected,
 - The increase is attributed to the reduction of one travel lane for non-transit vehicles
 - The increase equates to 20 seconds additional time through the bus only lane corridor.
 - This expected increase was communicated to the public

Bus Performance using C2-C4 Routes Data – Daily Average

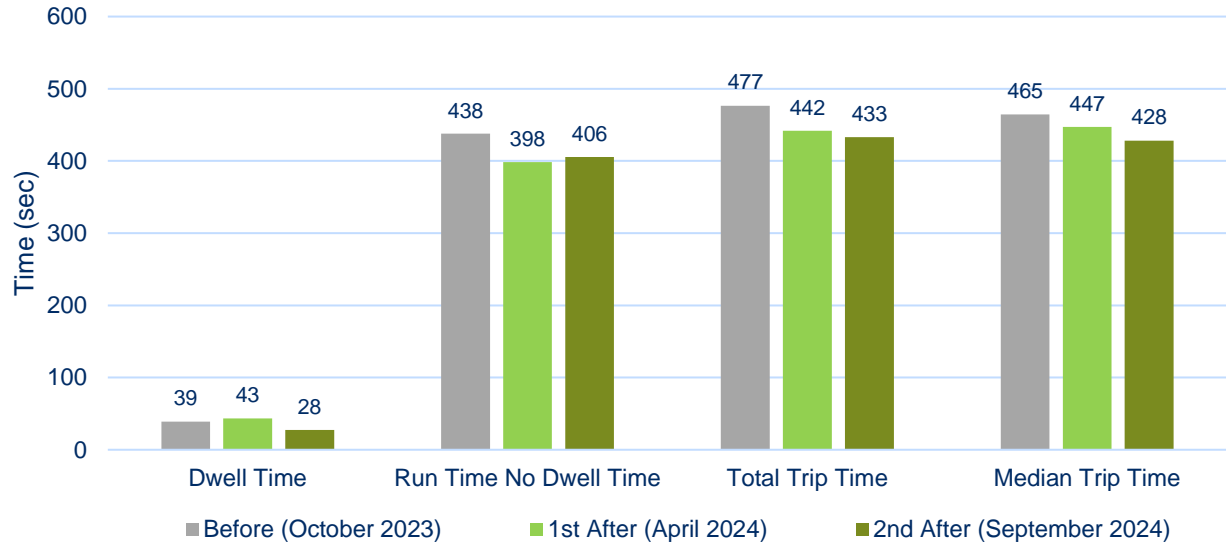


Dwell Time is time spent during boarding and alighting at bus stops

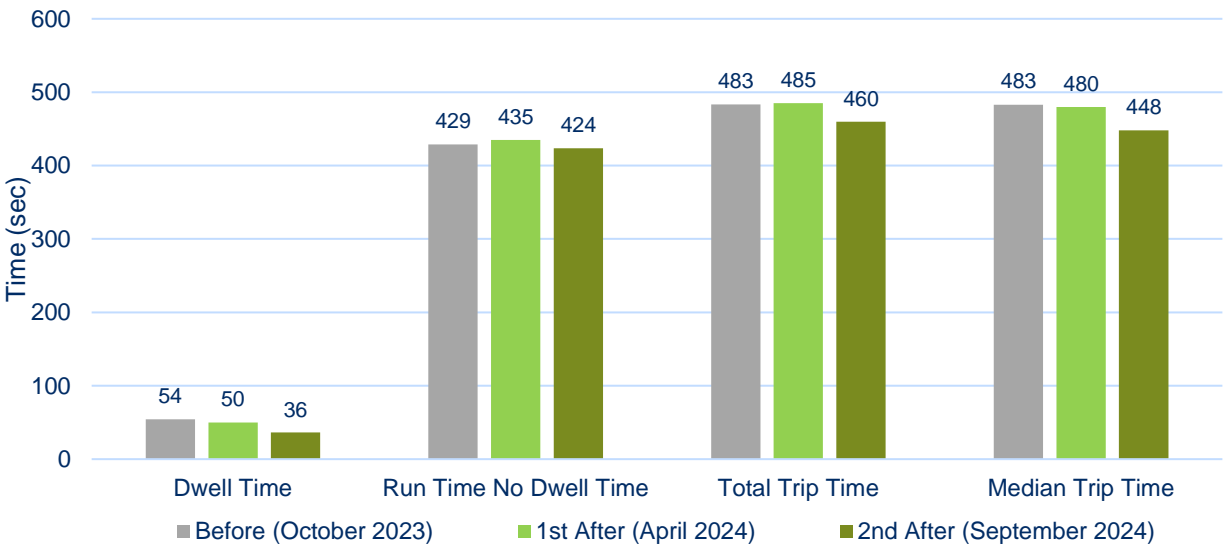
t-test was performed on the Before & After data. The result indicated that the 7% reduction in total trip time was statistically significant.

