



# Pilot Transit Initiatives at DDOT

Analysis of Bus Transit Performance

d.

Diane Patterson

# Outline

1. Introduction
2. Extended Peak Period Parking Restrictions During SafeTrack
  - a. Methodology
  - b. Results
  - c. Limitations
3. Temporary Rhode Island Bus Lane
  - a. Bus Performance
  - b. Compliance
  - c. Limitations
4. Lessons Learned & Recommendations

2 projects:

1. SafeTrack: 6/4/16 – 6/25/17

Performance: Did the extended rush hour parking restrictions during SafeTrack improve bus mobility and reliability?

2. Red Line Shutdown: 7/21/18 – 9/3/18

Performance: For the G9, did the bus lanes improve bus operations and increase ridership?

Compliance: Did private motorists follow the lane restrictions and not drive in the bus lane?

1. Introduction

2. Parking Restrictions

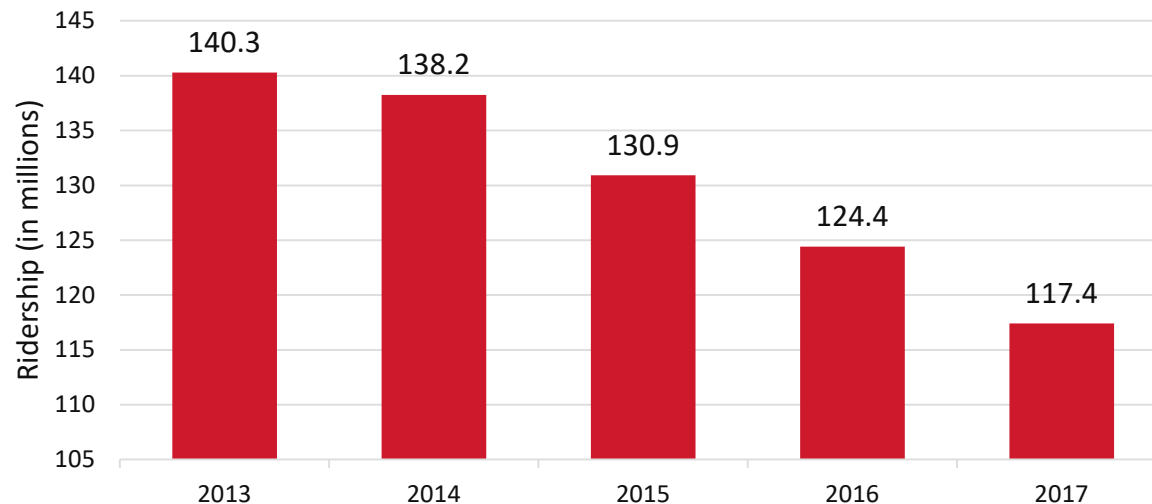
3. Bus Lane

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# The New Normal

- Major repairs/shutdowns on Metrorail
  - SafeTrack: 6/4/16 – 6/25/17
  - Red Line Shutdown: 7/21/18 – 9/3/18
- Transit ridership is falling
- New tactics, projects and evaluation methodologies are needed to achieve DC's mode share and sustainability goals

WMATA Metrobus Ridership



## 1. Introduction

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# SafeTrack – Parking Restrictions

- SafeTrack
  - Accelerated track work plan
  - 16 Safety Surges: long duration track outages for major projects in key parts of the system
  - Announced on 5/6/16
  - Surges began on 6/4/16
- One Response to Improve Bus Transit:
  - Selected corridors w/key transit routes & rush hour parking restrictions – extended no parking hours
  - Sign shop produced and installed thousands of temporary signs

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**Metro riders face year of 'massive' repairs, shutdowns, service cuts**

**Metro Unveils Yearlong Track Work Program, Will Shut Down Sections Of Lines**

# Parking Restrictions

	AM Peak	PM Peak
Normal Rush Hour Parking Restriction	7-9:30am	4-6:30pm
SafeTrack Rush Hour Parking Restriction	7-10am	4-7pm
WMATA Peak Periods	6-9am	3-7pm

Safe Track Dates:  
6/4/16 – 6/25/17



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a. Methodology

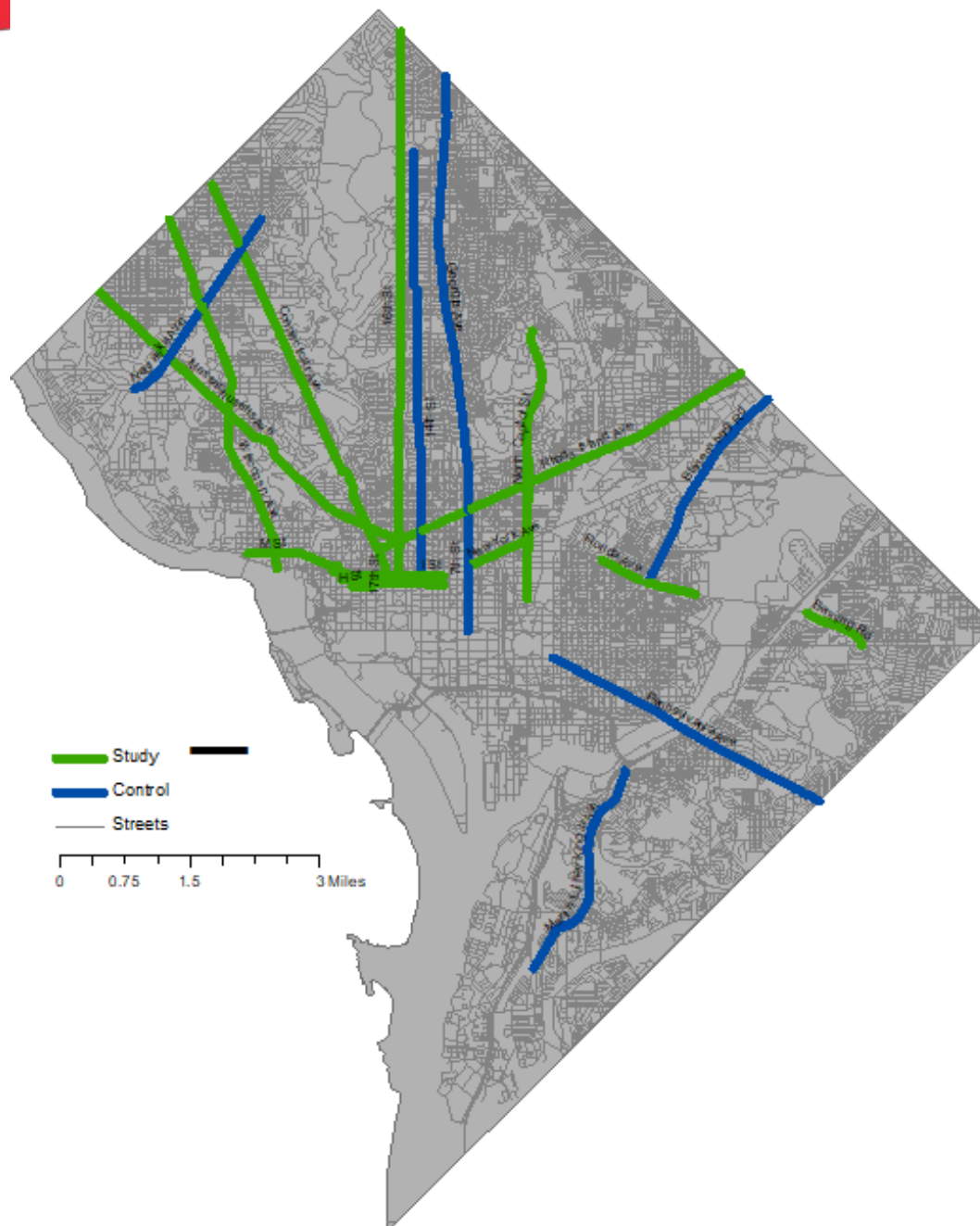
b. Results

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# Study & Control Corridors



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# Study & Control Bus Lines

Study Corridors		
No.	Street	Bus Lines
1	16th St NW	S4, S9
2	Benning Rd NE	X2, X9
3	Benning Rd SE	U8
4	Connecticut Ave NW	L2, N4, N6
5	Florida Ave NE	90, X3
6	H St NW	30N, 30S, 32_E, 33_S, 36_E, 39_E, 42_S, S4
7	I St NW	30N, 30S, 32_W, 33_N, 36_W, 38B_W, 39_W, 42_N, S4
8	M St NW	30N, 30S, 31, 33, 38B, D5
9	Massachusetts Ave NW	N4, N6
10	North Capitol St NE/NW	80
11	Pennsylvania Ave NW	31, 32, 36, 39, D5
12	Rhode Island Ave NE to NW	83, 86, G8, T14
13	Wisconsin Avenue NW	30N, 30S, 31, 33

