

# BUS LANE ENFORCEMENT STUDY

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## FY17 UPWP WMATA Technical Assistance Program Study Results and Final Report

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TPB Technical Committee  
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# Presentation Outline

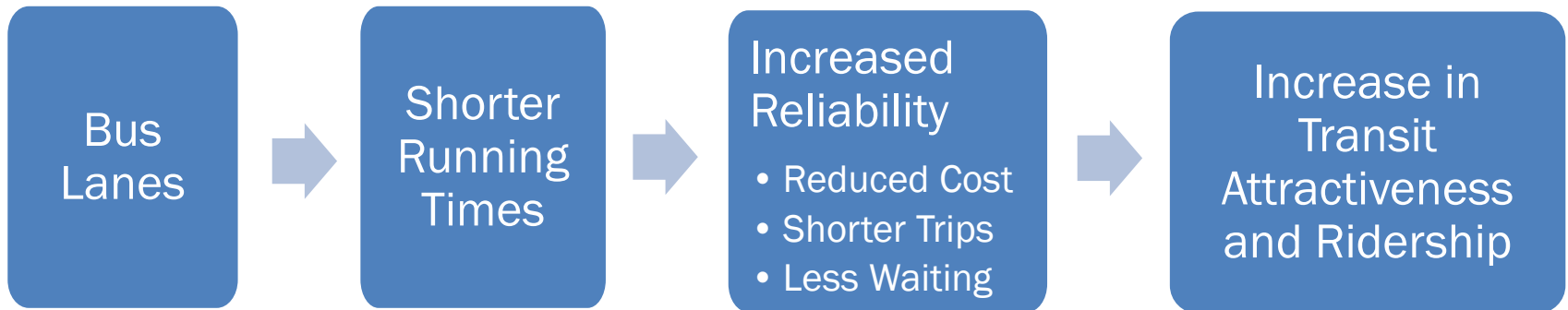
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- Purpose of study, starting point, and results
- Study work tasks
- Key findings
- Accessing the final report



# Purpose of Study

- Bus lanes gaining popularity as a low-cost solution to improve transit operations in the National Capital Region as congestion increases

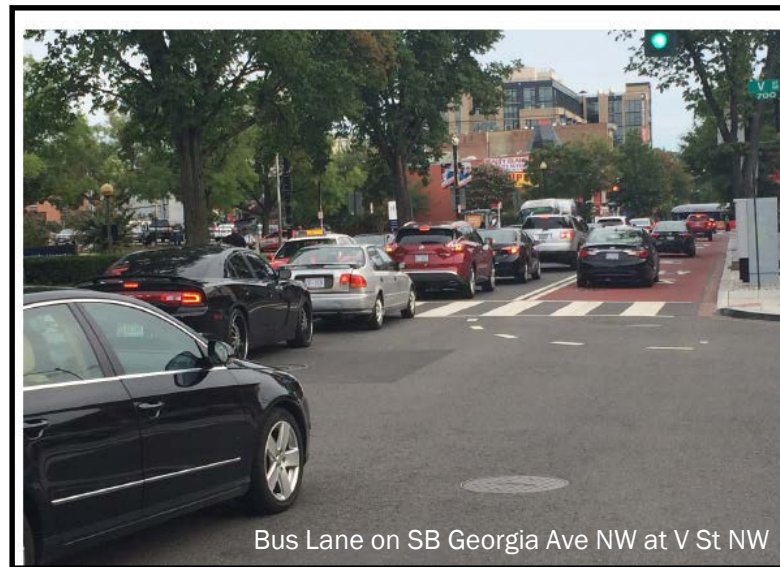


## Bus Lanes: "Help" or "Hype?"

- RFP issued; consulting team of Kittelson & Associates (KAI) and Foursquare Integrated Transportation Planning (FITP) selected to lead study

