

Assessing Impacts of Bus Lane Moving Violations on Transit Delay

2026 ITE Western District Meeting

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Date: 6/29/26

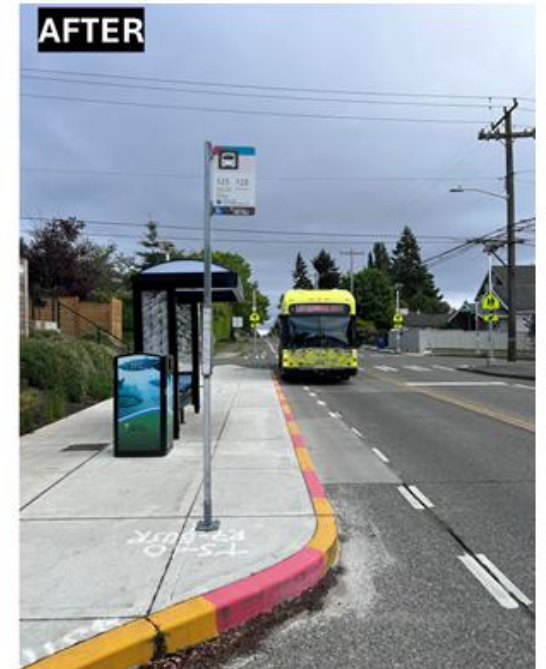
Agenda

- Background
- Methods
- Results
- Conclusions

Transit Spot Improvements Program

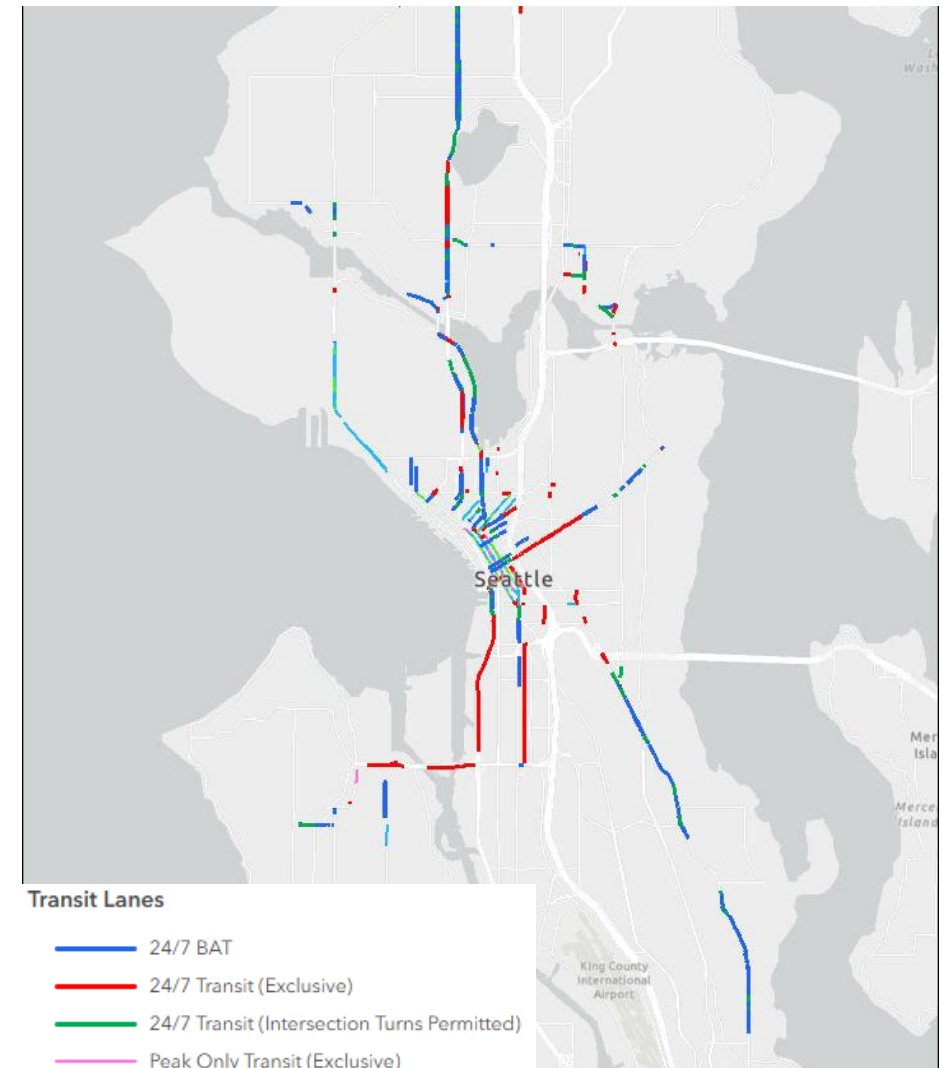
Program Goals

1. Reduce delays in travel time and increase reliability for bus operations.
2. Improve safety for transit riders, bicyclists, pedestrians, and drivers.
3. Improve passenger experience by making passenger facilities more accessible and comfortable.