Control Corridors		
1	14 <sup>th</sup> Street NW	52, 53, 54
2	Bladensburg Road NE	B2
3	Georgia Ave/7 <sup>th</sup> Street NW	70, 79
4	Martin Luther King Jr. Avenue SE/SW	90, A9
5	Nebraska Avenue NW	M4
6	Pennsylvania Ave SE	30N, 30S, 32, 36, 39

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### Data:

- AVL bus travel speed & time data from WMATA
  - Unit: timepoint pair segments
- INRIX general travel speed data from RITIS
  - Unit: TMC segments

### Dates:

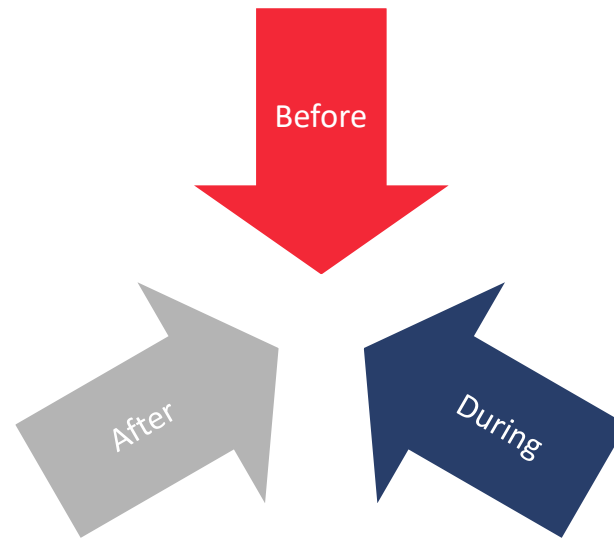
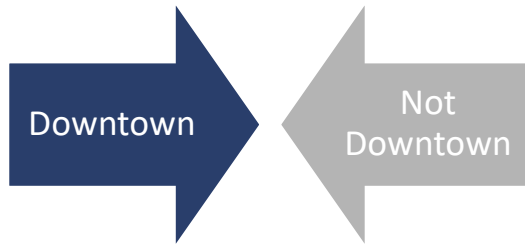
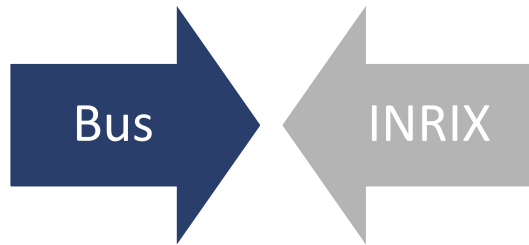
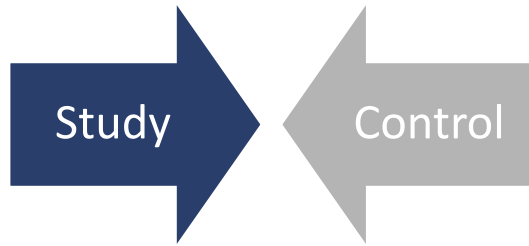
- Before: 10/1/15 to 10/22/15
- During: 10/4/16 to 10/20/16
- After: 10/3/17 to 10/26/17

### Times:

### Days of the Week

- Tuesday
- Wednesday
- Thursday
- 9:15am-10am
- 6:15pm-7pm

# 4 Dimensions of Comparisons



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# Average PM Speeds

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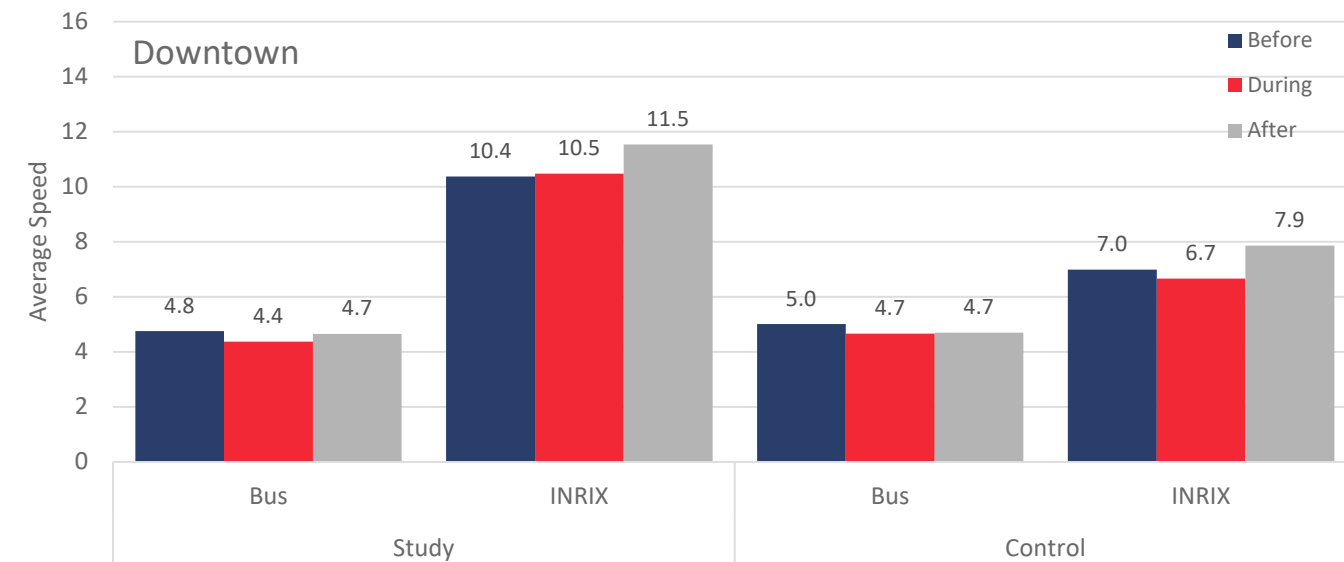
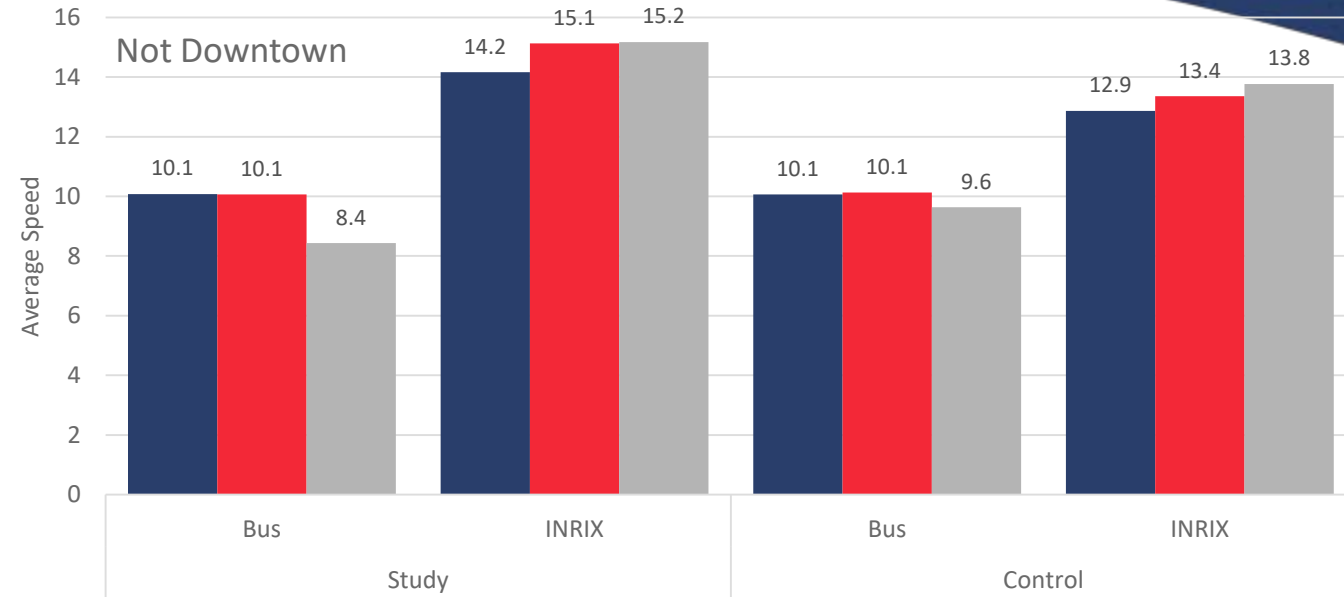
a. Methodology