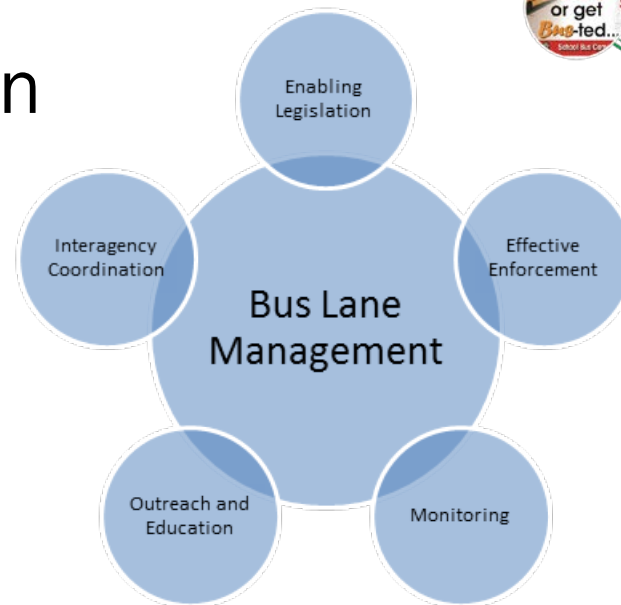
# Study Starting Point

- Bus lanes have been gaining popularity, but there are mixed results with their success
- The study aimed to answer four reoccurring questions about urban bus lanes:
  - How do we build bus lanes that are effective and safe?
  - How do we best educate all users of the right-of-way surrounding bus lanes?
  - What kind of legislative initiatives should be introduced to enable enforcement of these lanes?
  - What are the most effective bus lane enforcement strategies?



# Identifying Success

- Effective Planning
- Physical Design Considerations
- Bus Operations
- Enforcement
- Outreach/Education Strategies
- Legislative Actions
- Policy
- Monitoring



# Study Results

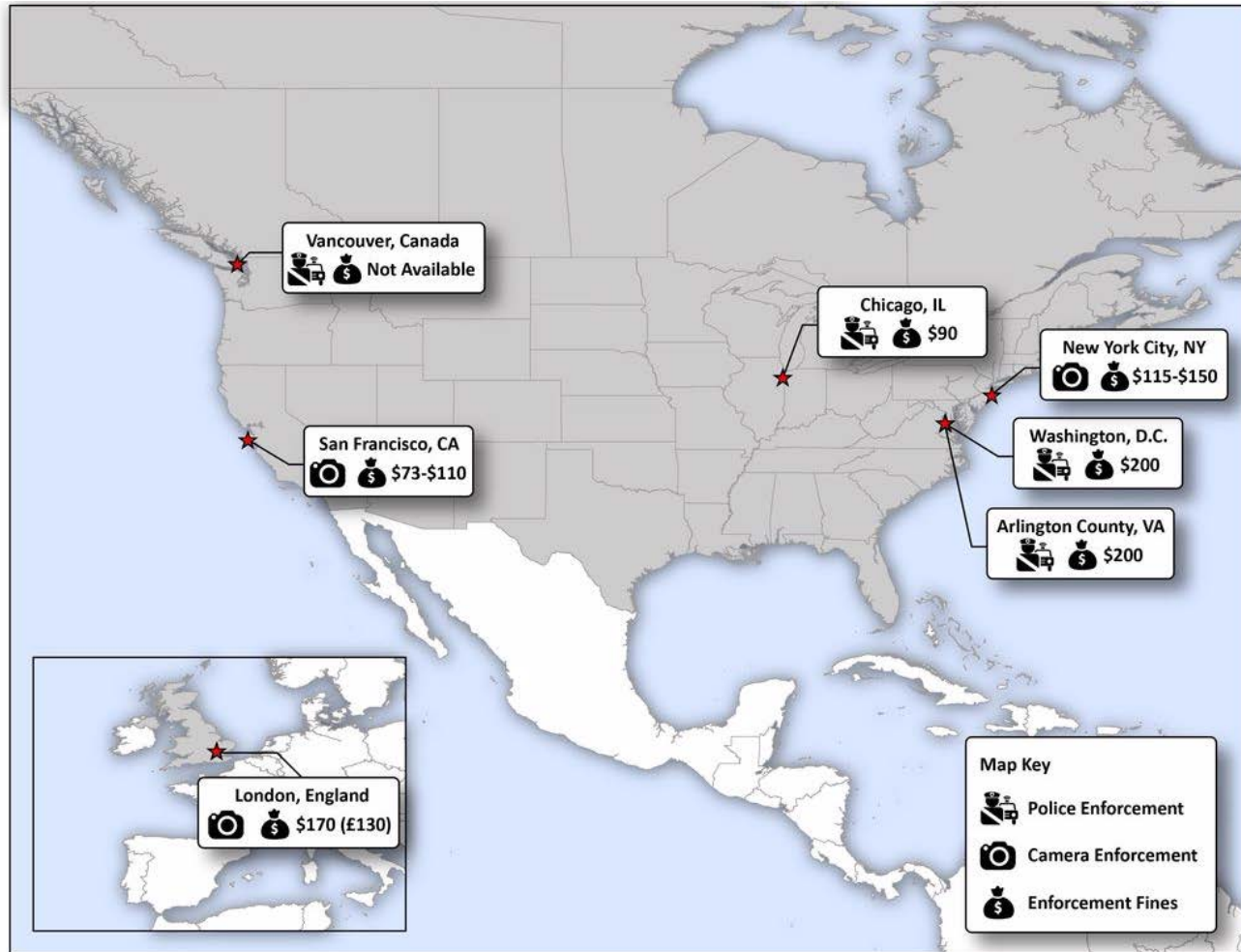
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- Identify strategies for effective bus lane management related to:
  - Stakeholder coordination
  - Enforcement
  - Legislation
  - Education and outreach
- Develop strategies for local jurisdictions
- Short-term implementation plan + monitoring
- Benefit-Cost Analysis (assessing value)

