

# Quantifying The Effect of Vision Zero

JR Team

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# Project Progress

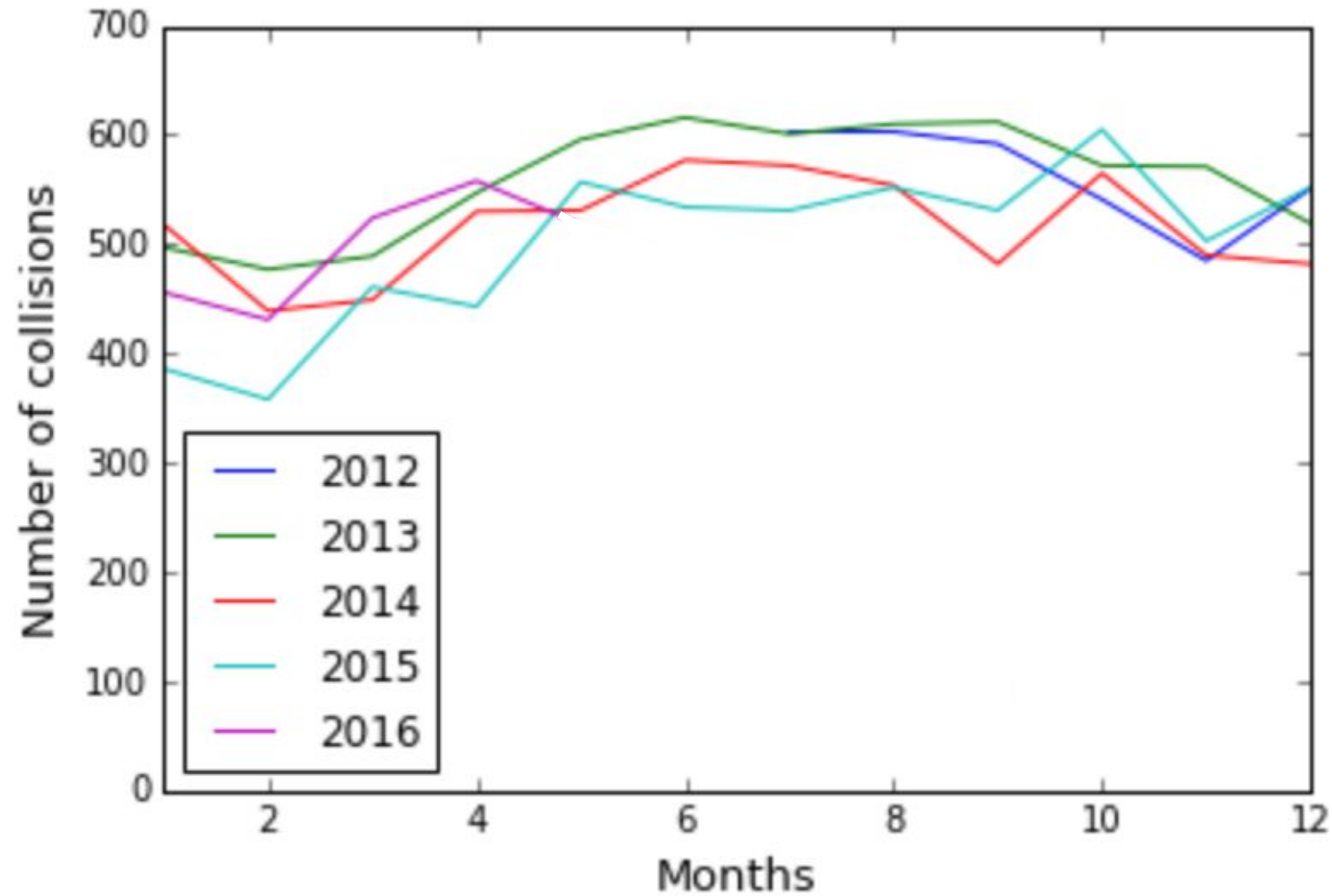
## Was Vision Zero Successful?