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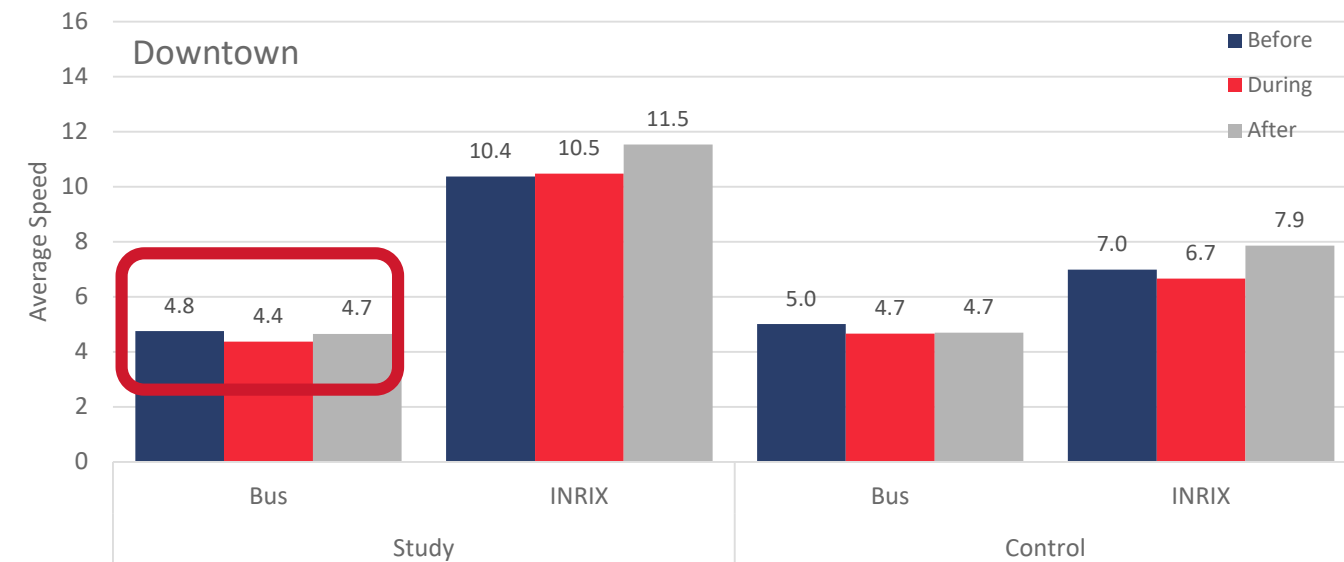
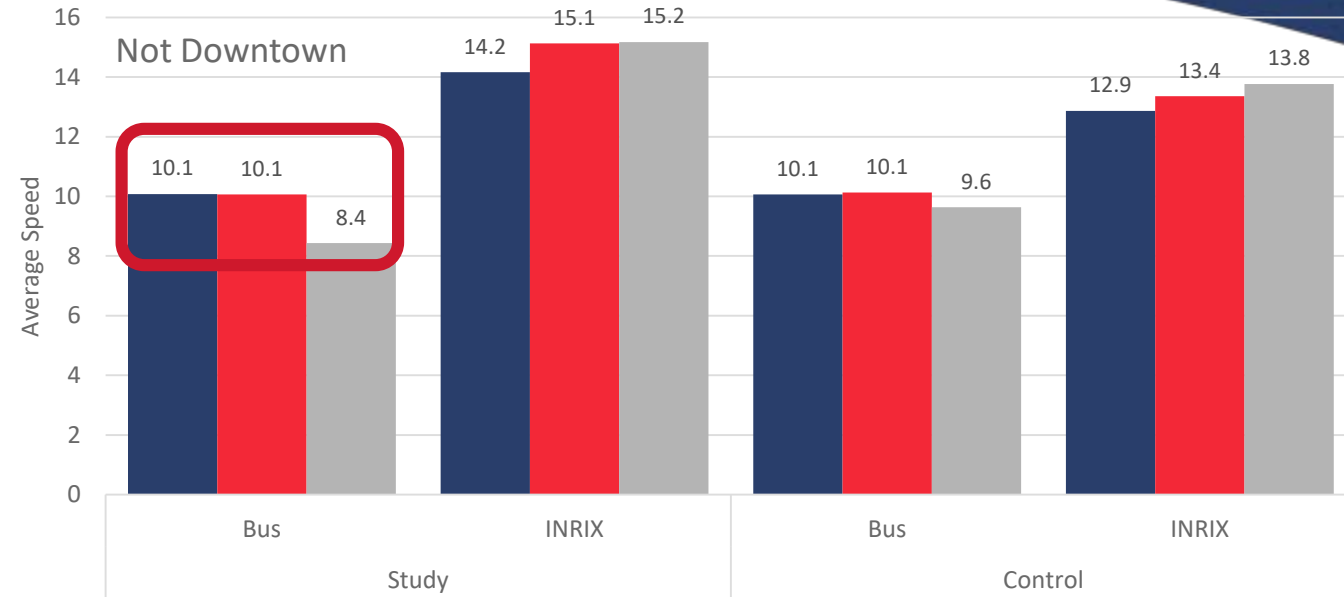
a. Methodology

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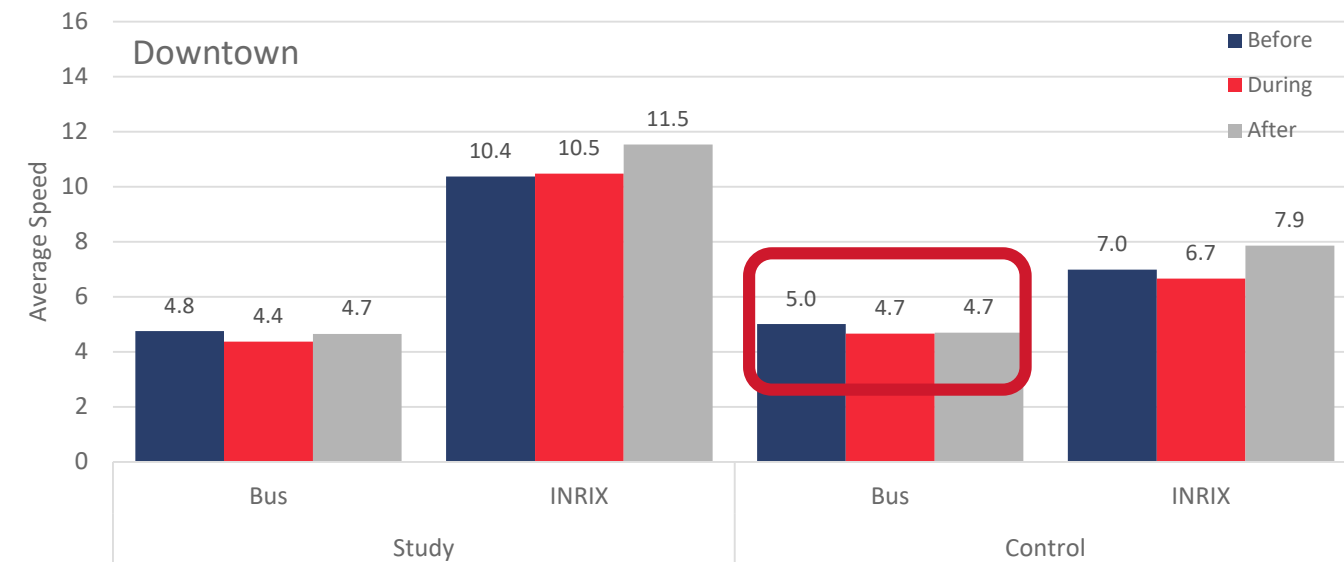
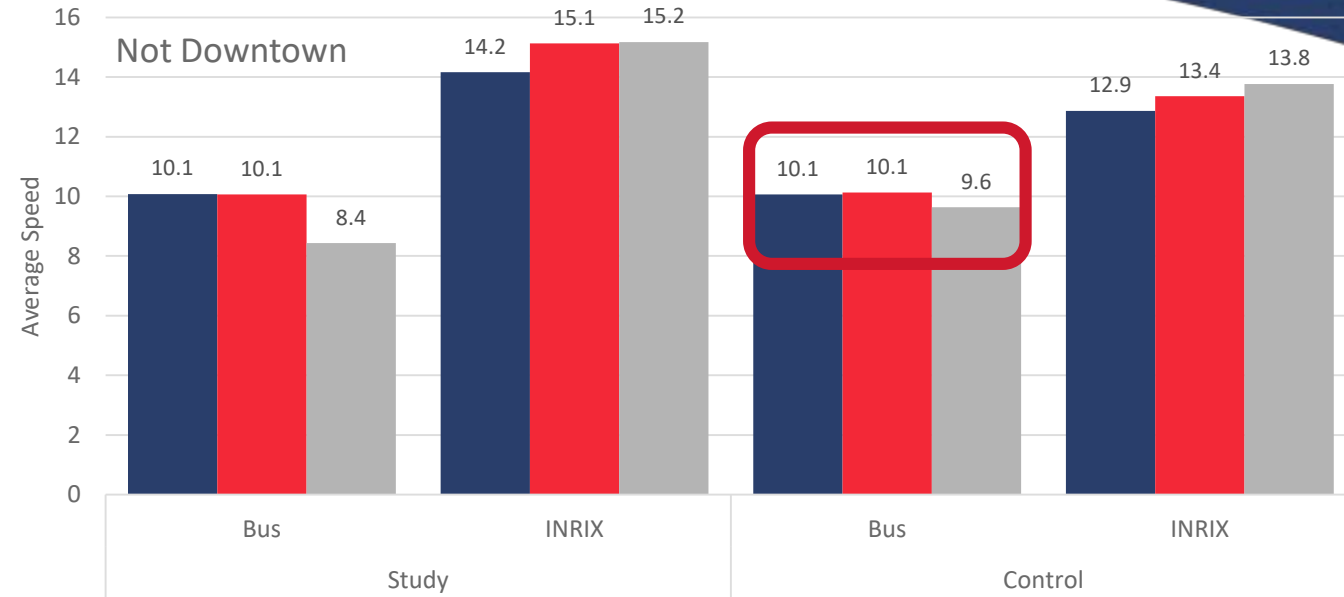
a. Methodology