# Study Approach / Work Tasks



# State of the Practice Review: Bus Lane Enforcement Methods and Fines





# Regional Existing and Planned Bus Lanes: Agency Interviews

TPB Jurisdictions	Current/Planned Bus Lane	Year Completed or Implementation Phase
City of Alexandria, VA	Crystal City Potomac Yard Transitway	2014 - in operation as Metroway service
	West End Transitway	Currently in design, planned opening early 2020s
	VA 7 BRT*	Preliminary design anticipated to begin in late 2017, opening mid 2020s
Arlington County, VA	Crystal City Potomac Yard Transitway	2016 - in operation as Metroway Service
Montgomery County, MD	US 29 (Burtonsville to Silver Spring)	Preliminary design underway, planned opening late 2019/early 2020
	MD 586 (Veirs Mill Road, Rockville to Wheaton)	In planning
	MD 355 (Clarksburg to Bethesda)	Ongoing planning study
Fairfax County, VA	US 1 BRT (Embark Richmond Highway)	Ongoing planning into 2018
	VA 7 BRT	Preliminary design anticipated to being in late 2017, opening mid 2020s
Washington, DC (DDOT)	Georgia Avenue NW	2016 - in operation
	H Street NW and I Street NW	Ongoing planning study
	16th St NW	Preliminary design underway, planned opening in 2018-2020



Boarding Metroway in Crystal City



# Key Findings: Stakeholder Coordination

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- Interagency coordination is essential in the planning, design, construction stages, but also in the operational phase
- Many bus lanes will cross jurisdictional boundaries
  - The sponsoring agency must take the lead to identify key stakeholders and their role throughout the life-cycle of the bus lane
- Issues of concern that could require communication and collaboration are:
  - Curbside management; freight routing and loading; bike lanes; taxi stands; valet parking/drop off; shuttles



# Key Findings: Police Enforcement

- Limited enforcement increases violation rates
- Police enforcement could be challenging due to limited resources and/or conflicting priorities
- Transit agencies are rarely authorized to enforce bus lane restrictions, increasing reliance on police enforcement
- Pulling over vehicles in bus lanes can block buses
- Higher compliance (“effectiveness”) requires proper signage, education, and some level of enforcement



Sign on SB Georgia Ave NW

# Key Findings: Automated Enforcement

- Stationary cameras installed at selected locations or camera on buses
- Can generate citations for both moving and parking violations
- Automated enforcement and red paint found to be effective
- Legislation and education are important elements of automated enforcement

