MTA ACE Enforcement: Rider Experience & Route Impacts

Analysis of Bus Speeds, Violations, and Equity

Quarter / Month Year

Presented by

Full Name 1

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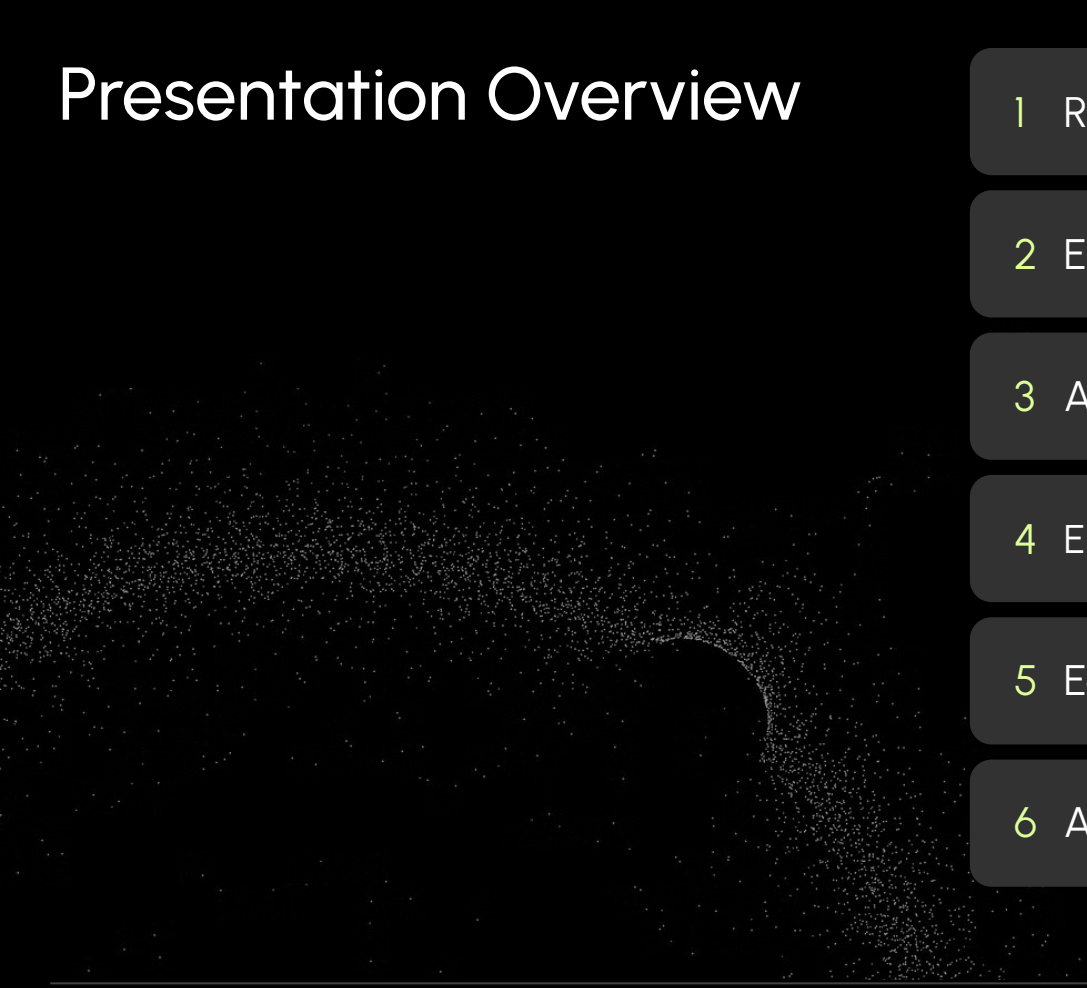
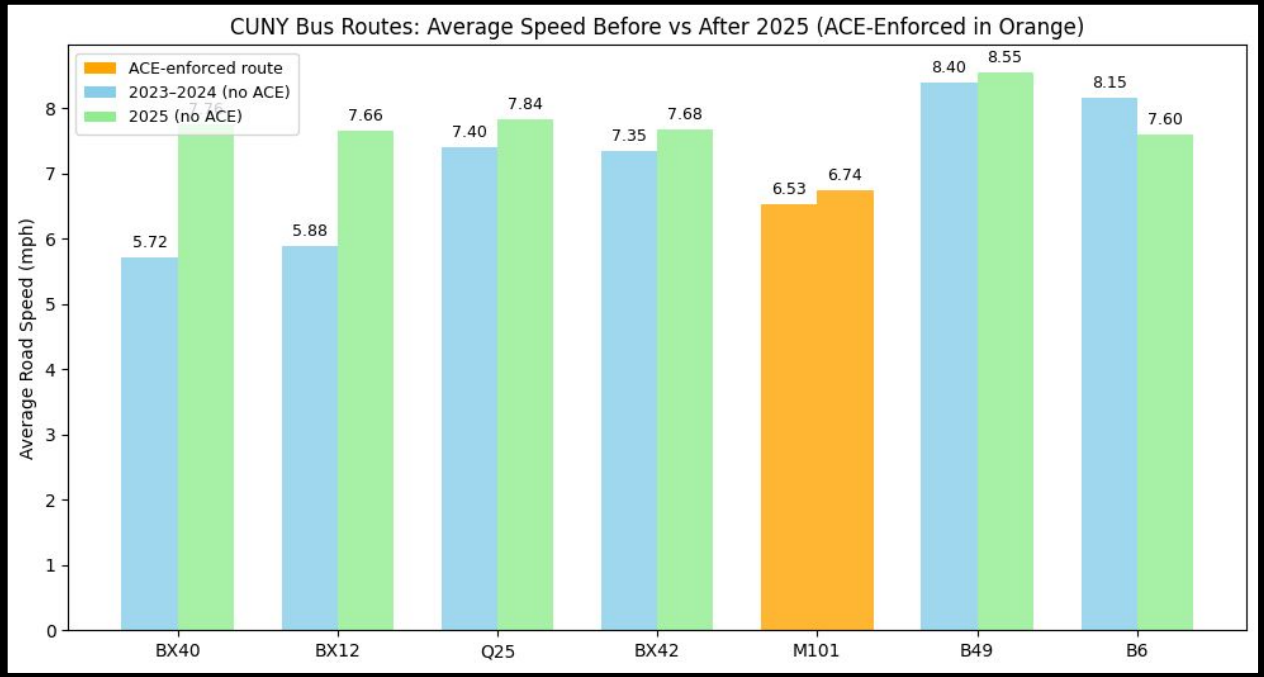
Presentation Overview