**b. Results**

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# Average On Time Percent

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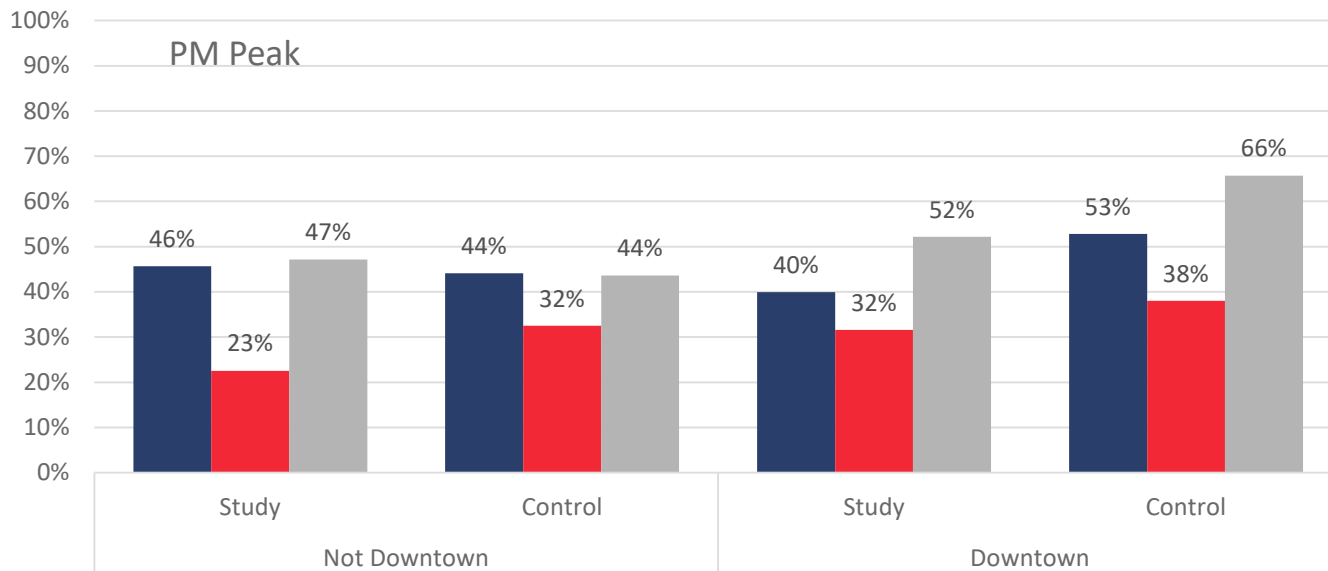
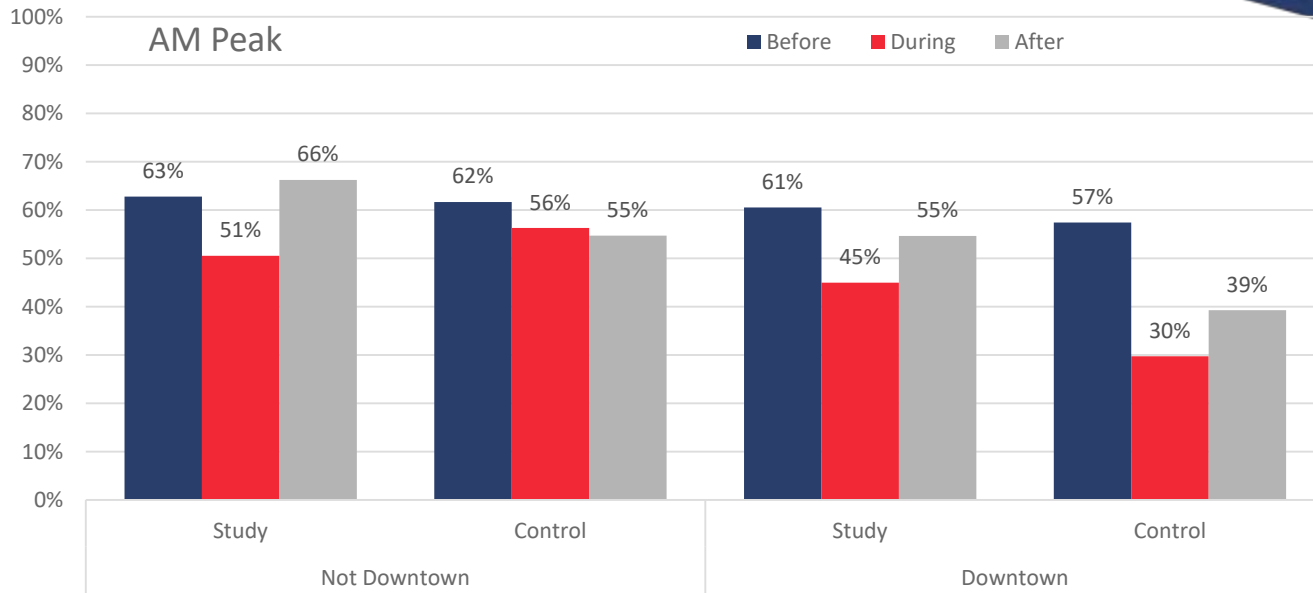
a. Methodology

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# Limitations & Lessons Learned



- Difficult to compare year to year – schedule, bus stop & technology changes
- Difficult to find equivalent control corridors
- INRIX TMCs not equivalent to bus timepoint segments
- Unable to verify **implementation & enforcement**

