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New York City Intelligent Speed Assistance Pilot Evaluation

Vision Zero Research on the Road

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Safe System Approach

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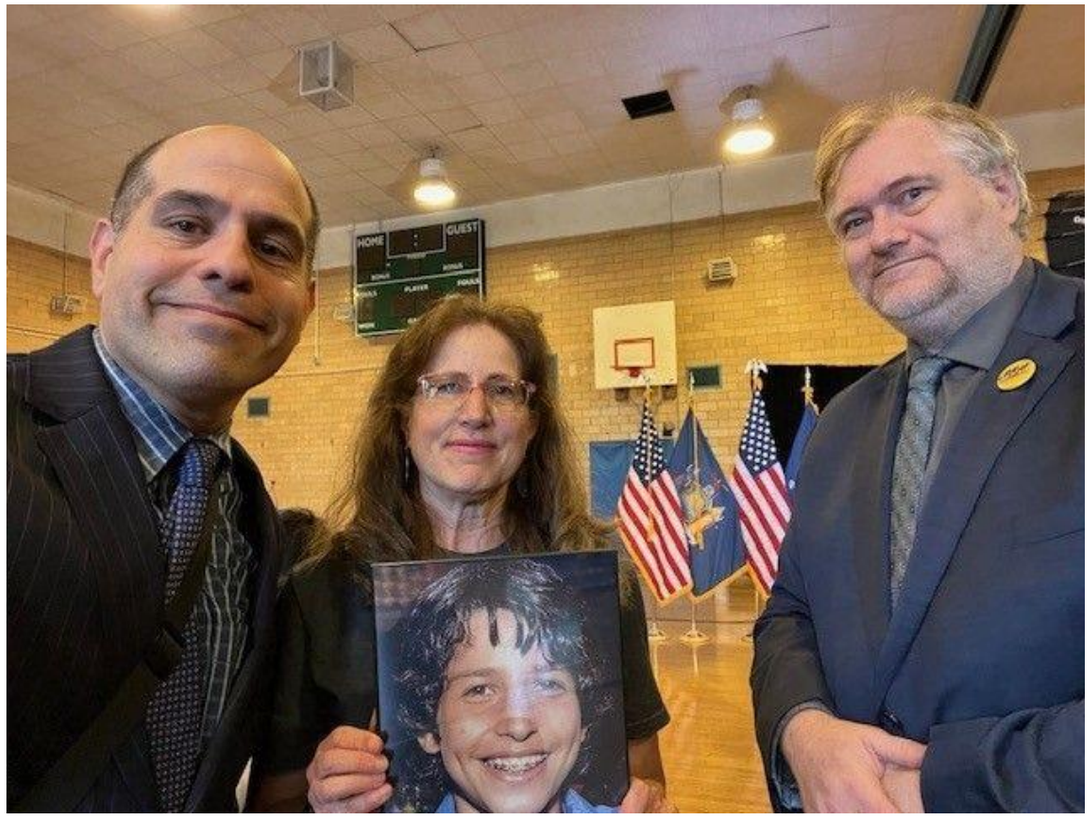
Sammy’s Law, Reduced Speed Limits



gothamist.com/news/nycs-lower-speed-limits-take-effect-in-some-areas-after-passage-of-sammys-law