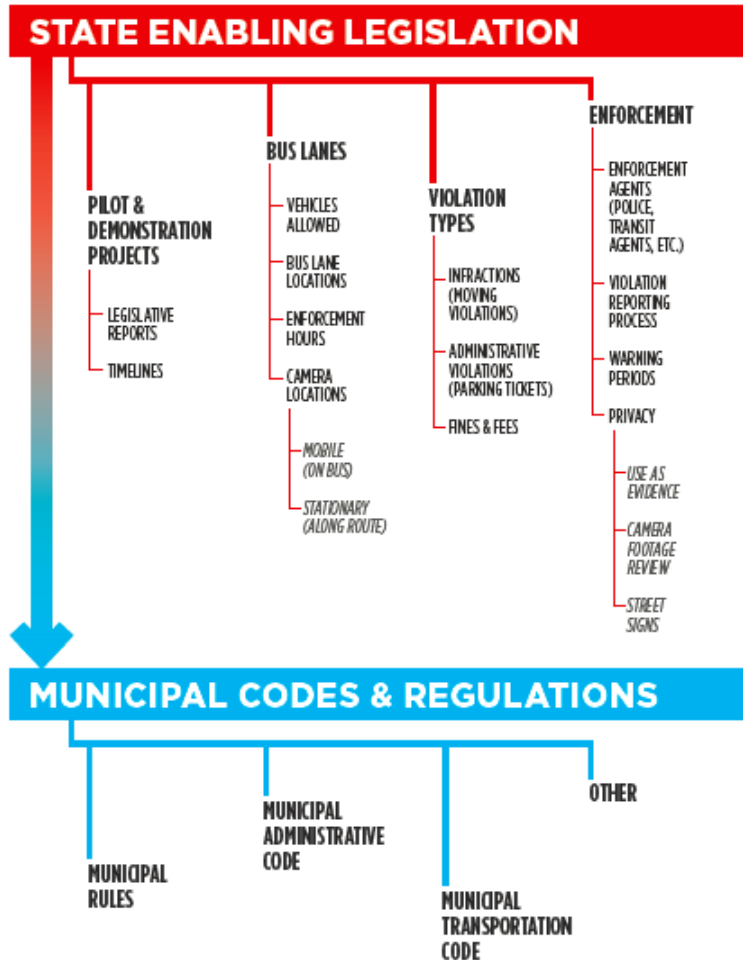


Top: on-bus camera, San Francisco, CA

Bottom: stationary camera, Cambridge, UK



# Key Findings: Legislation (for Automated Enforcement)

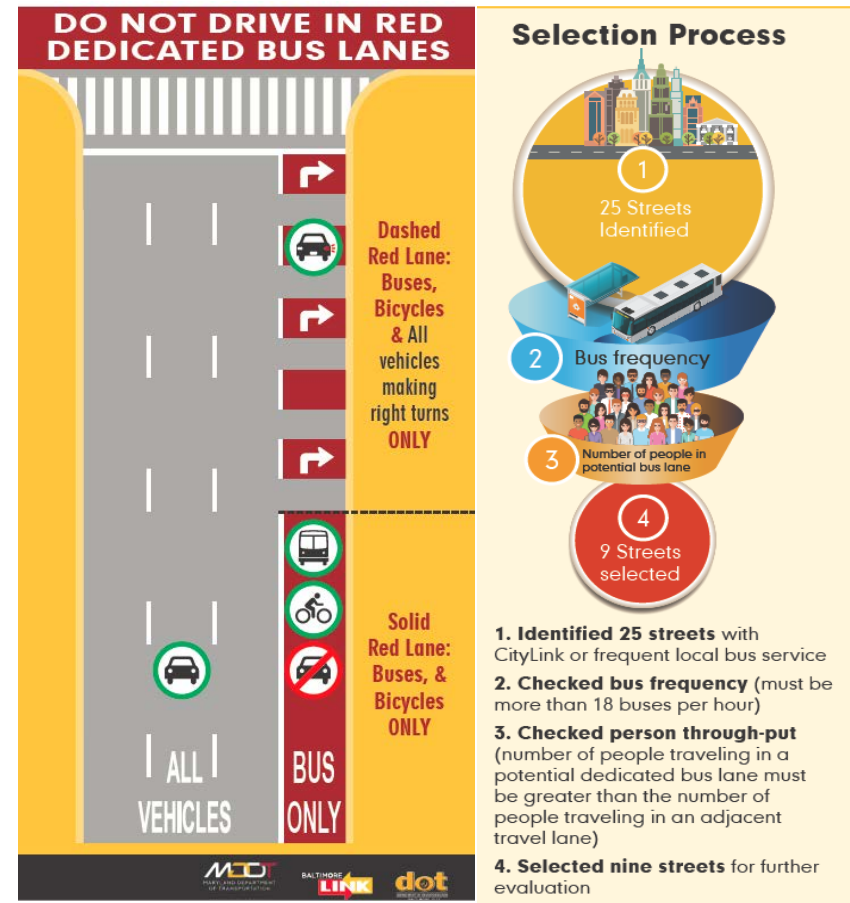


- Identify key corridors for a demonstration or pilot project
- Work with the General Assembly (MD or VA) or Council (DC) to develop draft enabling legislation
- Plan for a multi-phase process to move from pilot to permanent program
- Start the legislative process early
- Supplement with robust education and outreach program to allay privacy concerns