Bus Lanes in Seattle

- 54.6 miles of transit lanes
 - 12% of total transit network
- 77% (~42 miles) restricted 24/7
- 29% (~16 miles) exclusive to transit
- Lane Types
 - Business Access and Transit (BAT)
 - Intersection Turns Permitted
 - Exclusive



Bus Lane Moving Violations

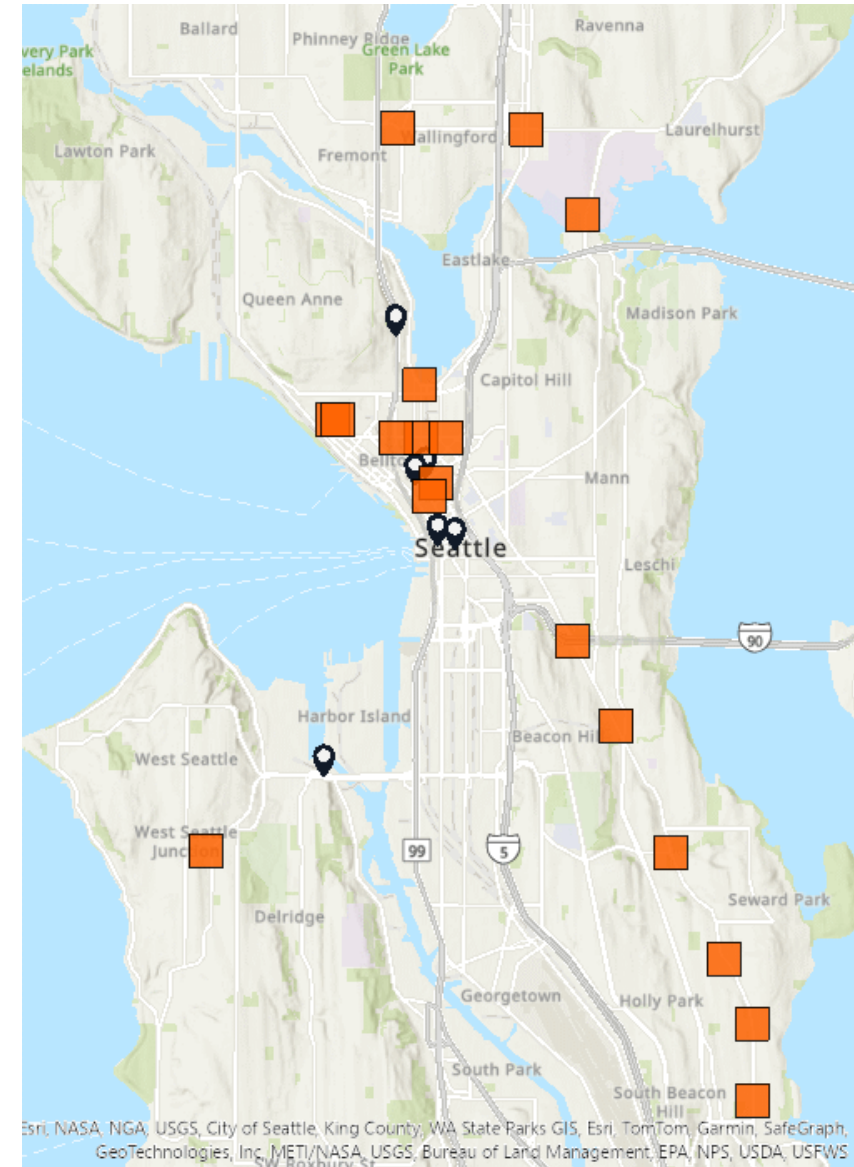
- Moving violation
 - Driving through intersection in bus lane
 - Merging across solid white line
- Conflict points between buses and GP vehicles
 - Potential safety issues
 - Operator stress
- Study goals
 - Identify impacts on delay, safety issues
 - Assess potential enforcement camera locations