- Collisions
- Speed
- Street Redesign

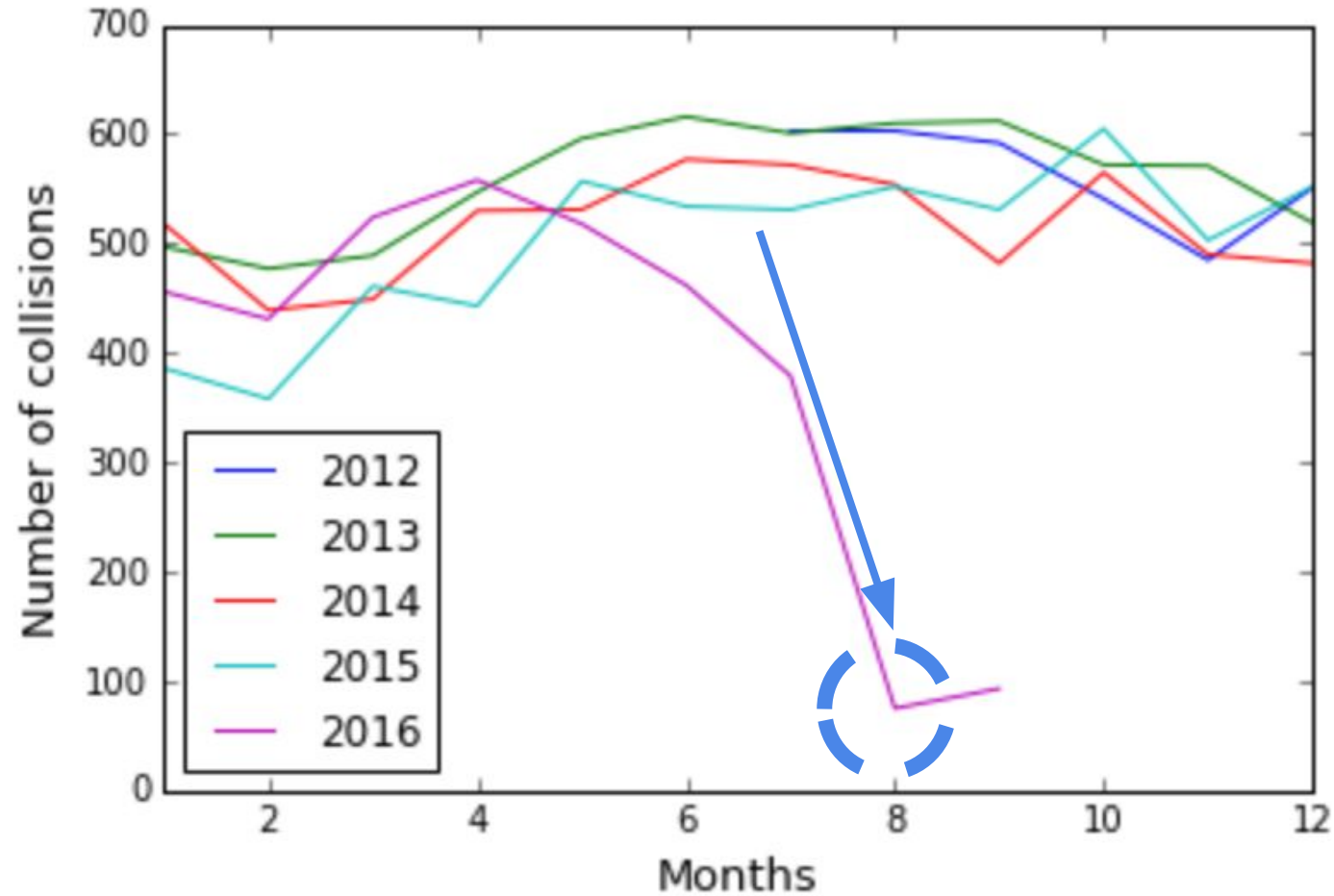
## Can Vision Zero Do Better?