Bus Performance using C2-C4 Routes Data – by Time-of-Day

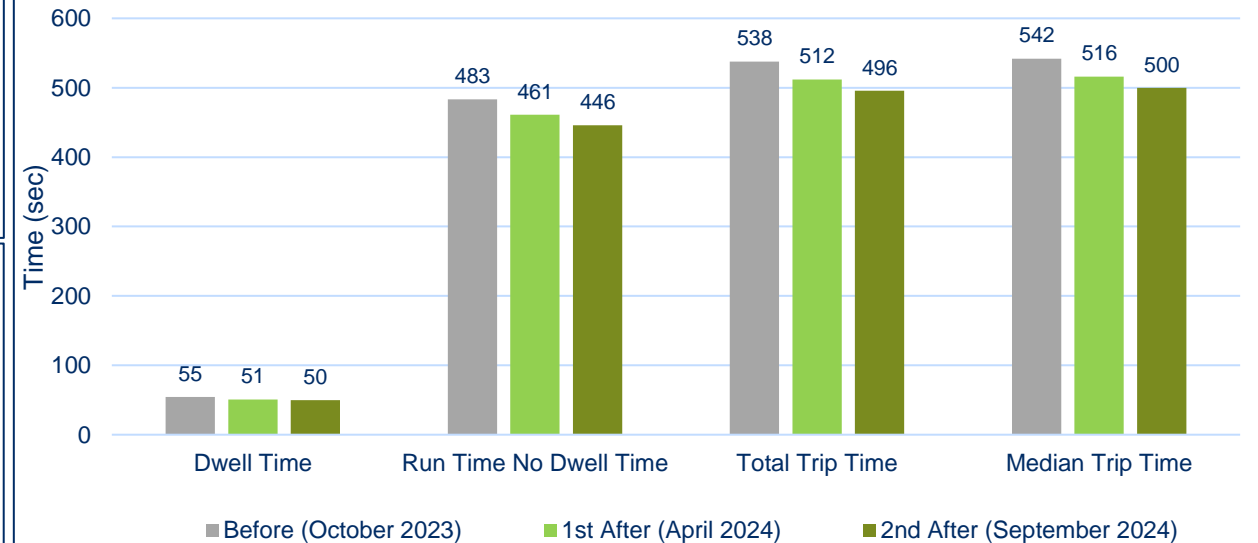
AM Peak-EB



Midday -EB