Bus lane moving violation

Study methods

- August-September 2024
- 18 locations
- 1-hour observation (typ. 4-5 PM)
- Categorize by vehicle type



2024 study locations

Sample Calculation

Mode Split Observations							
Street Name: SB Rainier Ave @ Dearborn St							
Date: 7/20/21							
Time:	4:20 PM	4:35 PM	4:50 PM	5:05 PM	Total	Occupancy	Total persons
	4:35 PM	4:50 PM	5:05 PM	5:20 PM			
SOV	8	10	4	6	28	1	28
2OV	3	5	1	2	11	2	22
3+OV*					0	3	0
Bus**	3	1	1	3	8	25	200
Bike/Motorcycle					0	1	0
Unknown***					0	0	0
Total	14	16	6	11	47		250
				w/ bikes	w/o bikes		
Violation Rate:				20%	20%		

Total **people** violations = 28 + 22 = 50

Total **people** using bus lane = 200 + 22 + 28 = 250

Violation Rate = (50 / 250) * 100 = 20%

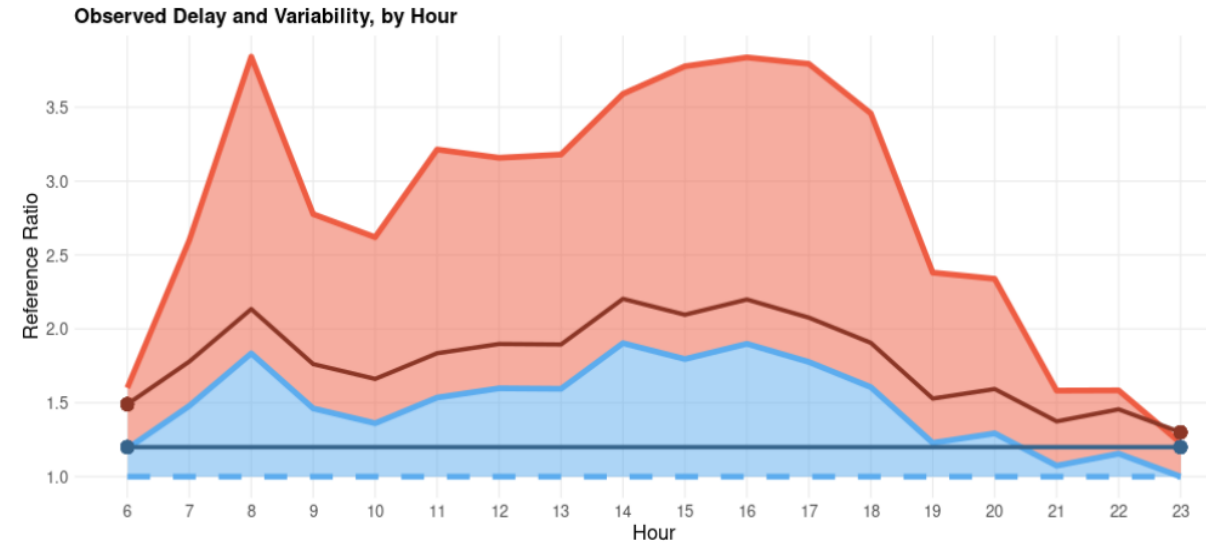
Transit Delay Data

- Delay

- Median travel time/minimum hourly median travel time
- Target: 1.2 ($\leq 20\%$ delay from free-flow conditions)

- Variability

- Difference between delay and 80th percentile reference ratio
- Target: 0.3 above delay