- Correlations with Spatial Features

# Collisions in Manhattan per Year



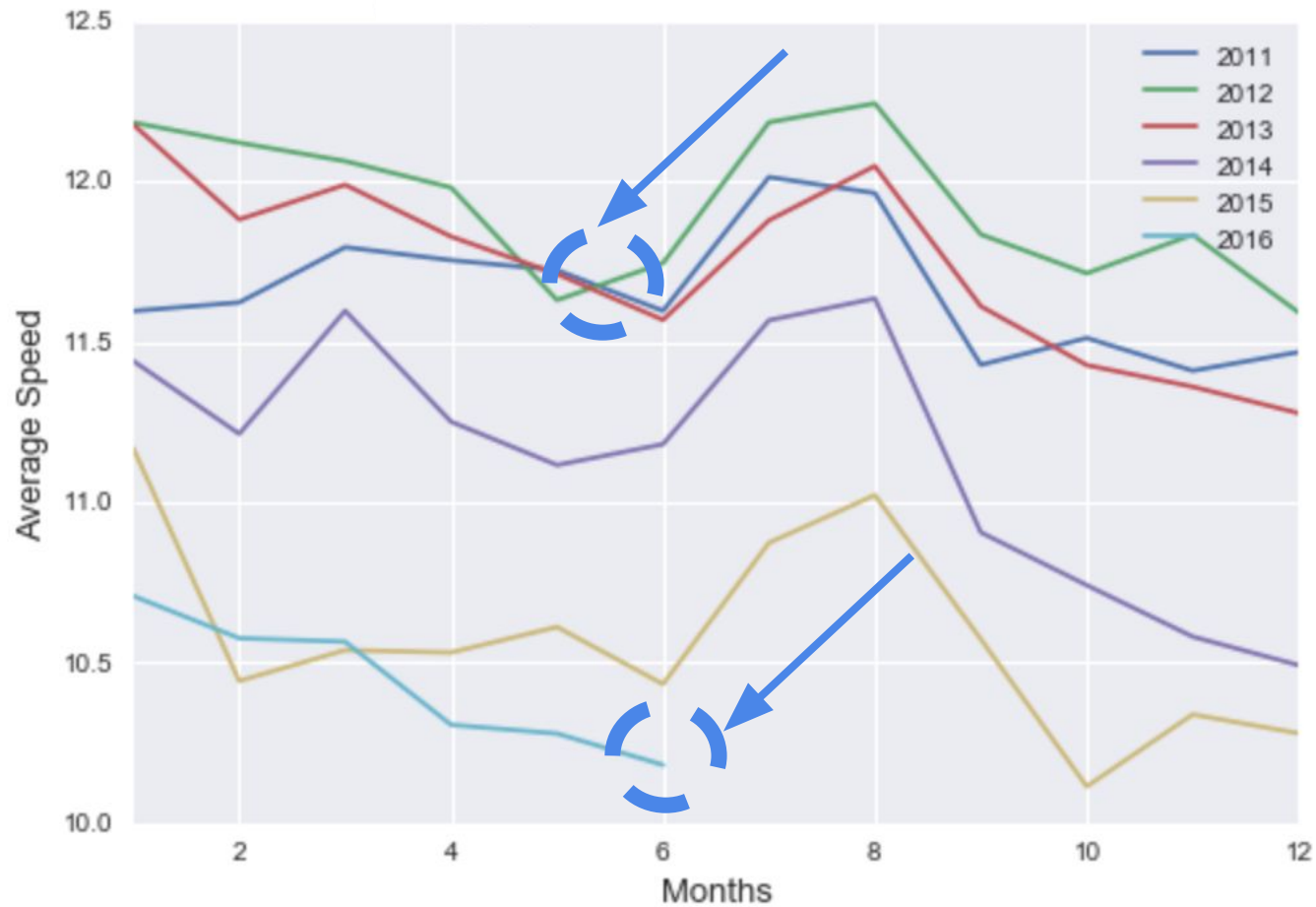
# Collisions in Manhattan per Year



## Collision Heat Map in Manhattan per Year



# Speed of Yellow Cabs in Manhattan per Year

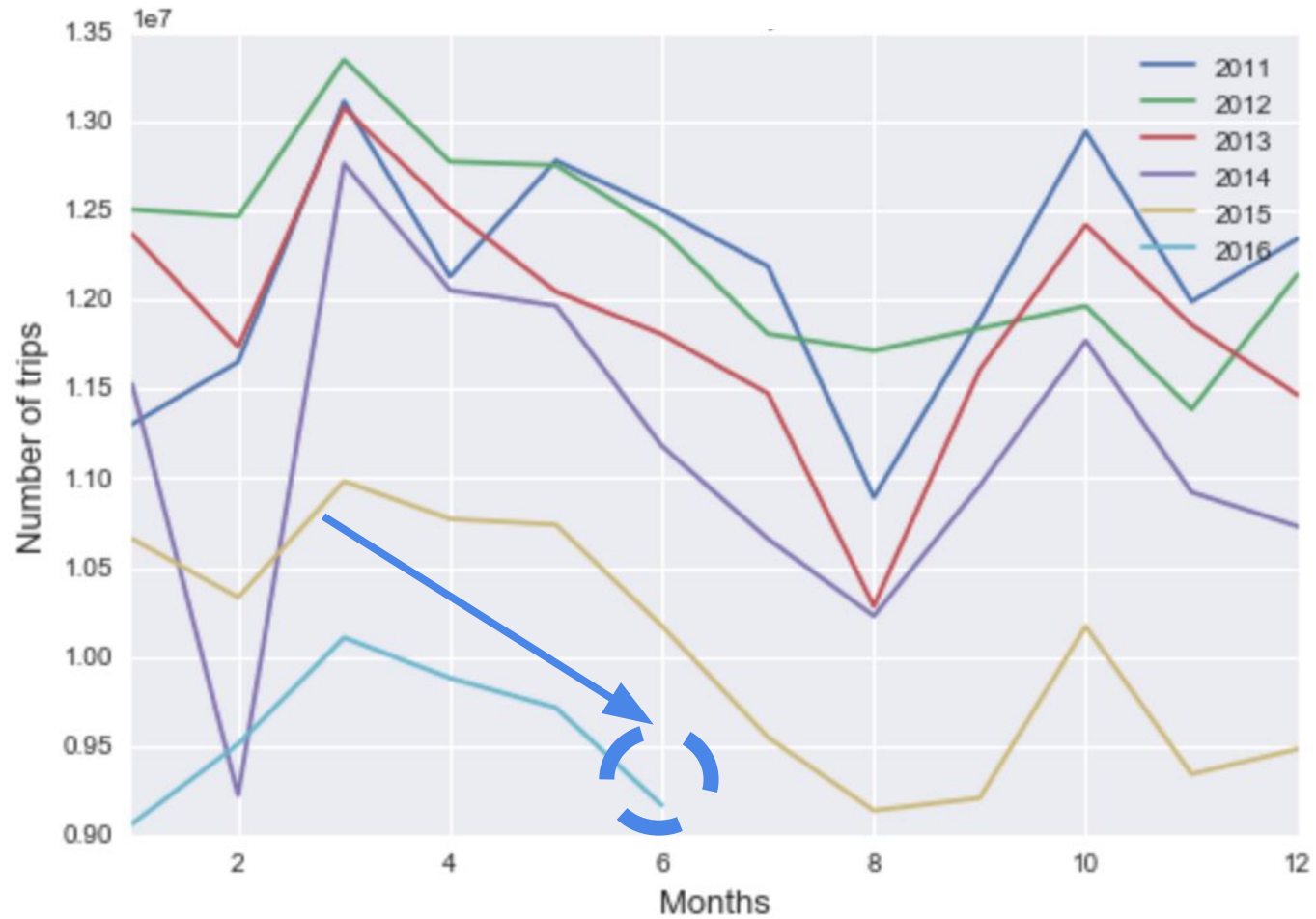