Rider Impact & Reliability

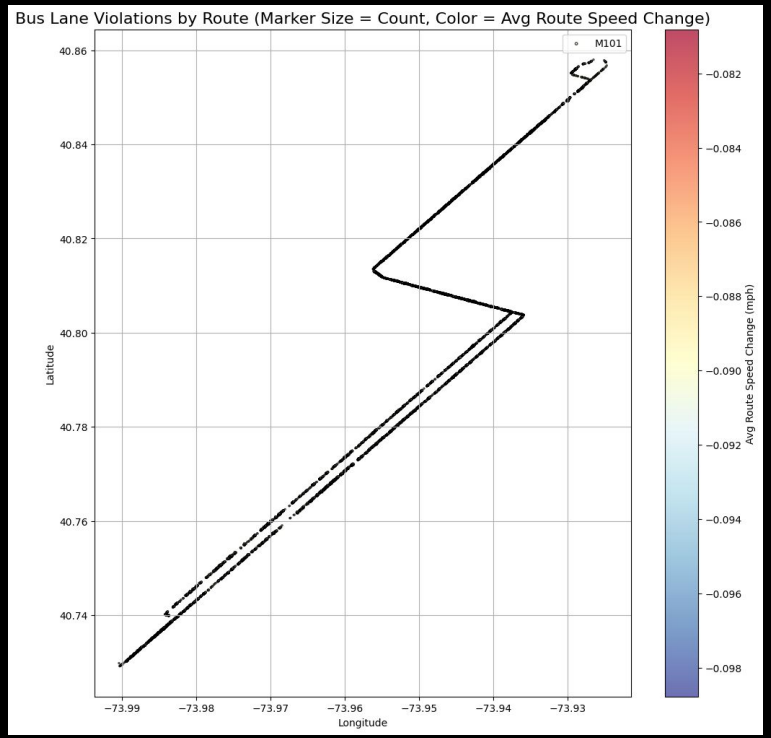


Most CUNY-heavy bus routes without ACE enforcement saw modest speed changes, with the B49 and BX42 improving slightly, while the B6 slowed. Notably, the BX12 and BX40 experienced large gains of 30–36% despite no enforcement. The M101, which is ACE-enforced, showed a 3.2% speed increase, suggesting that while ACE helps, other factors also affect speed improvements on student-heavy routes.