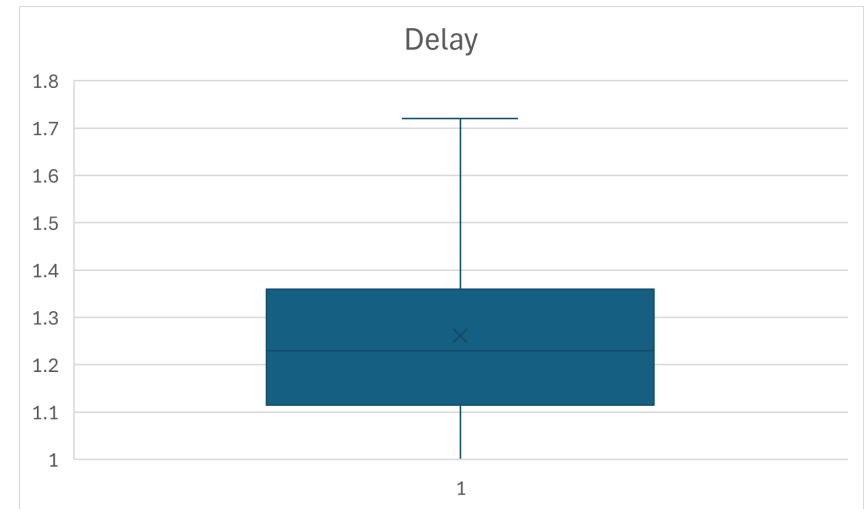
Results

- Violations

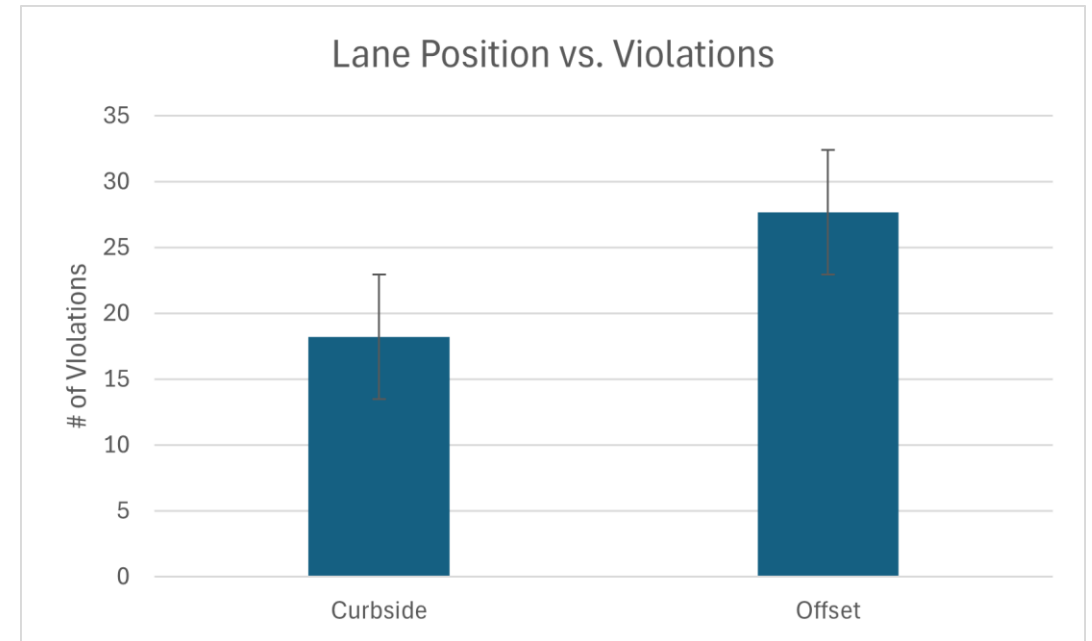