# Overspeed Heat Map in Manhattan per Year



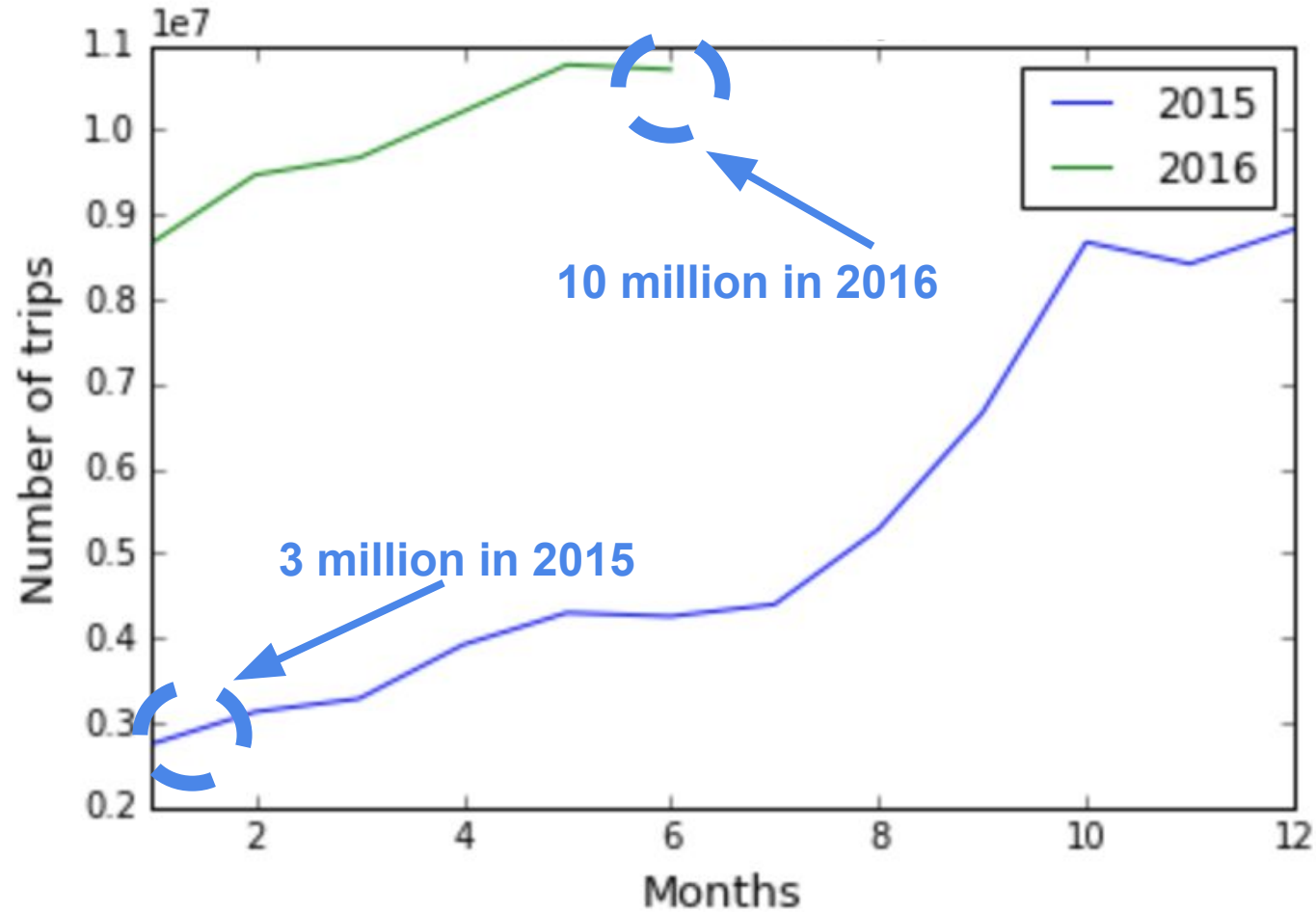


# Yellow Cab Trips in Manhattan per Year





# FHV Trips in Manhattan per Year



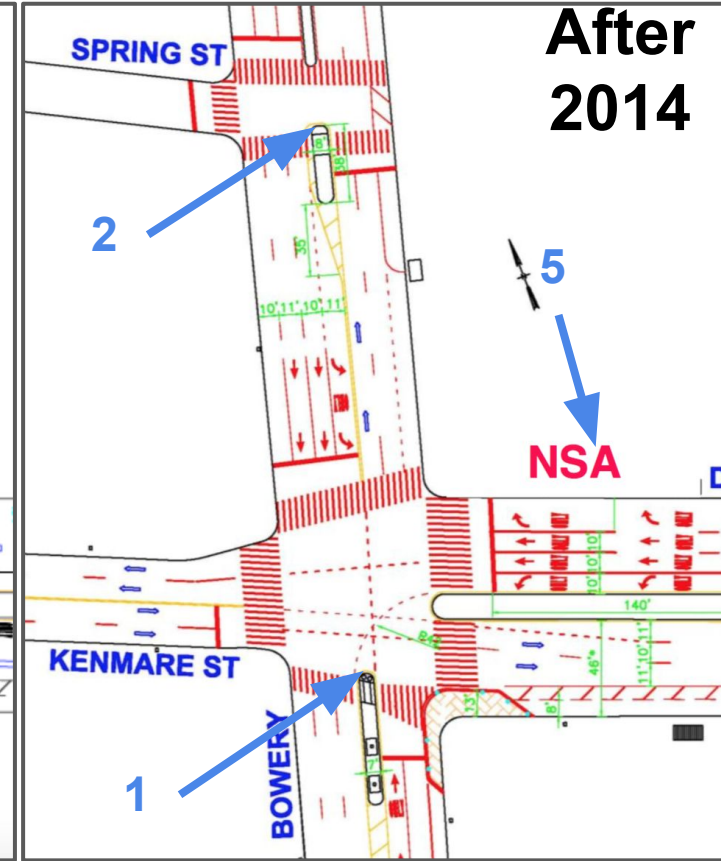