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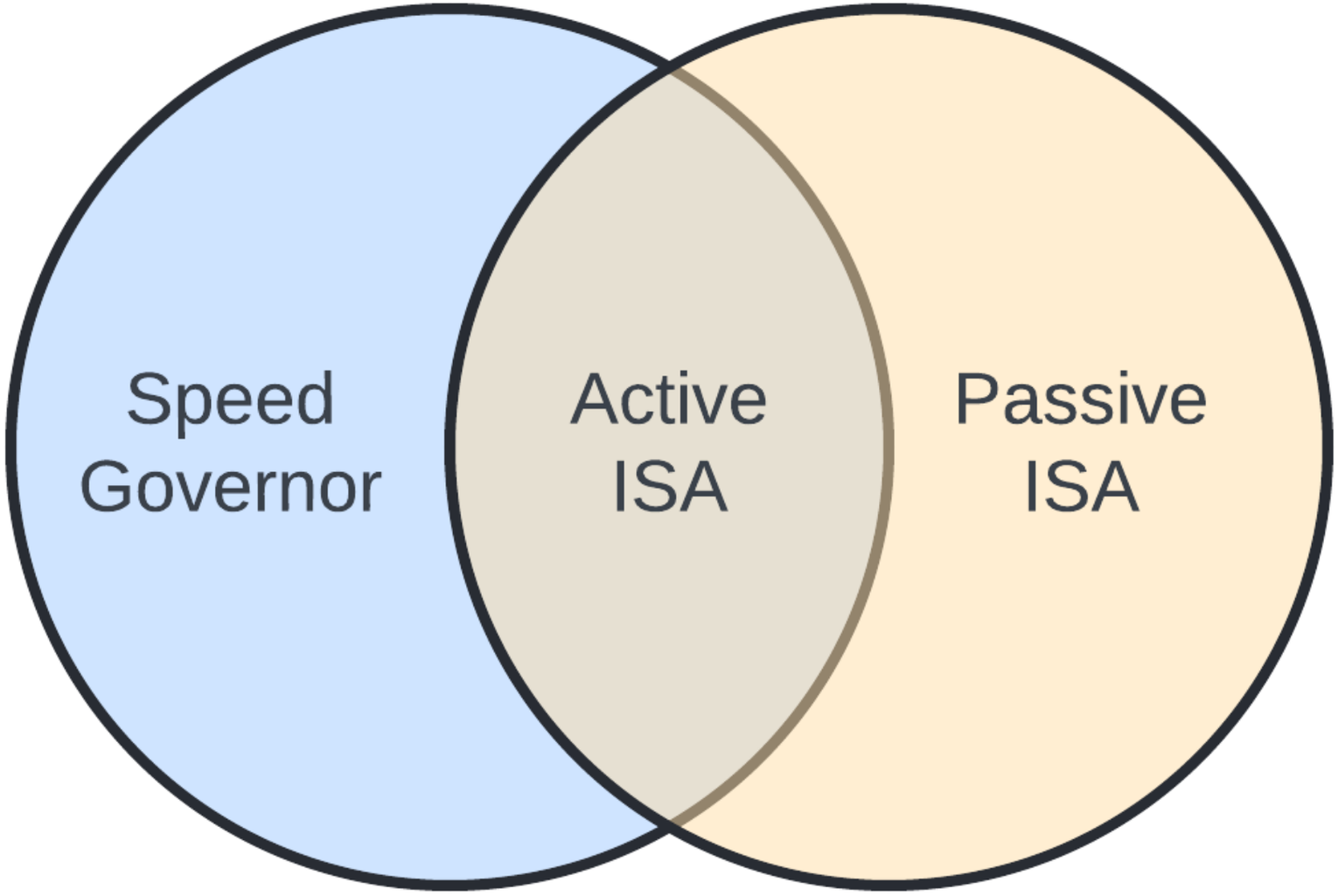
We use active intelligent speed assistance (ISA)

Controls vehicle speed



Reacts to local speed limit

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Our vehicles are all over the city

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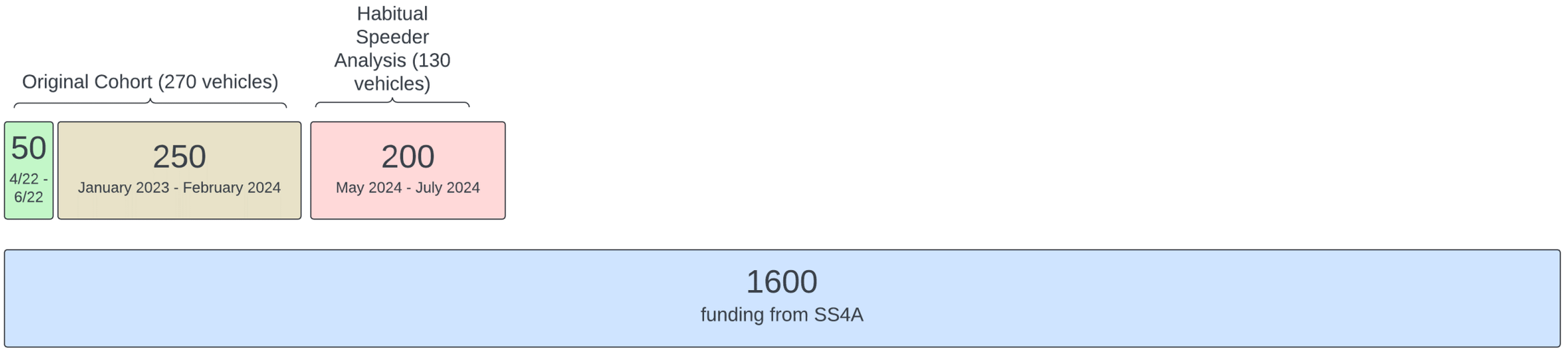
500 vehicles have traveled over 2.9 million miles with ISA