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a. Methodology

b. Results

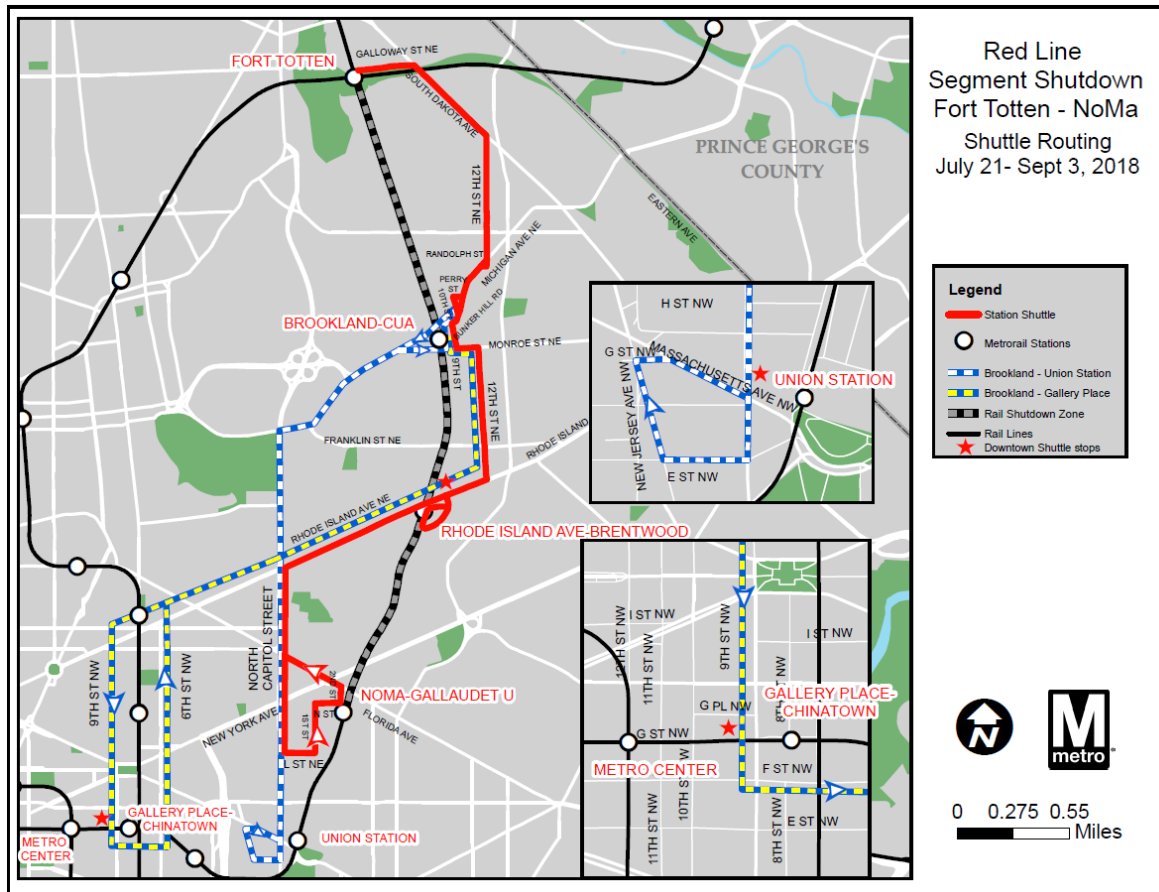
c. **Limitations**

3. Bus Lane

4. Lessons Learned & Recommendations

# Red Line Shutdown

- Red Line Shutdown: 7/21/18 – 9/3/18
  - Rhode Island Ave and Brookland stations closed
  - No Red Line service between Fort Totten and NoMa-Gallaudet U
- 4/2018: WMATA & DDOT begin planning



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a. Bus Performance

b. Compliance

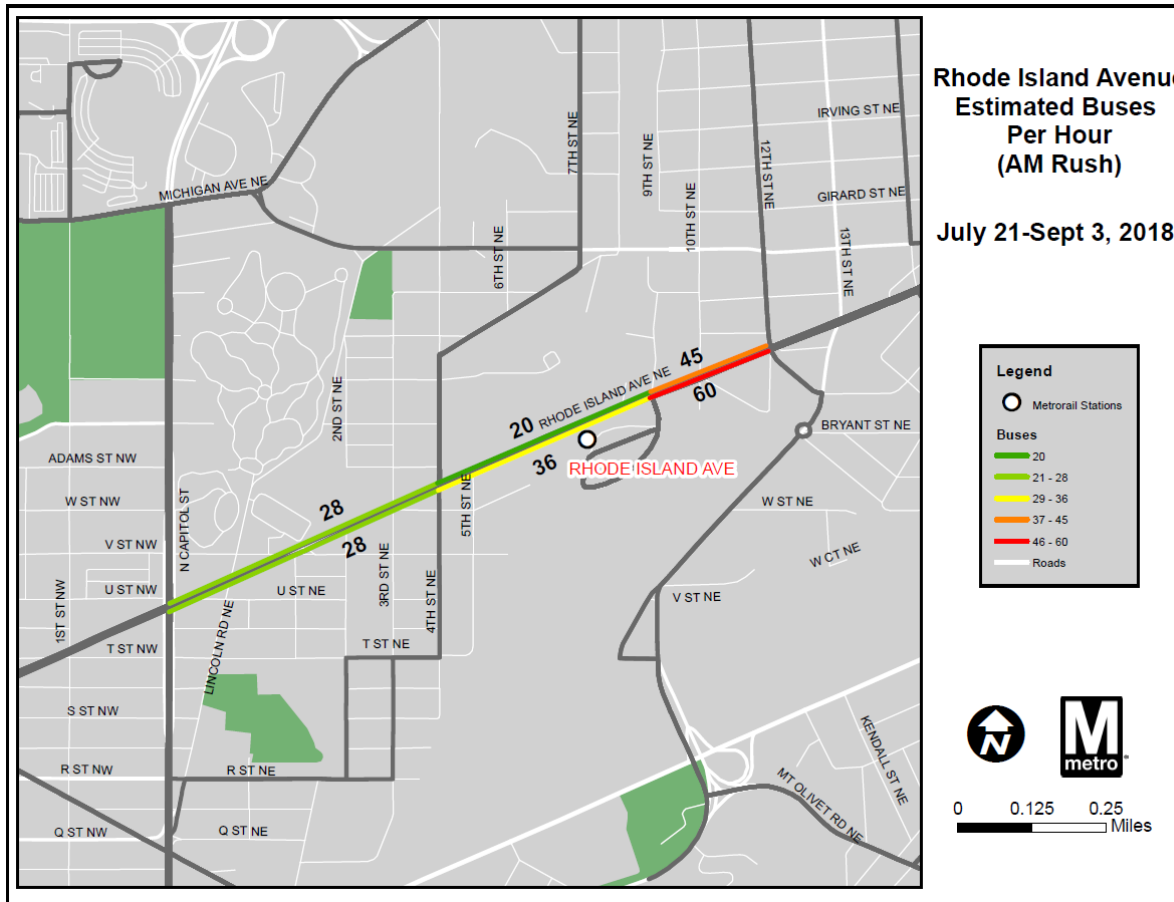
c. Limitations

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# Temporary Bus Lane

- North Capitol Street to 12<sup>th</sup> Street NE
- Additional bus service and shuttle services



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Bus Lane signs & pavement markings



7am – 7pm parking restrictions, Mon-Sat



DMS

# Bus Performance - Methodology

## G9 Bus Travel Speeds

- WMATA AVL data
- Unit: timepoint pair segments

## G9 Bus Reliability (On-Time Performance)

- WMATA AVL data

### Times

## G9 Ridership

- WMATA APC data
- Unit: bus stop segments

- AM Peak: 6am-9am
- PM Peak: 3pm-7pm

### Dates

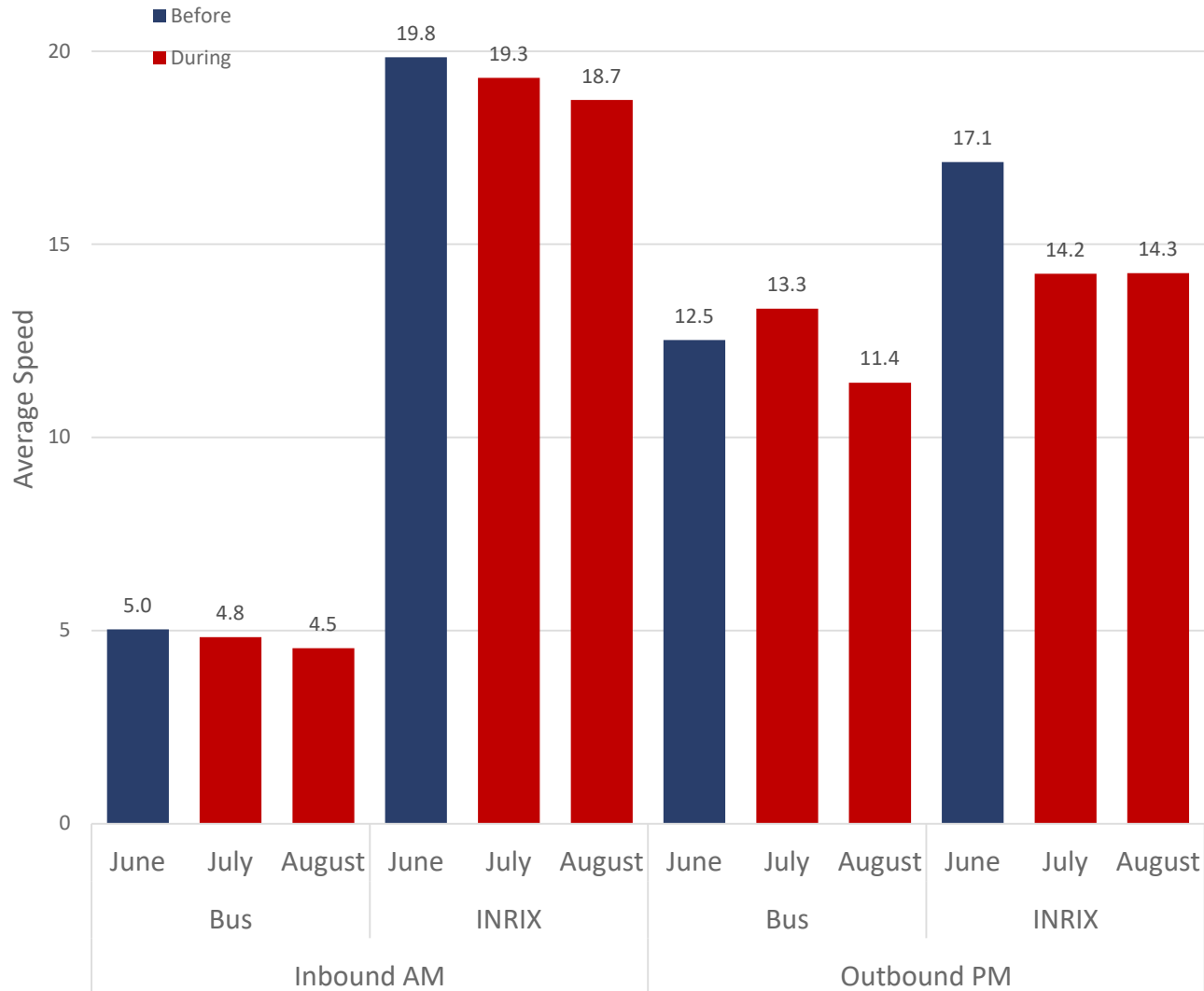
## General Travel Speeds

- INRIX data
- Unit: TMC segments

- Before: June 26-28
- During: July 24-26
- During: August 7-9

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# Bus & General Travel Speeds