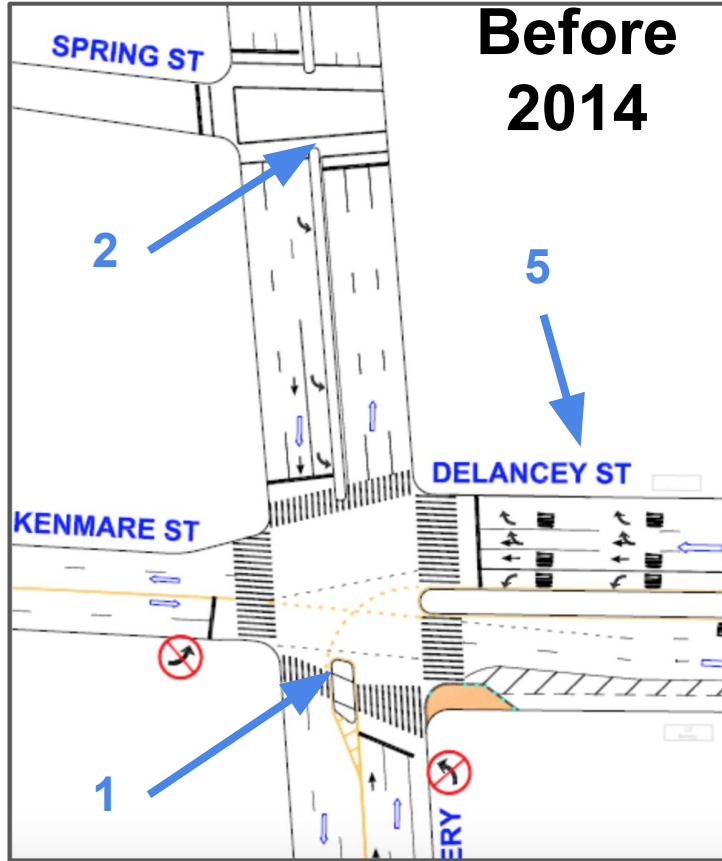
# Did Vision Zero Reduce Speeds?

Hypothesis Testing on Avg speed on Sep/2014 and Sep/2015

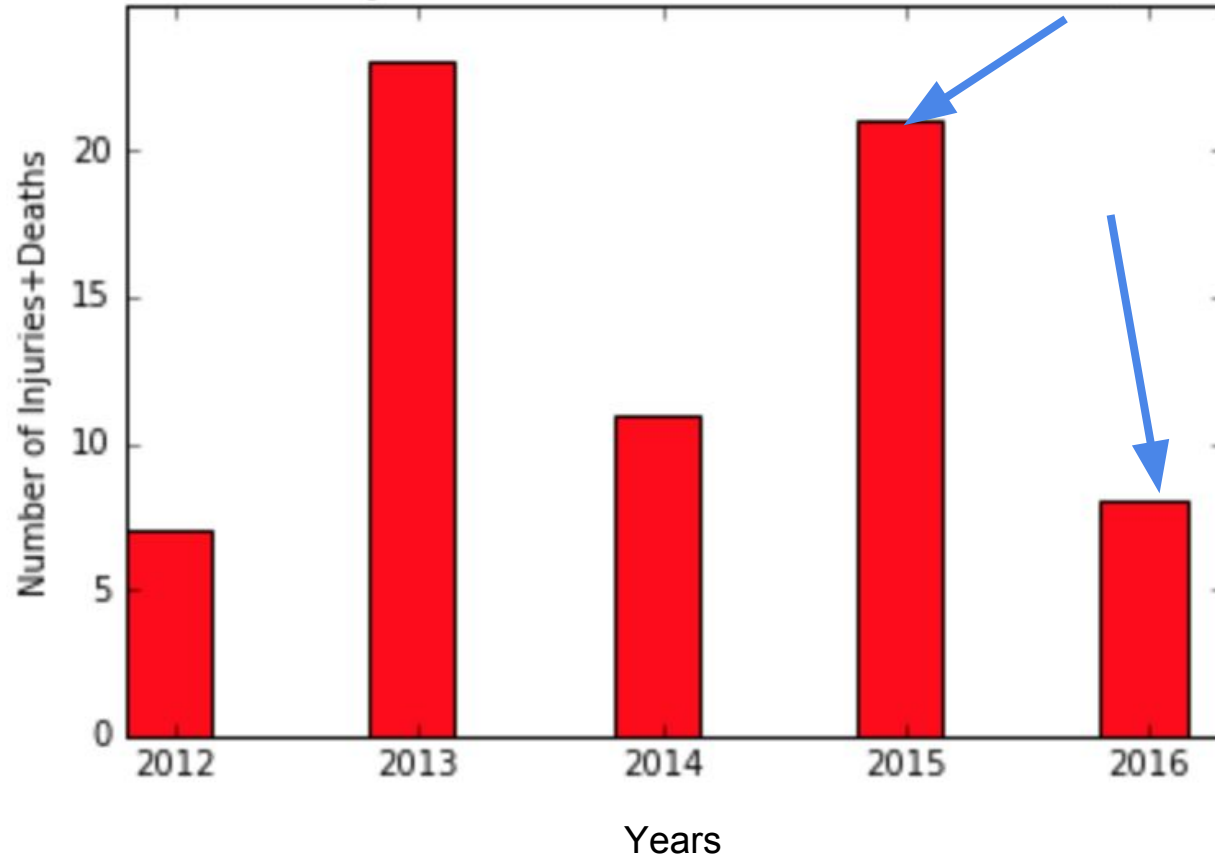
#####	$(\mu_{09\_2014} = \mu_{09\_2015})?$	$H_a$
Yellow/Green	Reject	$\mu_{09\_2014} > \mu_{09\_2015}$