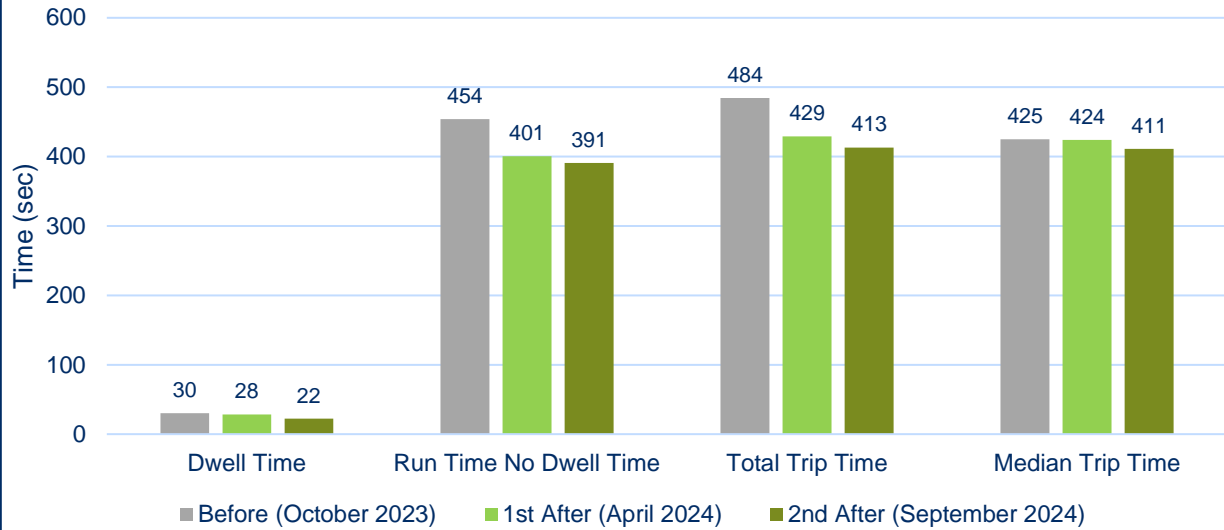
PM Peak-EB



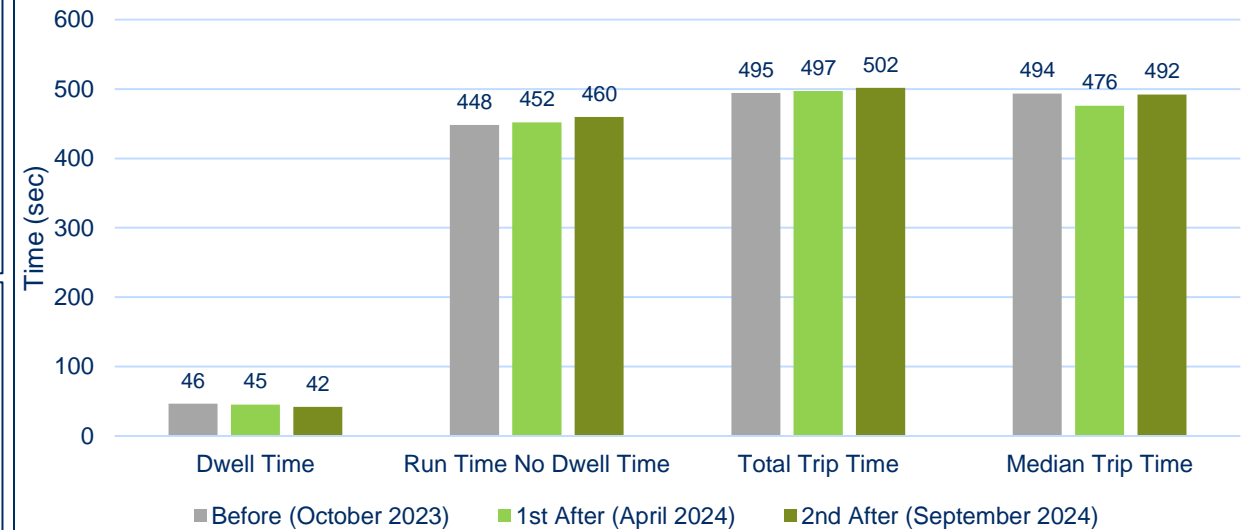
Dwell Time is time spent during boarding and alighting at bus stops