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a. Bus Performance

- Methodology

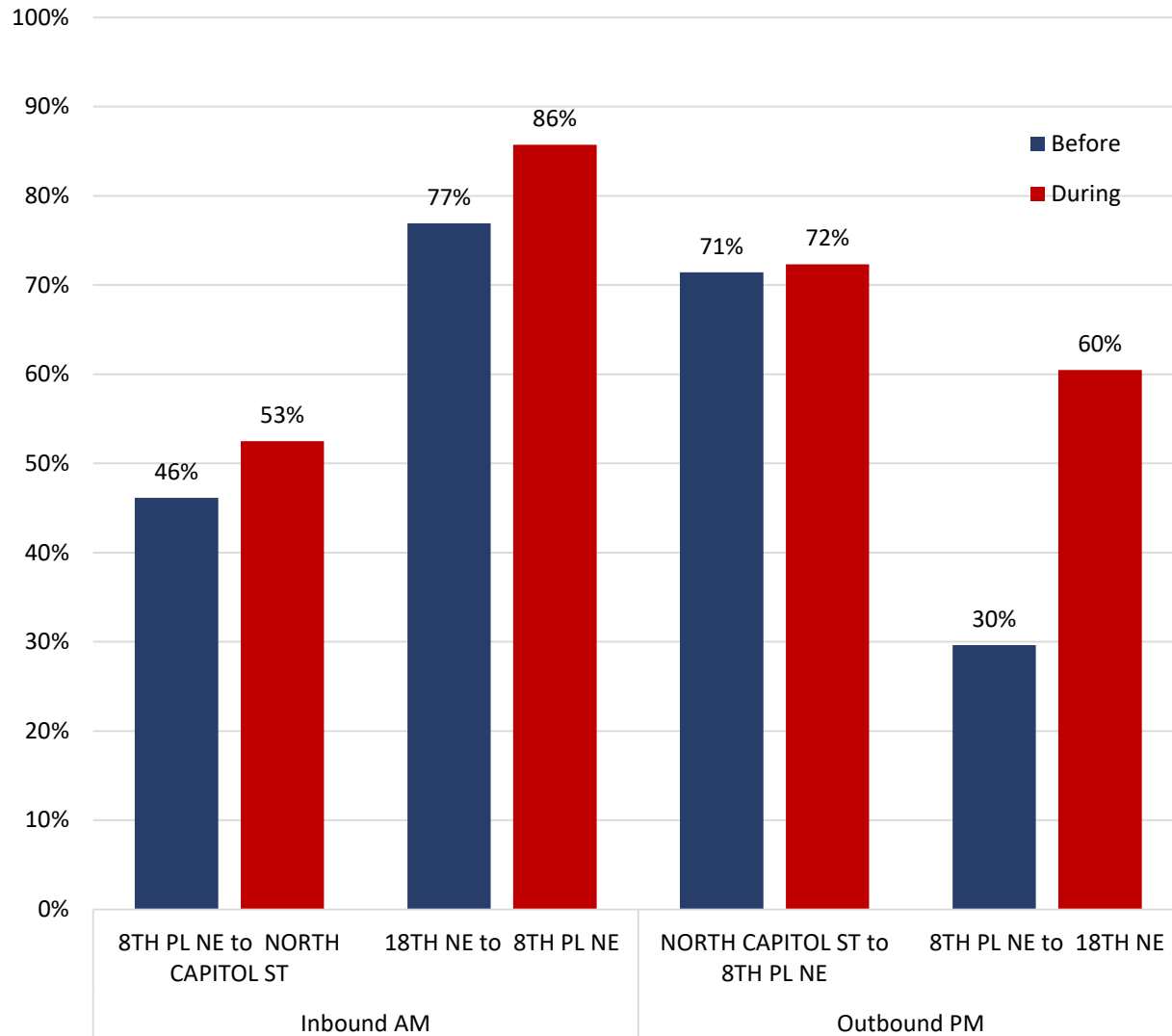
- Results

b. Compliance

c. Limitations

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# On Time Performance



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a. Bus Performance

- Methodology

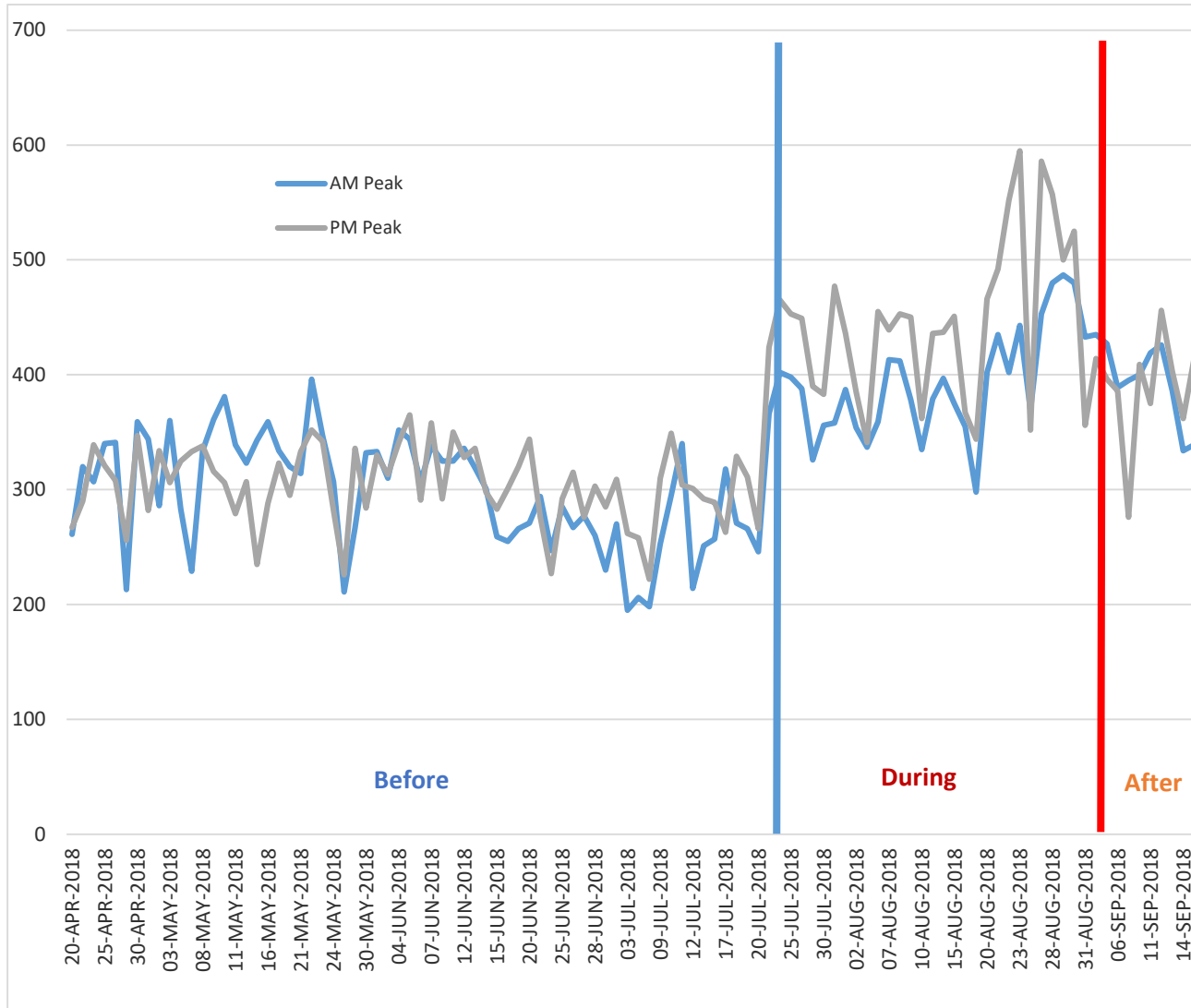
- Results

b. Compliance

c. Limitations

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# Ridership



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- Private vehicles in bus lane, Buses not in bus lane