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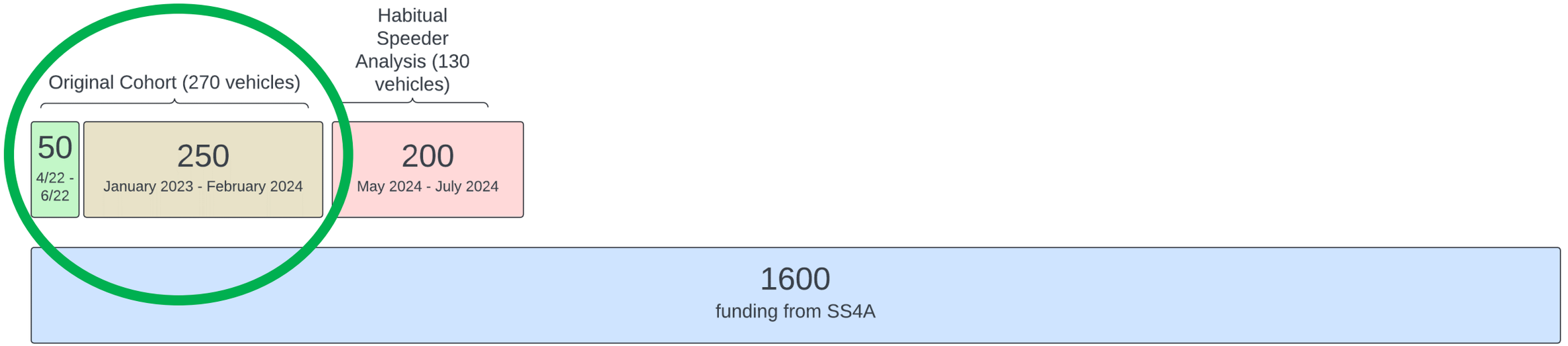
The first part of our analysis focuses on these 270 vehicles



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We matched each ISA vehicle with a control vehicle

Matching characteristics	Number of vehicles
Make, model, year, and utilizing agency	160
Make, model, and year	99
Make and model	9
Utilizing agency and vehicle weight class	2

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We have ISA on many different types of vehicles

Agency	Count
Administration for Children's Services	4
Business Integrity Commission	2
Department of Citywide Administrative Services	2
Department of Correction	5
Department of Environmental Protection	38
Department of Homeless Services	41
Department of Parks and Recreation	9
Department of Sanitation	12
Department of Transportation	12
Housing Preservation & Development	3
New York City Fleet Share	89
NYCSBUS	50
Taxi & Limousine Commission	3
Grand Total	**270**

Weight Class	Count
Heavy Duty	64
Light Duty	182
Medium Duty	24
Grand Total	**270**

Vehicle Type	Count
Aerial Lift	1
Attenuator Truck	1
Box Truck	3
Bus (Corrections)	1
Collection Truck	1
Crossover	1
Dump Truck	1
Load Lugger	1
Minivan	1
Pickup	16
School Bus	50
Sedan	159
SUV	7
Tractor Trailer	1
Utility Truck	2
Van	22
Welding Truck	2
Grand Total	**270**

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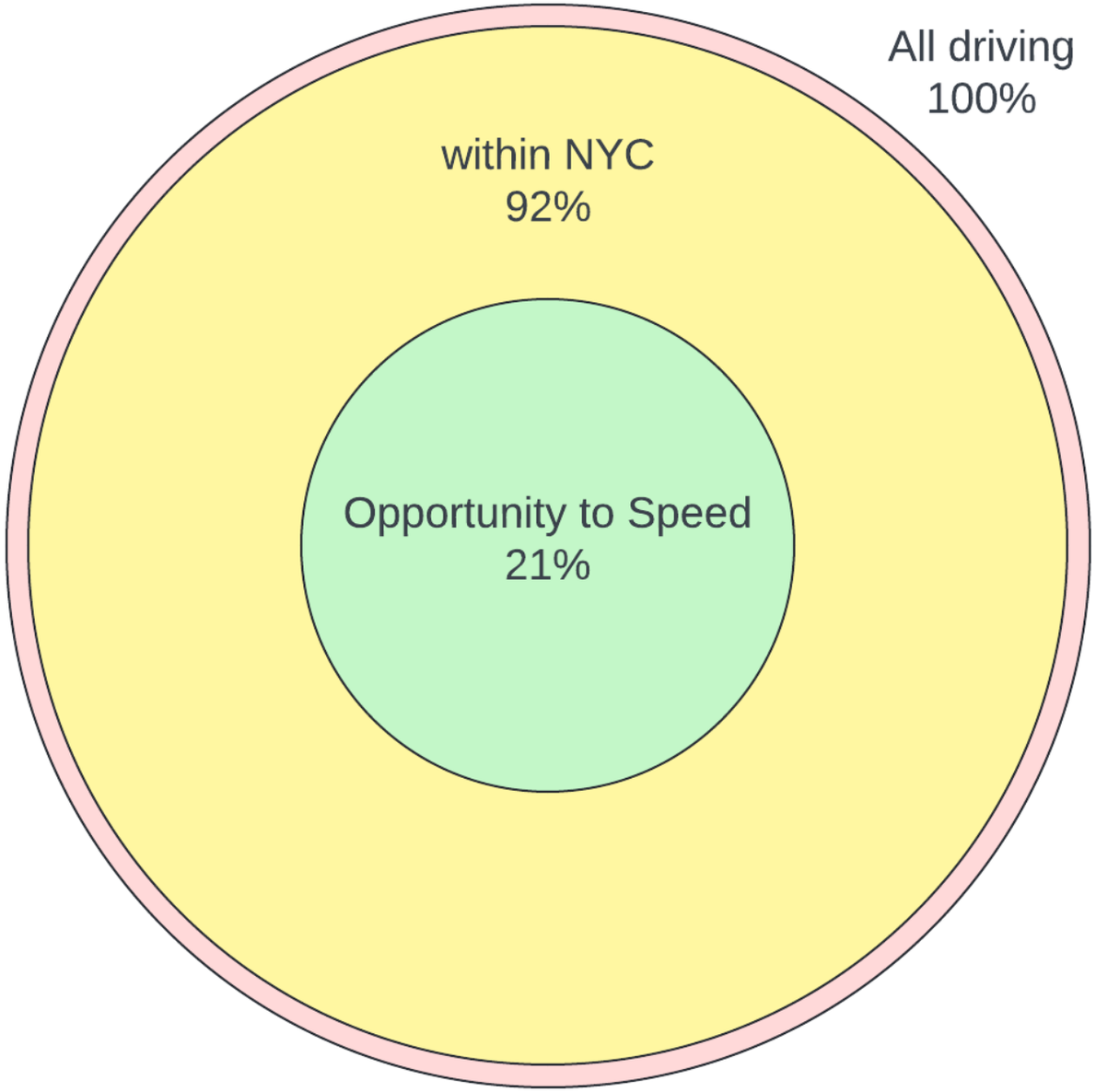
Opportunity to speed = faster than 5 mph below the limit