Bus Performance using C2-C4 Routes Data – by Time-of-Day

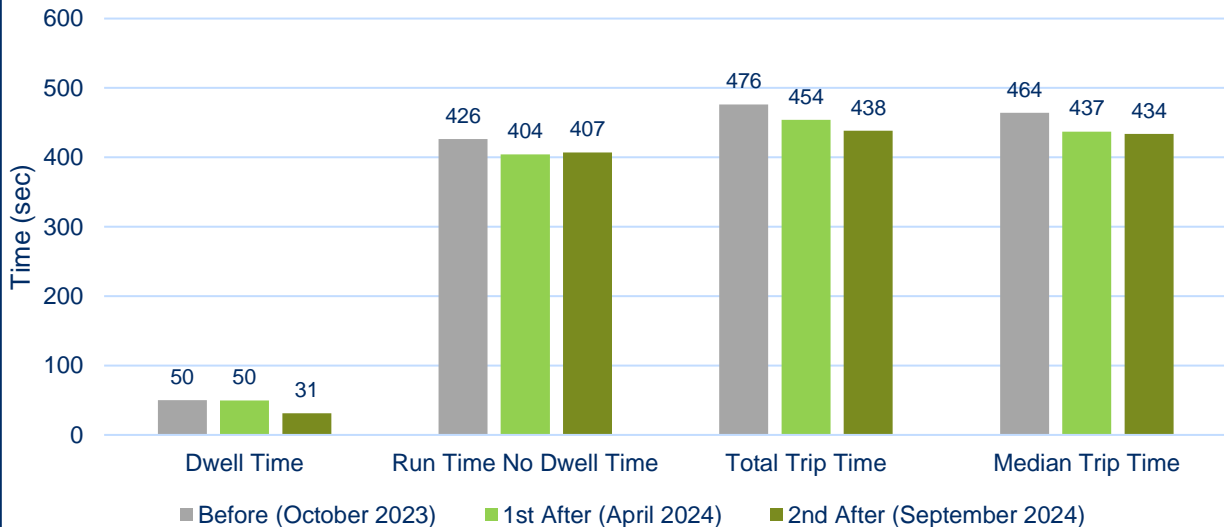
AM Peak-WB



PM Peak-WB

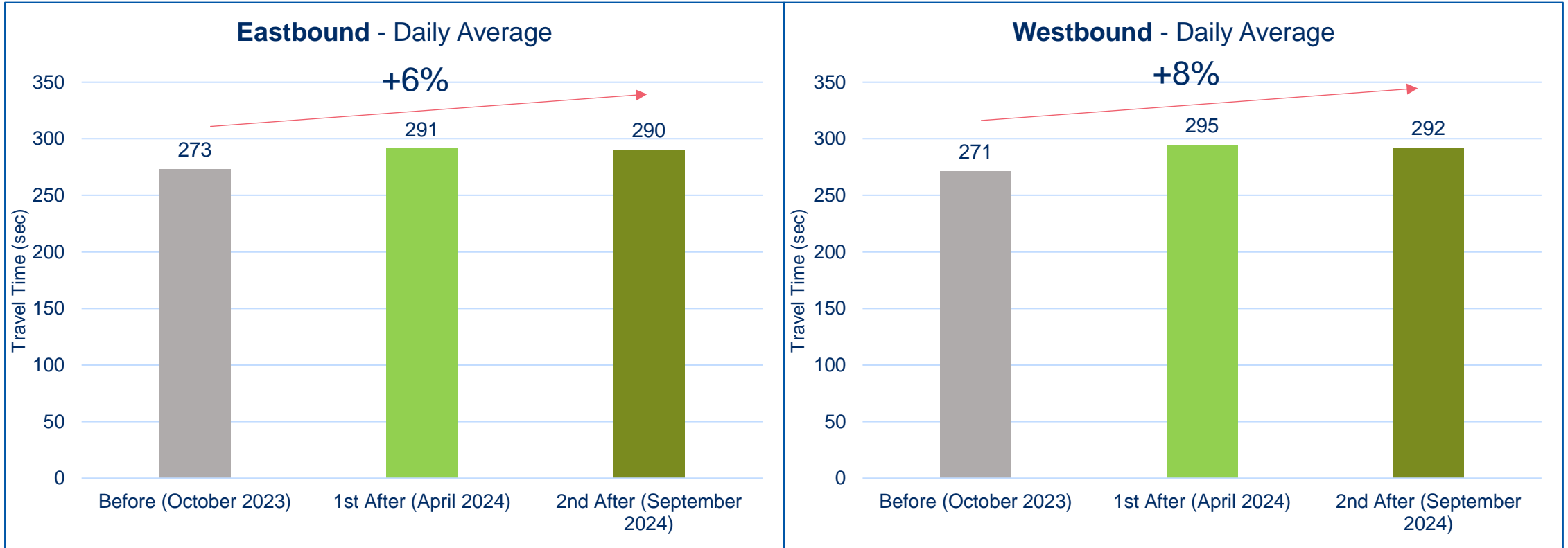


Midday -WB



Dwell Time is time spent during boarding and alighting at bus stops

RITIS Vehicular Travel Time Comparison – Bus Only Lane Corridor



The result indicated an average of 7% increase in vehicular travel time was noted.

Field Observations

- Field observations were conducted while school was still in session (Spring 2024) as well as after the school was closed for construction (Fall 2024):
 - Drivers showed familiarity with the bus lane and were aware of using it for right turns
 - During school dismissal, long queue formed at the bus only lane, right turns to Arcola, however, queue was dissipated within 1 cycle
 - No cycle failures observed



Summary & Next Steps

- Summary:
 - Improved Metro buses travel time (7% reduction) and reliability (5% improvement) for C2/C4 routes along the corridor
 - Reasonable impact to general traffic (only 20 sec increased travel time in the 2-mile pilot corridor)
 - High level of drivers' compliance with the Bus Only Lane
- Recommend sharing this information with MDOT SHA to determine next step(s)