## DDOT

- Qualitative Observations: 7/31 & 8/1
- Traffic Counts: 8/7 & 8/29
- Locations: Lincoln Avenue NE, North of 5th Street NE, and 10th Street NE
- Times: 8:30am-10:15 am and 11:15am-12:30pm

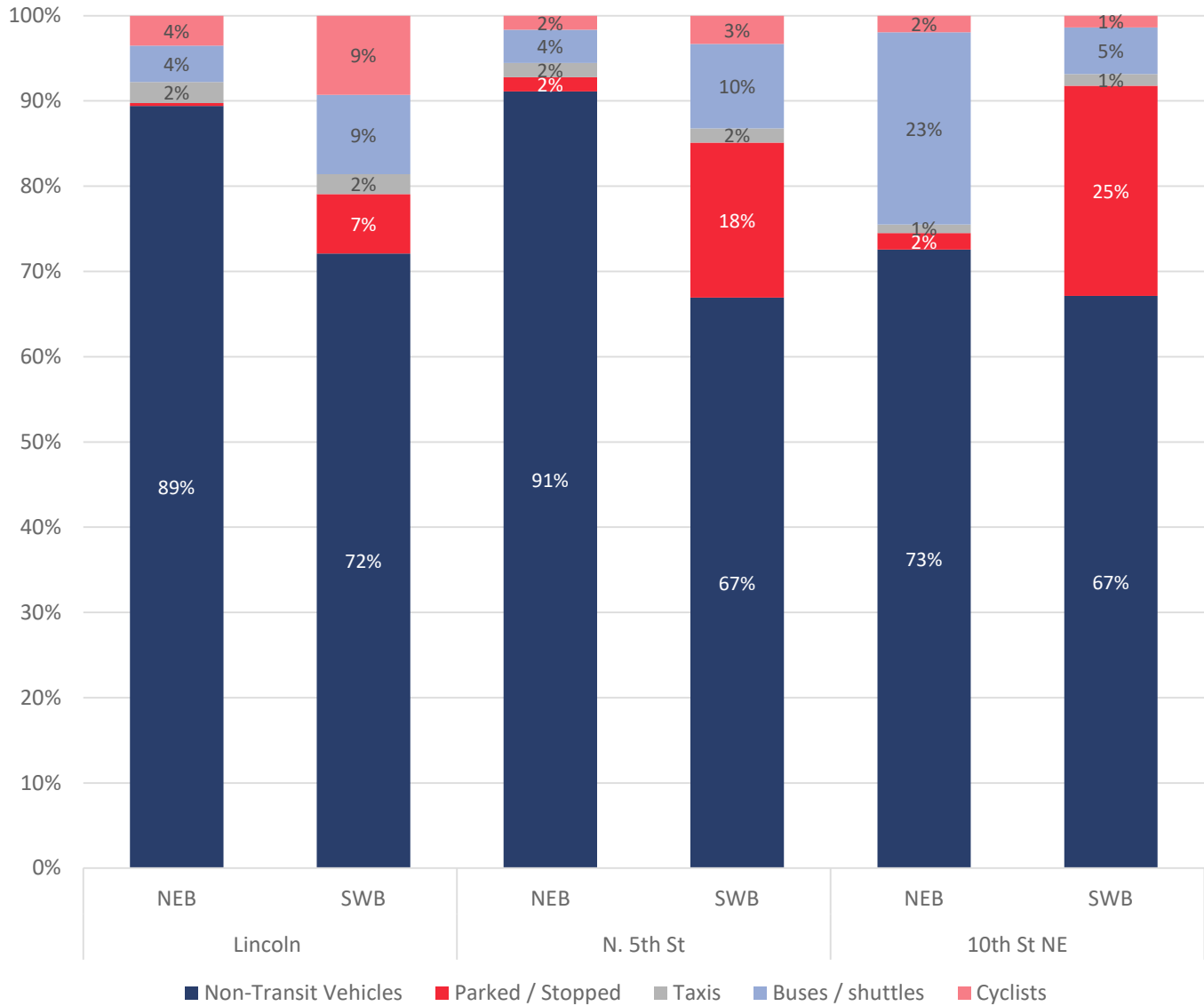
## HUTRC

- Traffic Counts: 8/7
- Tube Counters & Cameras
- Times: 6am-7pm
- Locations: 200, 600 & 1000 blocks

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# Compliance – Bus Lane Usage