# Street Redesign on Spring/Delancey/Kenmare/Bowery in Manhattan

- 1-Reshape island to allow easier turns
- 2-Add new island at Spring St to improve pedestrian safety
- 3-Shift SB left turn bay and add another through lane with two full time receiving lanes to ease intersection congestion
- 4-Add 11 second leading pedestrian phase
- 5-Expand NSA on north curb of Delancey



# Collision on Spring/Delancey/Kenmare/Bowery in Manhattan



# Street Redesign on Myrtle/Wyckoff/Palmetto in Queens

1-5 turns were banned (2014) **red**

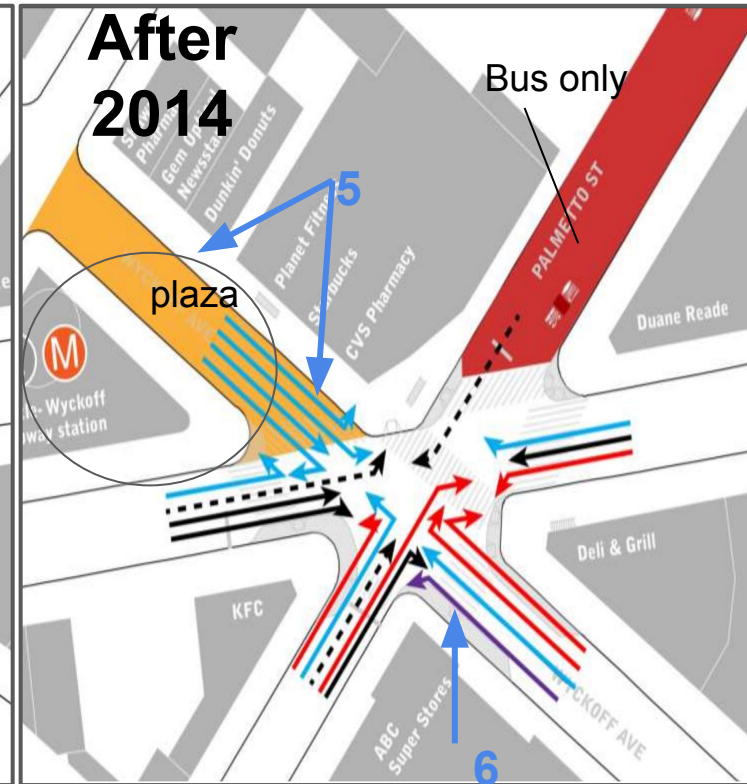
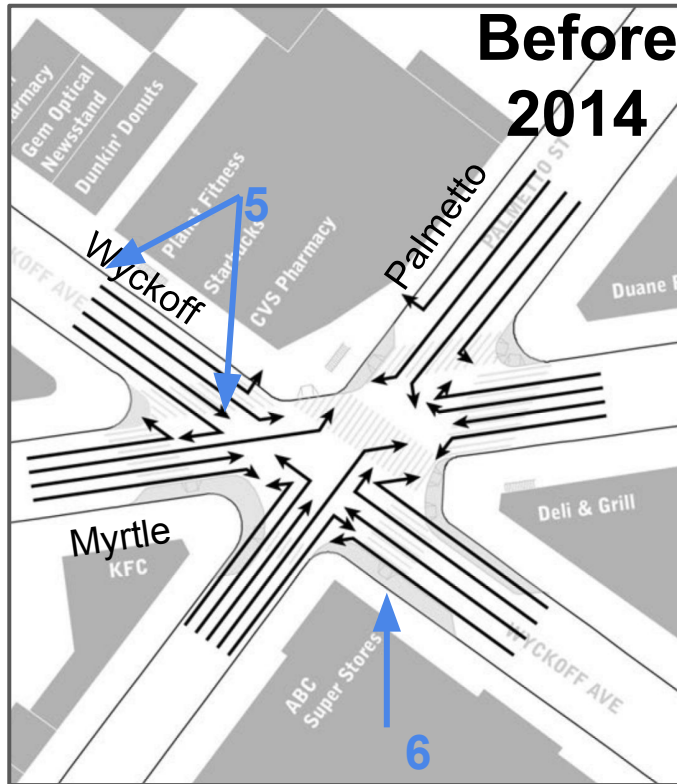
2-20 vehicular movements remain (2014)

3-Pedestrian crossings were shortened (2014)