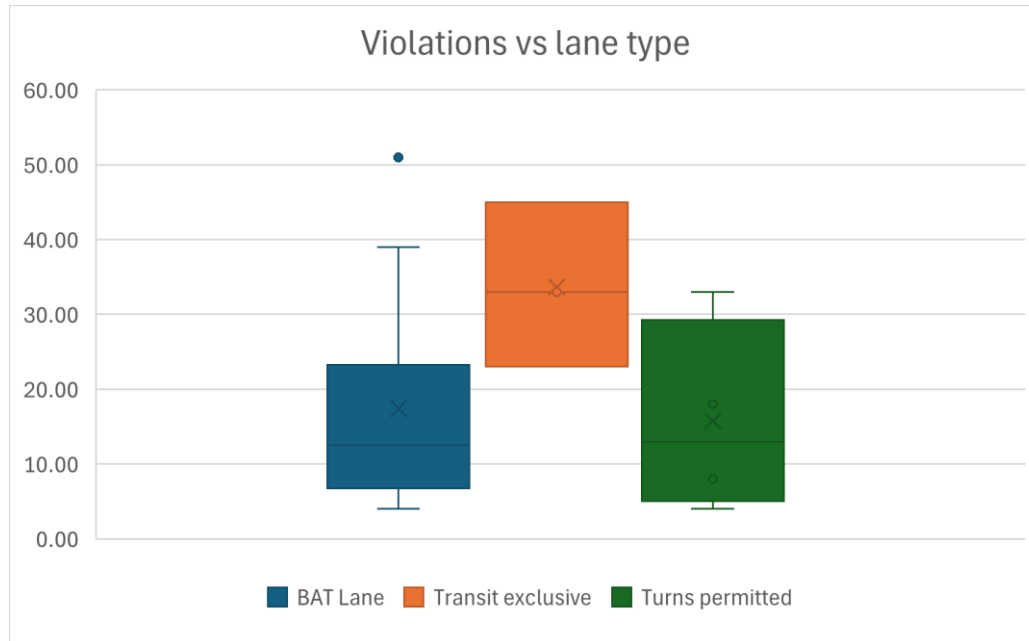
- Median: 16
- Violation rate: 61%