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Severe speeding (>11 mph over the limit) decreased by 64%

Time Period	ISA Vehicles	Control Vehicles
Pre-ISA	3.2%	3.1%
Post-ISA	1.1%	3.4%
Percent Change	**64% decrease**	**10% increase**

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With ISA, 99.74% of all driving in NYC slower than 11 mph over the speed limit

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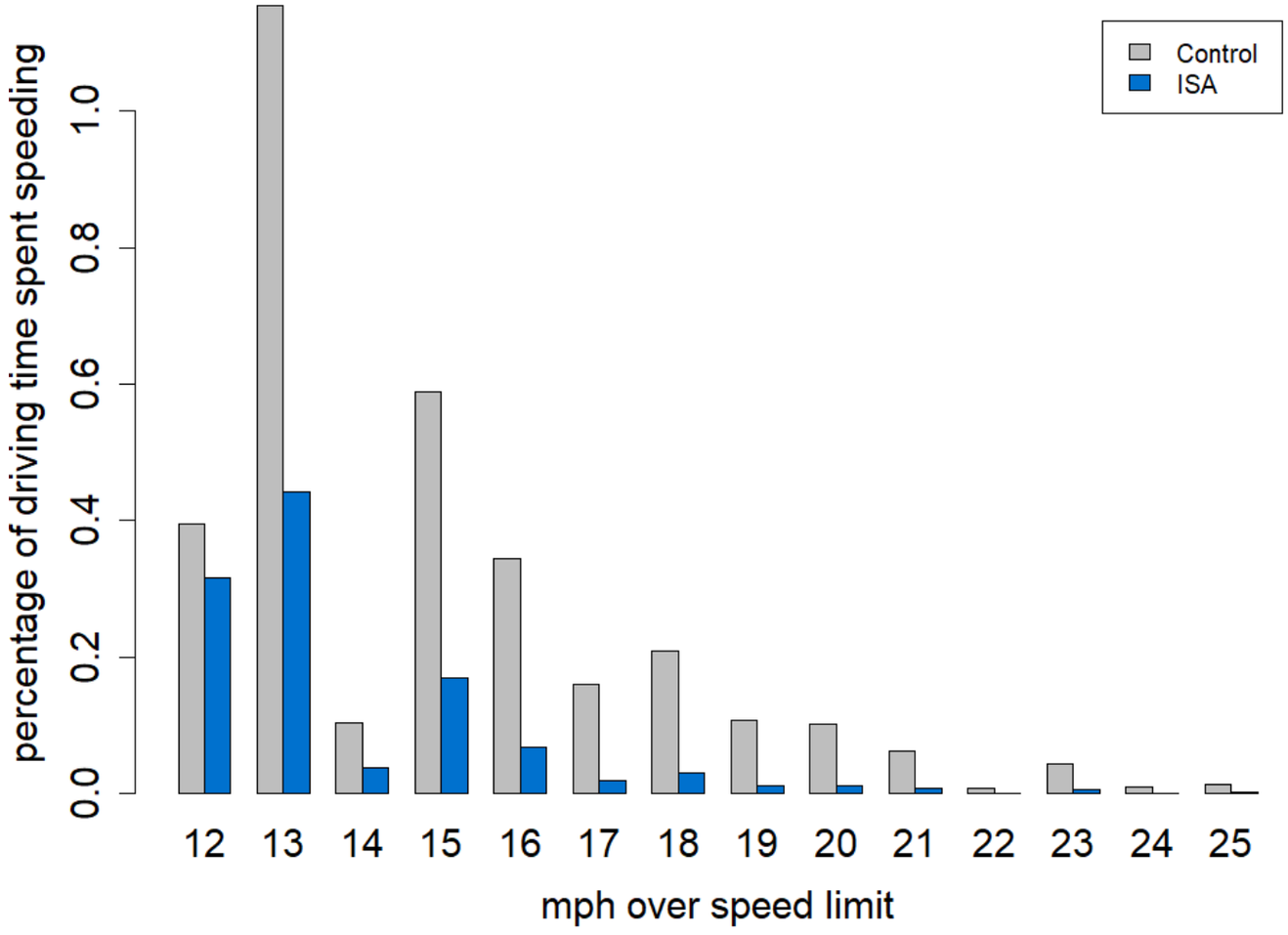
Severe speeding still happens, but less in ISA vehicles