Enforcement Effectiveness: Hotspots

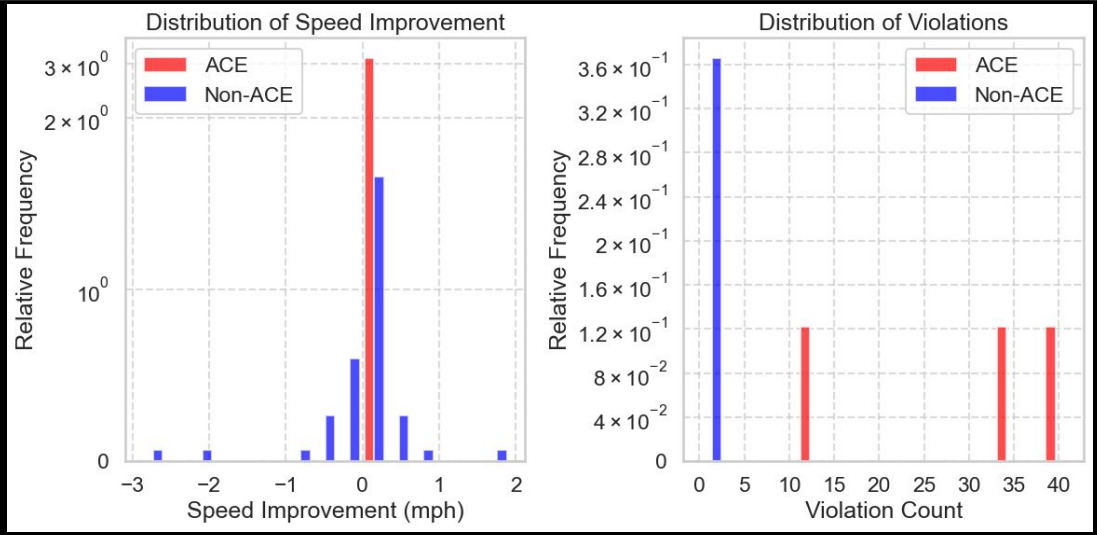
Report

Analysis of high-violation locations reveals that bus stops with the most ACE violations tend to experience slowdowns. For example, the M101 route, which had 1,090,777 high-violation locations, experienced 568,459 slowdowns compared with 522,314 speedups, resulting in an average speed change of -0.09 mph. This places the M101 among the top three routes most affected by violation-related slowdowns, highlighting that enforcement hotspots often coincide with segments where buses lose speed.

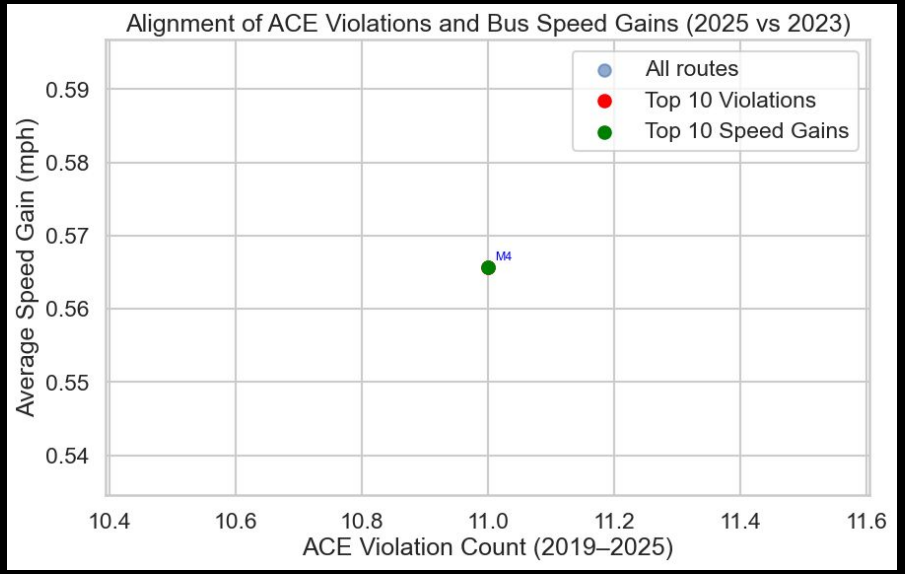


ACE vs Non-ACE Route Performance

Bus stops with the highest ACE violation counts tend to experience slowdowns. On the M101 route, 52.1% of high-violation stops slowed buses, with an average change of -0.09 mph, ranking it among the top three most affected routes. The top hotspot at (40.811, -73.955) had 217 violations and an average slowdown of -8.27 mph, highlighting the impact of concentrated violations.