- Delay

- Median: 1.26
- Highest delay: 1.72



Violation data

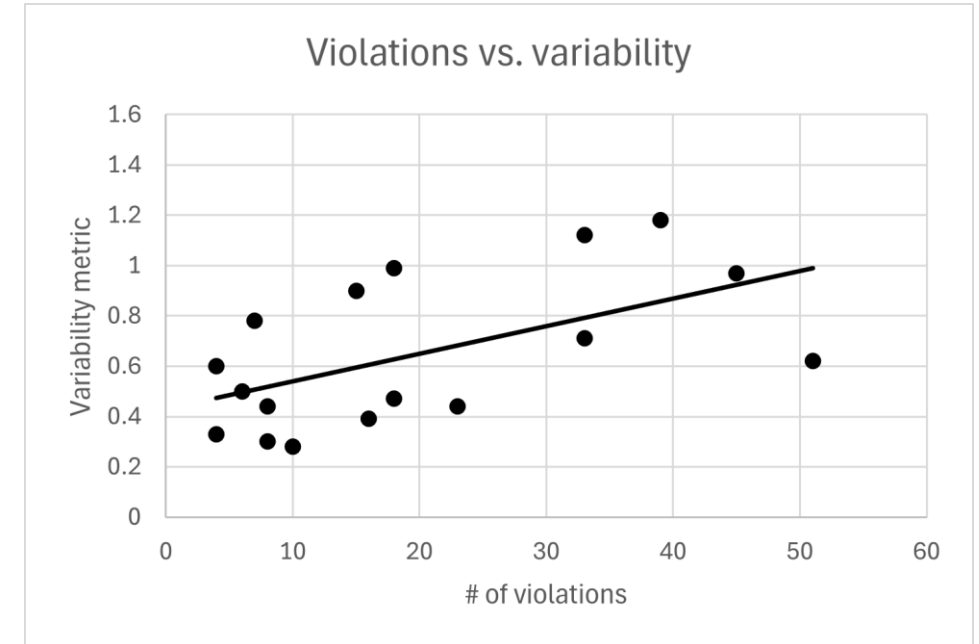
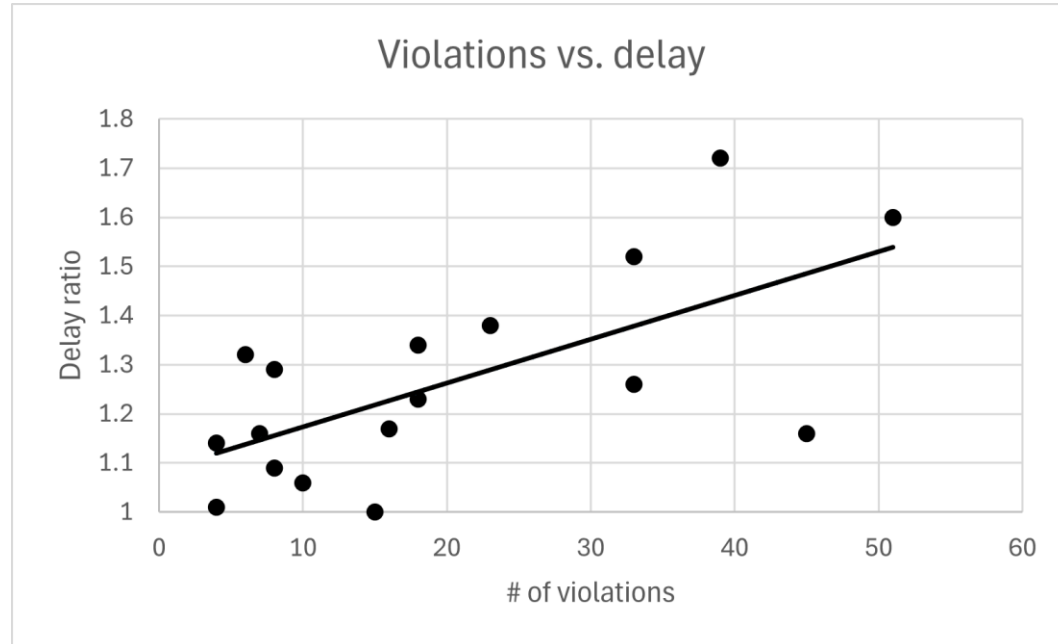


SB Rainier Ave S and S Alaska St

- Highest # of violations
- 2nd-highest delay
- Violations may be due to congestion during peak hours
- SB vehicles use RT only lane to pass
 - Delays SB buses serving farside stop



Correlating Violations to Delay



Conclusions

- Factors causing moving violations in bus lanes:
 - Congestion
 - Lane design
 - Lack of enforcement
- Future studies
 - Longer study period
 - Wider range of locations
 - Collect data on safety issues
 - Speeding
 - Near-miss collisions

Questions?