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Severe speeding decreased most at the highest speed limit

Control Vehicles	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph
Pre-ISA	0.7%	2.4%	10.2%	10.2%	5.1%	5.7%
Post-ISA	0.7%	2.4%	9.5%	10.9%	5.3%	6.6%
Relative Change	**5% increase**	**0.2% increase**	**7% decrease**	**7% increase**	**3% increase**	**16% increase**
ISA vehicles	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph
Pre-ISA	0.7%	3.5%	13.6%	9.1%	4.3%	5.4%
Post-ISA	0.4%	1.6%	4.9%	4.2%	1.0%	1.0%
Relative Change	**50% decrease**	**55% decrease**	**64% decrease**	**54% decrease**	**77% decrease**	**82% decrease**

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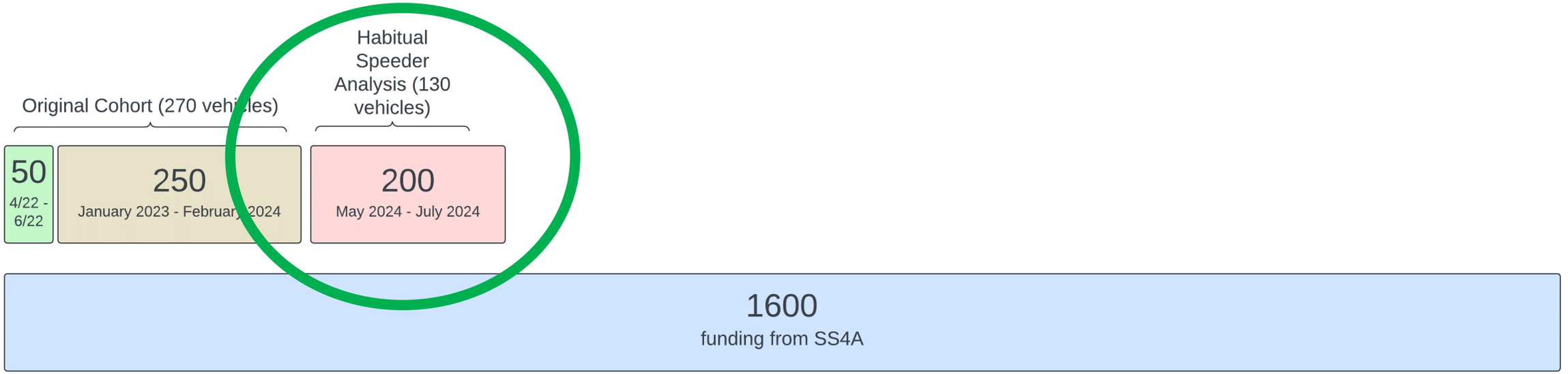
Habitual speeders were determined by cameras and telematics