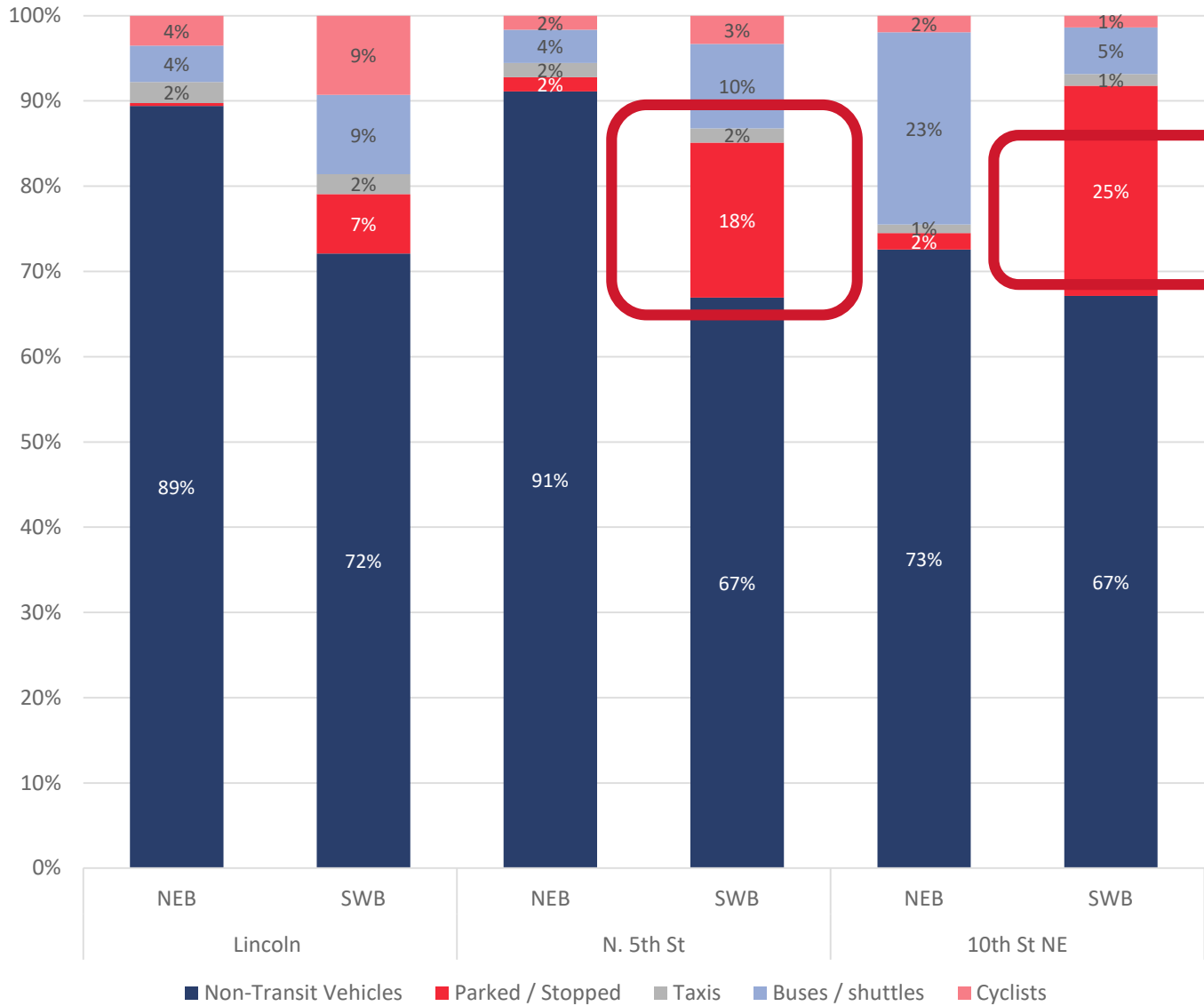
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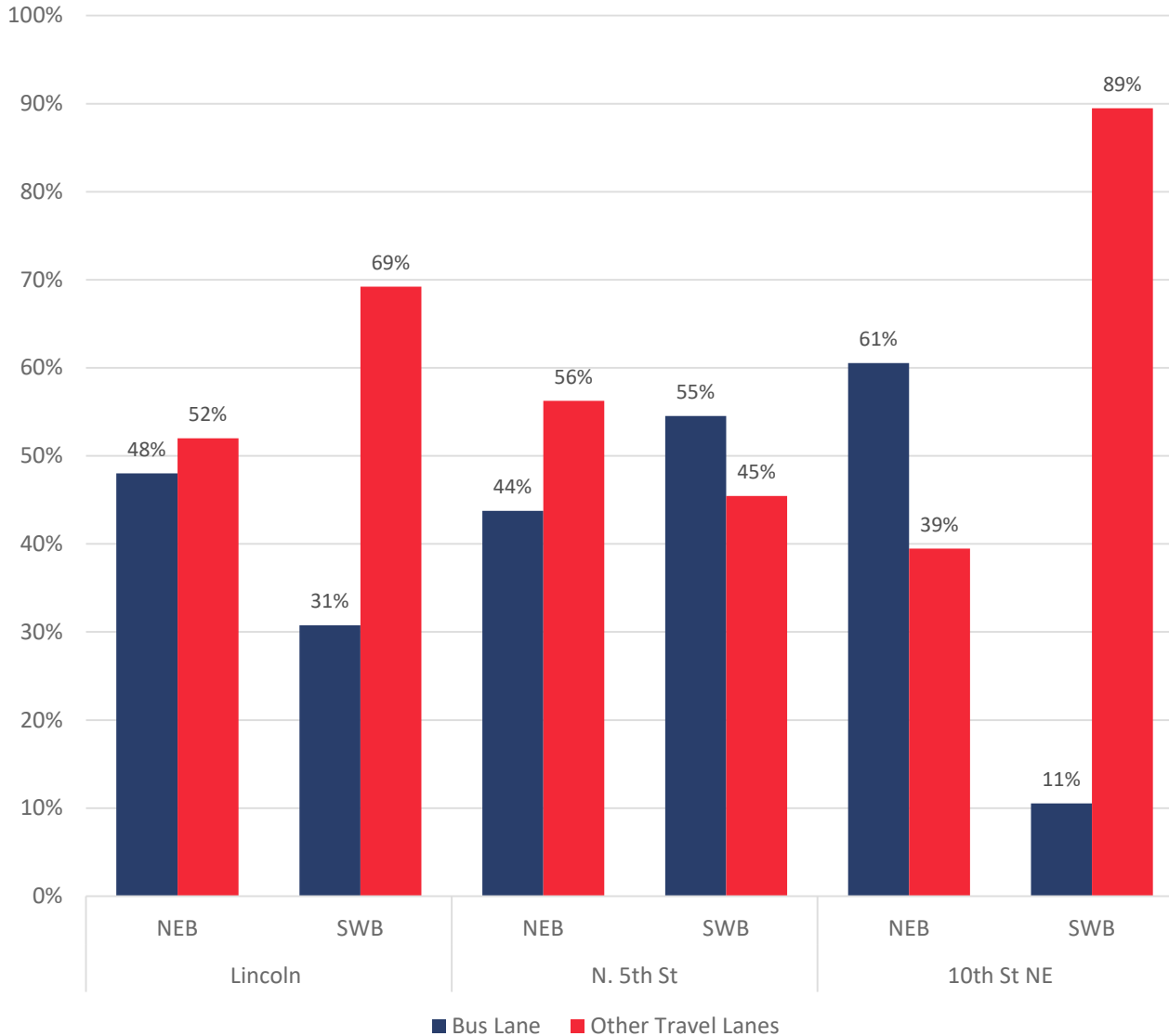


# Compliance – Bus Lane Usage

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# Compliance – Buses



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a. Bus Performance

b. Compliance

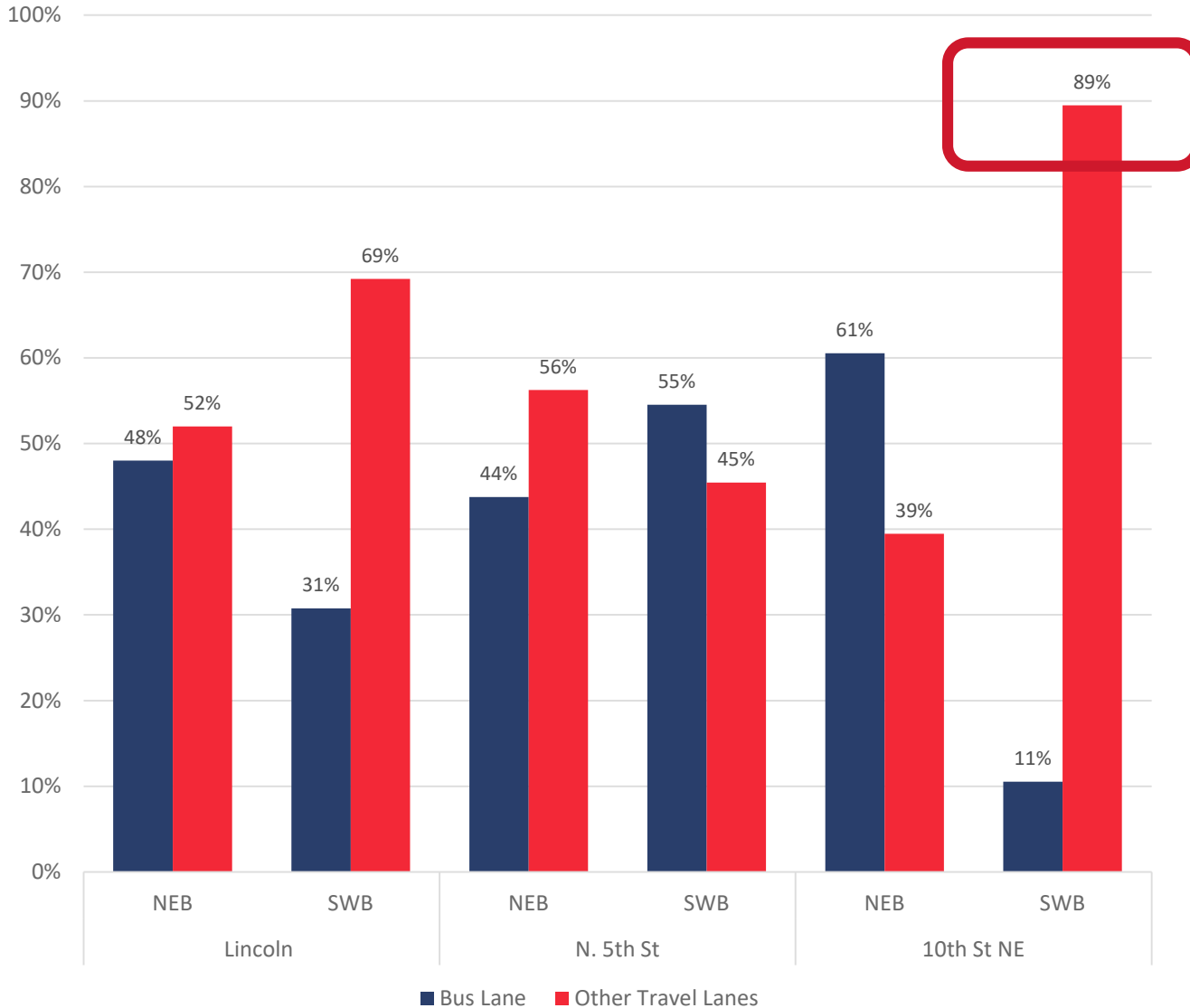
- Methodology

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# Compliance – Buses



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# Limitations

## Implementation

- Pavement markings' visibility/frequency
- DMS locations
- Temporary signage removed
- Bus left turns

## Enforcement

New evaluation process



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# Recommendations

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## Takeaways

- Extended Rush Hour Parking Restrictions
  - Unclear results: potential implementation / enforcement issues
- RI Bus Lane
  - Continued higher ridership of G9 after shutdown ended
  - Improved reliability

## Recommendations

- Early, multi-agency coordination
- Enforcement
  - Incorporate incentives for all agencies
  - Deploy increased staff presence
  - Enhanced visibility of markings & signage
  - Automated enforcement
- Evaluation – include early in project planning process



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Thank You!

Questions?

Diane Patterson  
Diane.Patterson2@dc.gov  
[www.linkedin.com/in/dpatterson202](http://www.linkedin.com/in/dpatterson202)

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