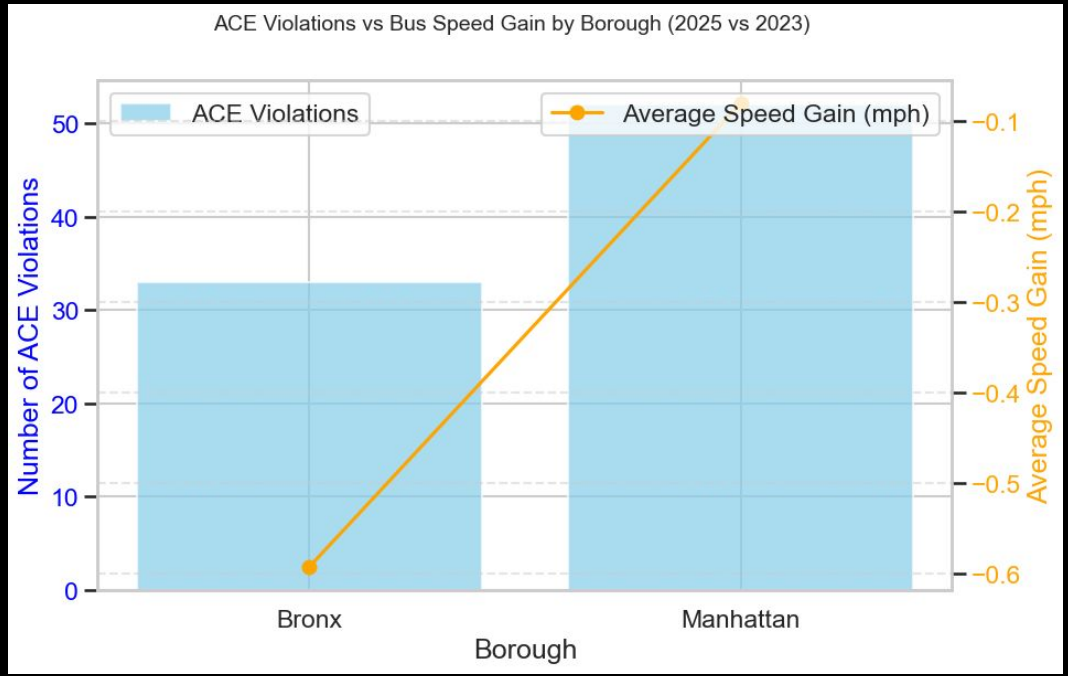
Enforcement & Speed Gains Alignment



Analysis of ACE enforcement and speed improvements shows partial alignment between high-violation routes and speed gains. Among the top 10 routes by violation count, only the M4 also appears in the top 10 for speed gains, with 11 violations and an average speed improvement of 0.57 mph. This indicates that while some heavily ticketed routes benefit from faster bus speeds, most top-violation routes do not necessarily correspond to the greatest speed improvements.

Equity & Rider Experience

Examining enforcement benefits across boroughs reveals differences in rider experience. In the Bronx, 33 violations were recorded, with an average speed change of -0.59 mph, indicating slight slowdowns. Manhattan had 52 violations and an average speed change of -0.08 mph, showing nearly neutral effects. Overall, these results suggest that ACE enforcement benefits are not distributed evenly, with some communities experiencing less improvement in bus speeds than others.



Key Insights

CUNY Heavy Routes

Most saw modest speed changes; BX12 and BX40 had the largest gains (30–36%), while the ACE-enforced M101 improved by 3.2%.

Violation hotspots

High-violation stops generally experience slowdowns; M101 had 52.1% of high-violation stops slowing buses, with top hotspot slowing by -8.27 mph.

Enforcement vs speed gains

Partial alignment—only M4 appears in both top 10 for violations and speed gains, suggesting that high violations don't always translate to greater speed improvements.

Equity across boroughs

ACE benefits are uneven; Bronx experienced slight slowdowns (-0.59 mph), Manhattan nearly neutral (-0.08 mph).

Recommendations & Next Steps

Target underserved routes
Expand ACE enforcement on routes and boroughs that show slowdowns or low speed gains.

Evaluate alignment:
Assess why most high-violation routes do not correspond to top speed gains and adjust enforcement or traffic management strategies.

Focus on top hotspots
Prioritize high-violation locations with the largest slowdowns to maximize speed improvements.

Promote equity
Ensure enforcement benefits reach outer boroughs and communities that currently see limited improvements.

Monitor student-heavy routes
Continue tracking CUNY-heavy routes to ensure sustained improvements in rider experience.