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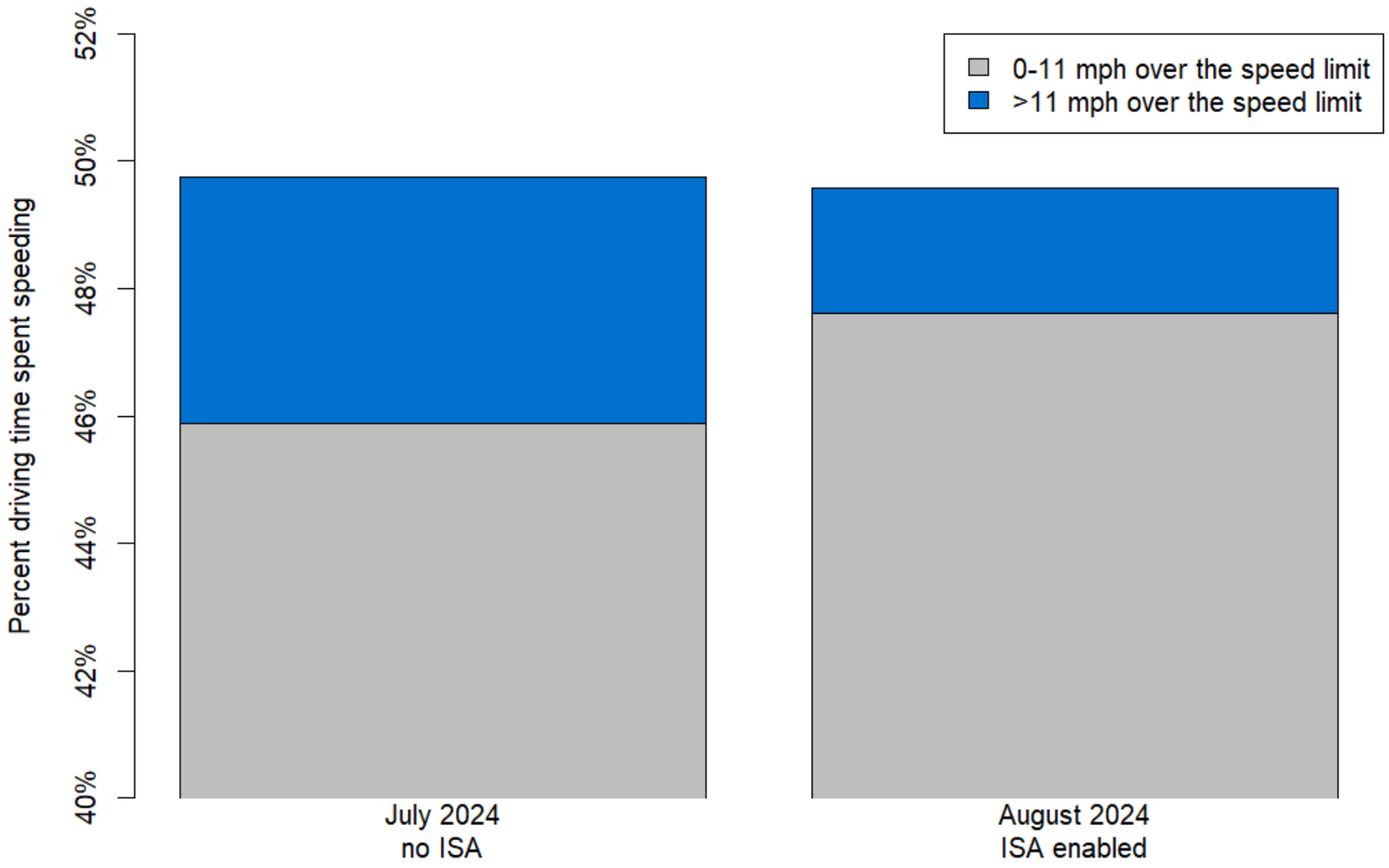
Severe speeding decreased by 50% in habitual speeders