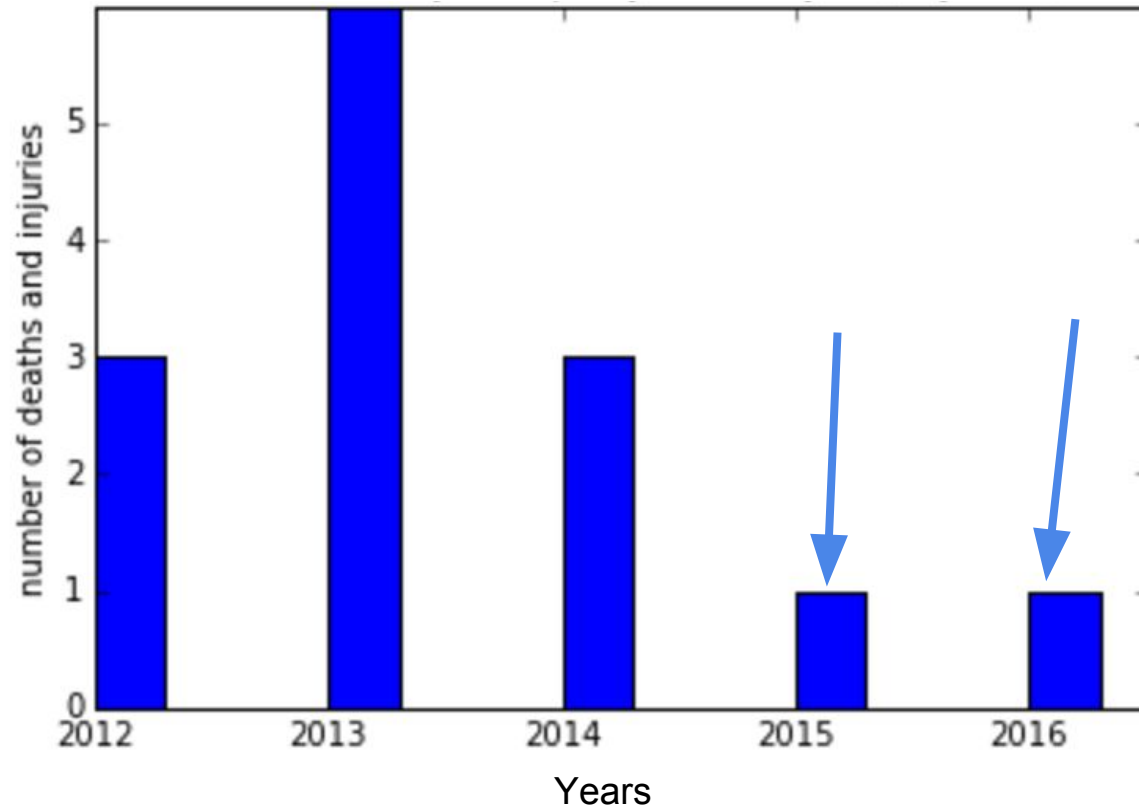
4-work with NYPD for more enforcement (2016)

**5**-Plaza Conversion +8 additional turns would be eliminated (2016) **blue**

**6**-Wyckoff one-way Southbound: +1 additional turn eliminated (2016) **purple**



# Collision on Myrtle/Wyckoff/Palmetto in Queens



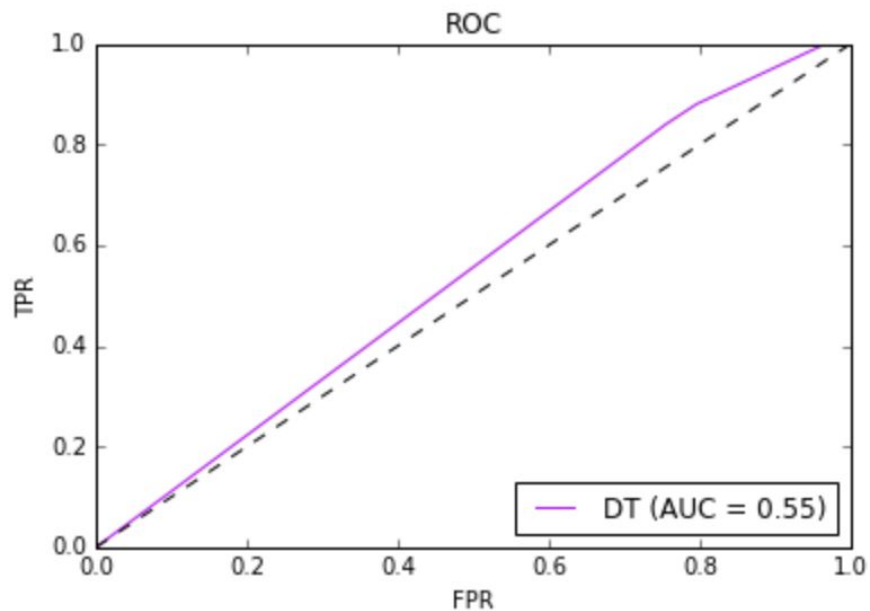
# Did Vision Zero Reduce Deaths+Injuries?