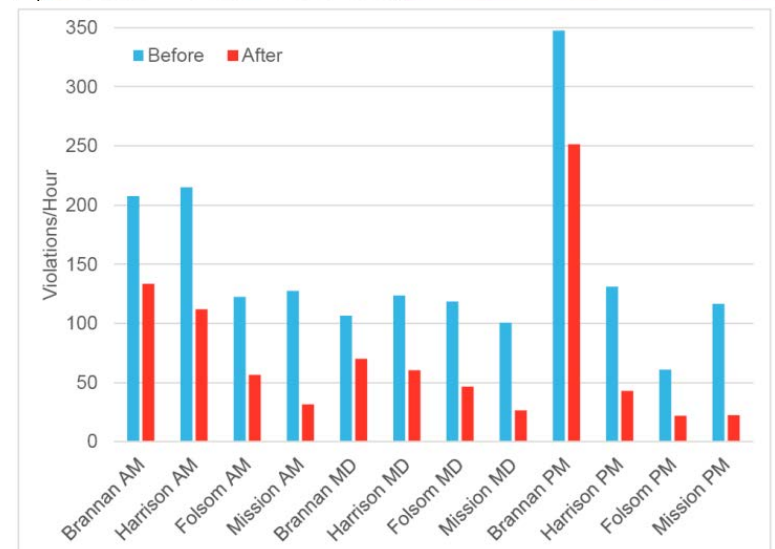
# Key Findings: Education

- Start messaging early and continue during and after implementation
- Target relevant populations and identify project partners
- Signal the exclusivity of bus lanes through striping, marking, signage
- Educate bus operators
- Provide simple, clear, and informative project details through various channels