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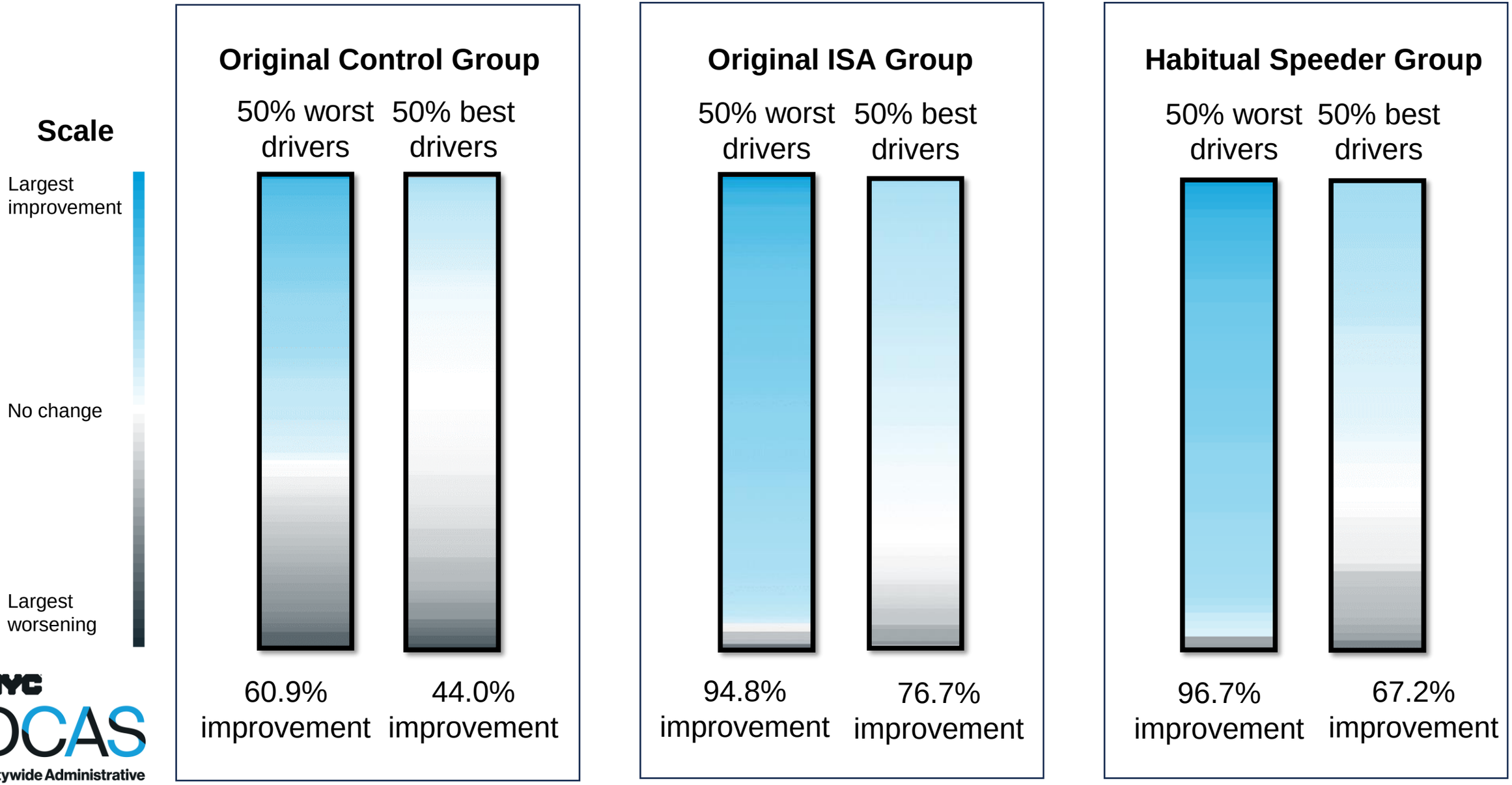
The worst speeders were more likely to improve



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Key Takeaways

- About speeding in general
  - 80% of time spent under 5 mph below the speed limit
  - with the opportunity to speed
    - 50% of time spent speeding
    - Only 3% spent severely speeding
- About ISA technology
  - reduced severe speeding by **64%**
  - kept vehicles within 11 mph threshold 99.74% of the time
  - had a greater effect at a higher speed limit
  - had a greater effect on the worst individual speeders

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Thank You

Extra Slide: Characteristics of Habitual Speeders

Vehicle Type	Tier 1: Speeding camera tickets + Excessive speeding alerts	Tier 2: 3+ tickets in past 18 months and 10+ tickets since 2021	Tier 3: 3+ speeding tickets in last 18 month	Tier 4: 10+ tickets since 2021, but none in past 18 months	Tier 5: High count of Geotab speeding alerts	Grand Total
Container Truck					1	1
Crossover			1		5	6
Dump Truck					3	3
Graffiti Truck			1			1
Minivan					2	2
Pickup	5		9		9	23
Sedan		1	10	8	33	52
SUV			1	6	23	30
Van			4		8	12
Grand Total	**5**	**1**	**26**	**14**	**84**	**130**

Agency	Tier 1: Speeding camera tickets + excessive speeding alerts	Tier 2: 3+ tickets in past 18 months and 10+ tickets since 2021	Tier 3: 3+ speeding tickets in last 18 month	Tier 4: 10+ tickets since 2021, but none in past 18 months	Tier 5: High count of Geotab speeding alerts	Grand Total
Administration for Children's Services					6	6
Department of Citywide Administrative Services					1	1
Department of Environmental Protection	4		5	1	17	27
Department of Homeless Services		1	1		1	3
Department of Buildings				9	6	15
Department of Education			2		1	3
Department of Transportation					13	13
Department of Parks and Recreation	1		18		2	21
Department of Sanitation				3	17	20
Housing Preservation and Development				1	5	6
Human Resources Administration					1	1
Office of Chief Medical Examiner					8	8
Department of Probation					6	6
Grand Total	**5**	**1**	**26**	**14**	**84**	**130**