## Avg of Deaths+Injuries per Year

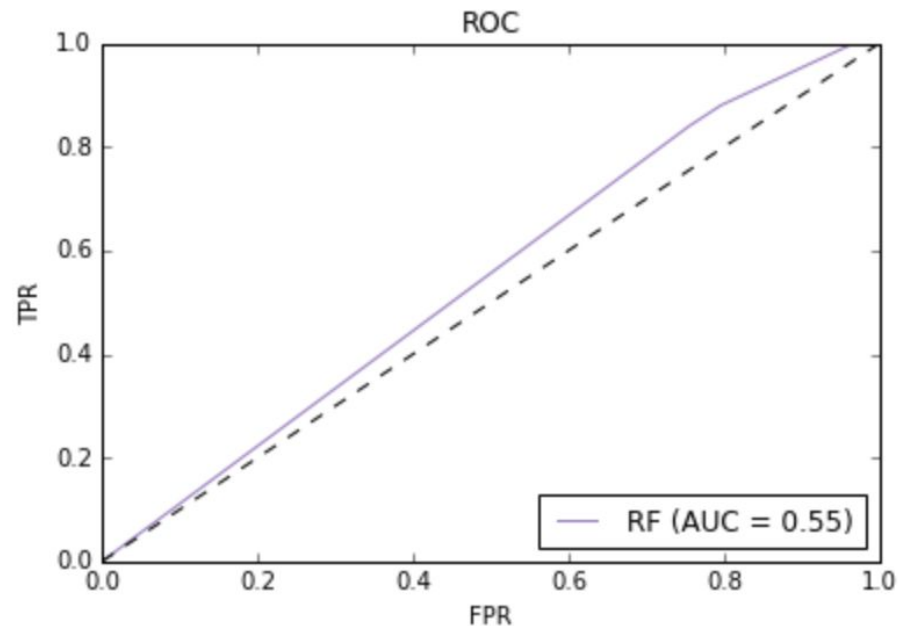
#####	Before	After	Decrease
Delancey/Kenmare/Spring/Bowery	23	13.3	42%
Myrtle/Wyckoff/Palmetto	4.5	1.6	64%



# Correlation Discovery Through Feature Importance

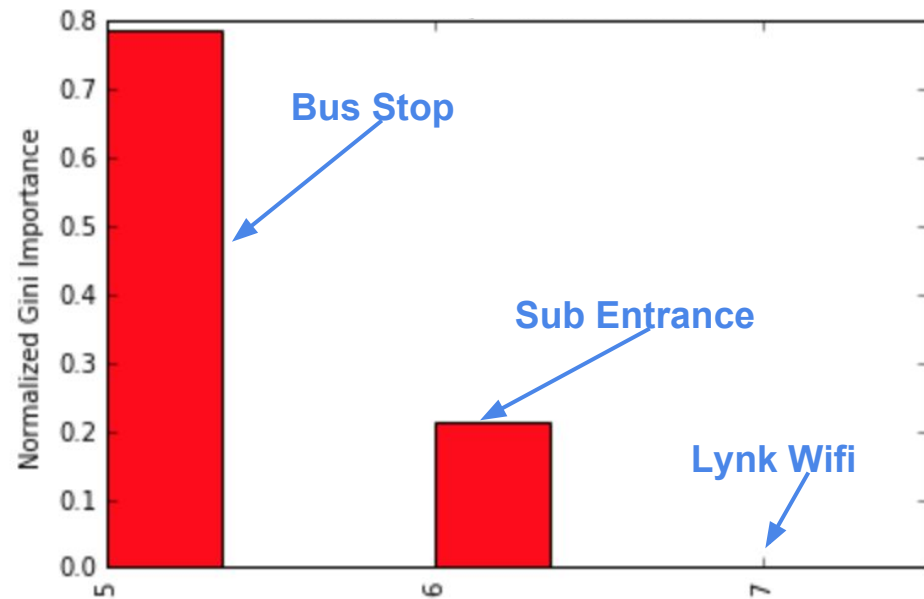


Decision Tree

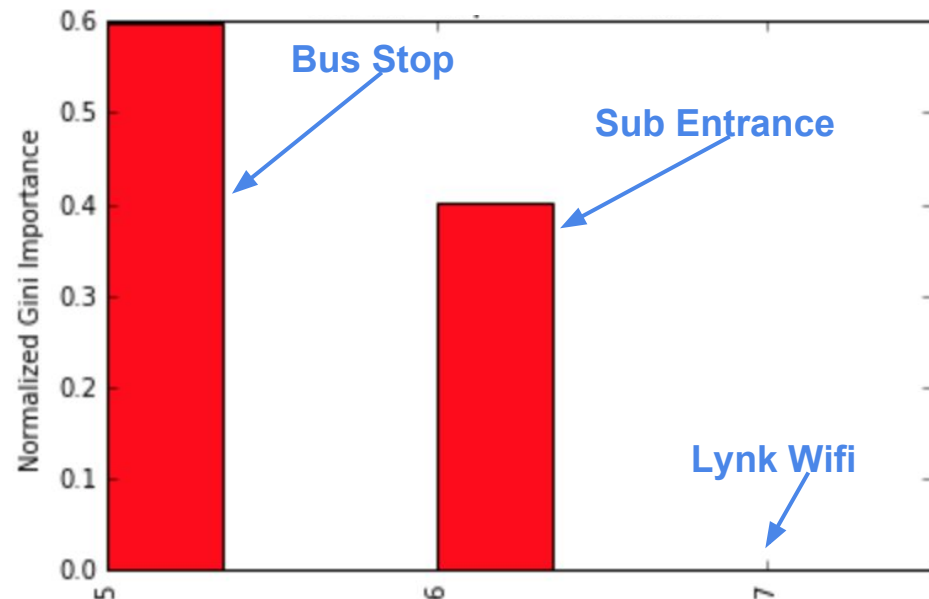


Random Forest

# Can Vision Zero Do Better?



Decision Tree



Random Forest

# Next Steps

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