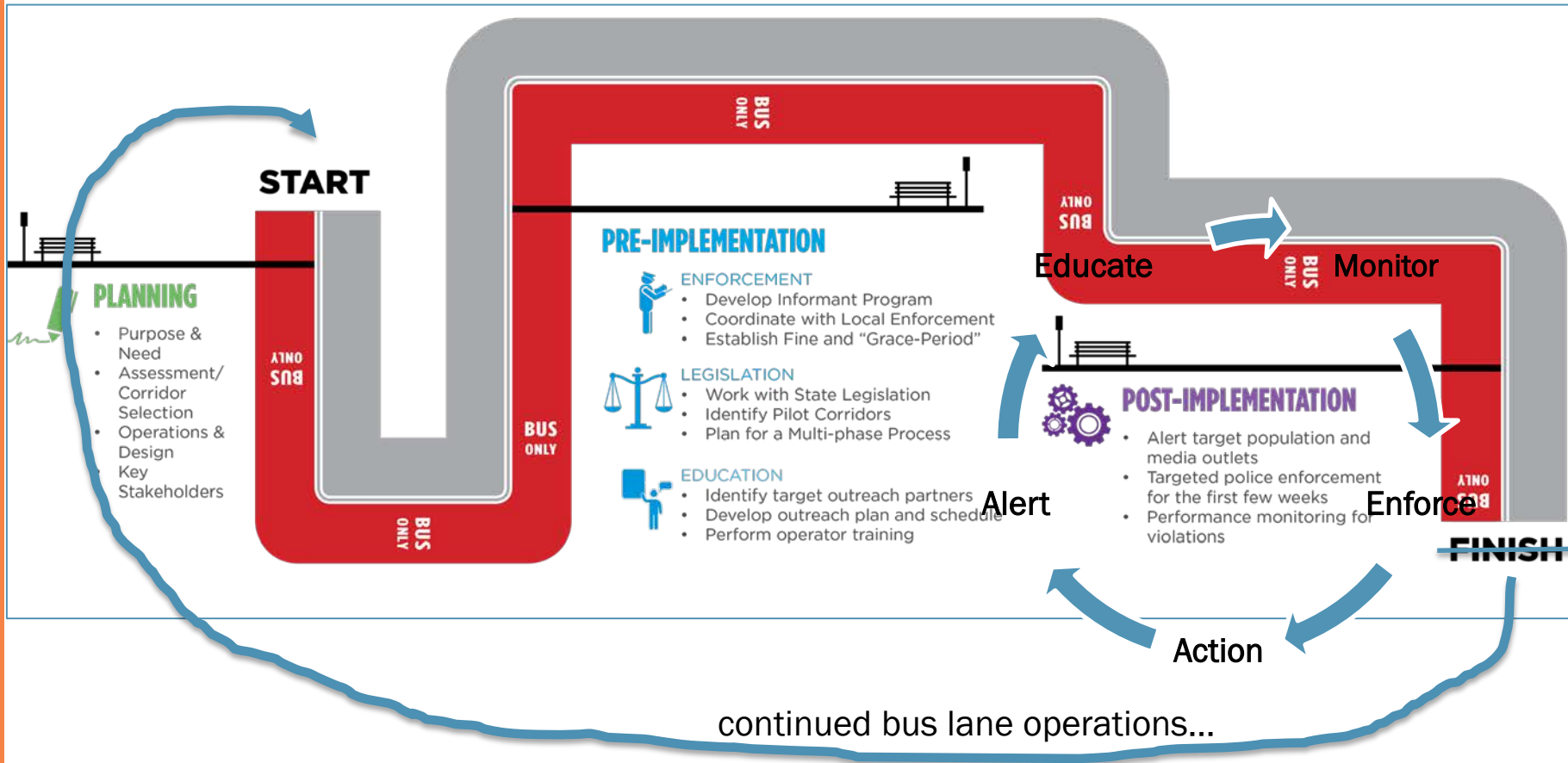


# Post-Implementation / Monitoring

- Continuing education, public outreach, and interagency coordination
- Performance measurement
- Compliance (track citations)
- Repeat offenders
- Operational improvements (e.g., bus speed, reliability)



# Bus Lane Action Plan





# Benefit-Cost Analysis (BCA)

- Transit Cooperative Research Program (TCRP) Report 165: Transit Capacity and Quality of Service Manual (TCQSM) and other TCRP Reports used to estimate costs and benefits
- Observed results from SFMTA, NYCDOT, and DDOT as a reality check
- Cost Elements: Bus lane capital and maintenance cost; enforcement cost (manual and automated); red paint cost (if applied)
- Benefit Elements: Passenger travel time savings; fleet savings

Implementation Strategies <sup>1</sup>	Bus Lane Capital Cost (\$)	Bus Lane Maintenance Cost (\$/year)	Enforcement Capital Cost (\$)	Enforcement Maintenance Cost (\$/year)
Standard Lane Treatment - No Enforcement	\$100,000	\$10,000	-	-
Standard Lane Treatment - Low Manual Enforcement	\$100,000	\$10,000	-	\$12,375
Standard Lane Treatment - Moderate Manual Enforcement	\$100,000	\$10,000	-	\$49,500
Standard Lane Treatment - Maximum Manual Enforcement	\$100,000	\$10,000	-	\$99,000
Standard Lane Treatment - Bus-Mounted Automated Enforcement	\$100,000	\$10,000	\$142,500	\$11,250
Standard Lane Treatment - Stationary Automated Enforcement <sup>2</sup>	\$100,000	\$10,000	\$129,891	\$41,382
Red Paint Bus Lanes <sup>3</sup> - No Enforcement	\$308,000	\$10,000	-	-
Red Paint Bus Lanes <sup>3</sup> - Low Manual Enforcement	\$308,000	\$10,000	-	\$12,375
Red Paint Bus Lanes <sup>3</sup> - Moderate Manual Enforcement	\$308,000	\$10,000	-	\$49,500
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Red Paint Bus Lanes <sup>3</sup> - Stationary Automated Enforcement <sup>2</sup>	\$308,000	\$10,000	\$129,891	\$41,382

<sup>1</sup> Assumes one (1) year of implementation and operation along a one (1) mile corridor running with a frequency of fifteen (15) buses per hour

<sup>2</sup> Assumes two (2) enforcement locations per mile, and two (2) cameras per enforcement location

<sup>3</sup> Red paint needs to be re-applied every five (5) years



# Report Available as a Regional Resource



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June 2017



National Capital Region  
Transportation Planning Board



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