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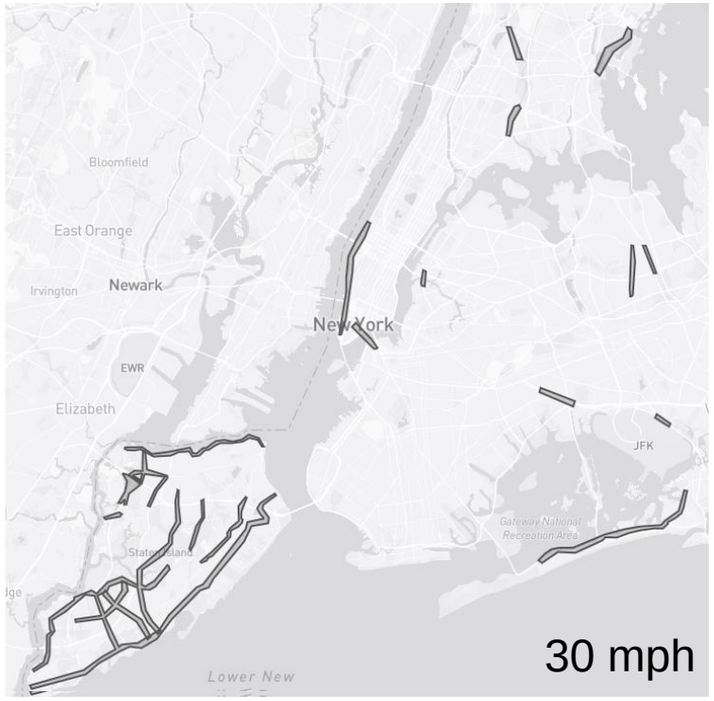
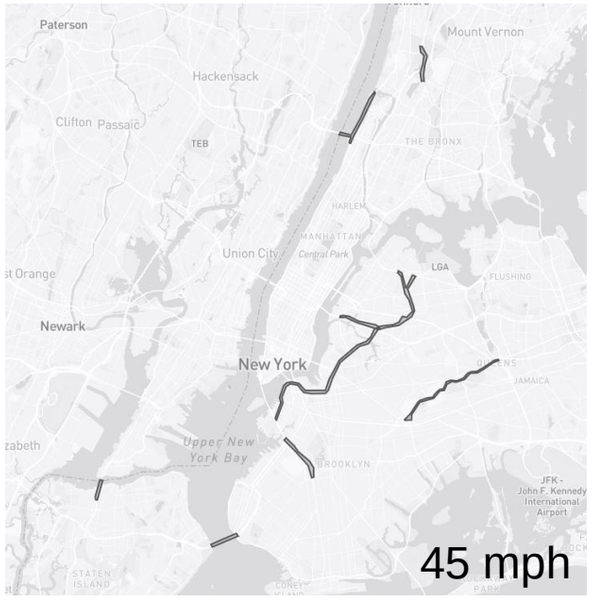
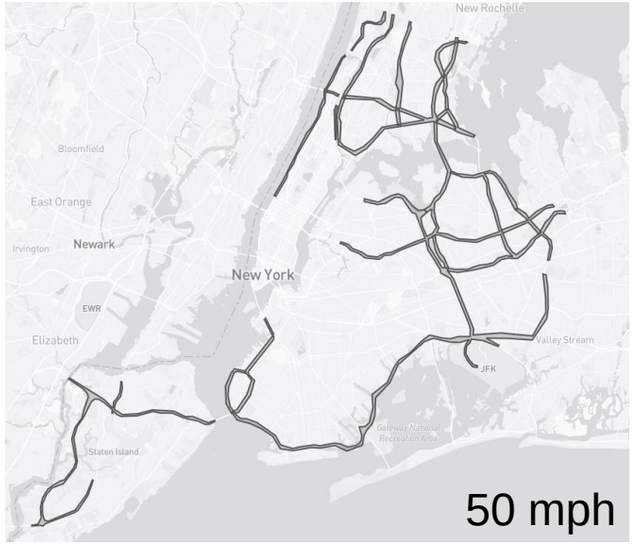
Extra Slide: Steps of Error Removal

1. Speed limit data extracted directly from Geotab
2. Geojson files created from VZV speed limits for 30-50 mph speed limits, and highest applicable speed limit applied to each location
3. Removed speed limits >50 mph (Geotab erroneously has some fragments of streets as having a 65 mph speed limit)
4. Removed instances where vehicle has a non-zero speed but the GPS coordinate is not moving
    1. This often caused an erroneously low limit to be applied as the vehicle would be driving on streets, including highways but the location would be in a parking lot where the vehicle originated, with a speed limit of 25 mph or slower
    2. This could also cause a slingshot effect where an erroneously high speed would be attributed to a vehicle as the GPS point moved instantaneously to a different location even though the vehicle was presumably driving continuously in between

Extra Slide: Steps of Error Removal







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