

# WESTCHESTER COUNTY BEE-LINE SYSTEM ROUTES 7 & 13 TRANSIT ANALYSES

## ROUTE 7

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A presentation by  
Nelson\Nygaard Consulting Associates

May 26, 2016



# OVERVIEW OF STUDY

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# Route 7 Profile

- **Length:** 9.9 miles eastbound, 10.6 miles westbound
- **Ridership:** 6,774 (weekday daily average)
- **Stops:** 64 eastbound, 54 westbound
- **Signalized Intersections:** 75 eastbound, 71 westbound
- **Running times:** 62 minutes eastbound, 59 minutes westbound



# Issues

- Routes cobbled together from a series of local corridors
- Slow for passengers, costly and delay prone
- Hobbled by excessive turns, narrow roadway geometry, signal delay and congestion

# Challenges

- Uneven wait times, lateness and heavy loading
- 5-7 turns in each downtown (Yonkers, Mount Vernon and New Rochelle)
- Street grid with signals at many intersections

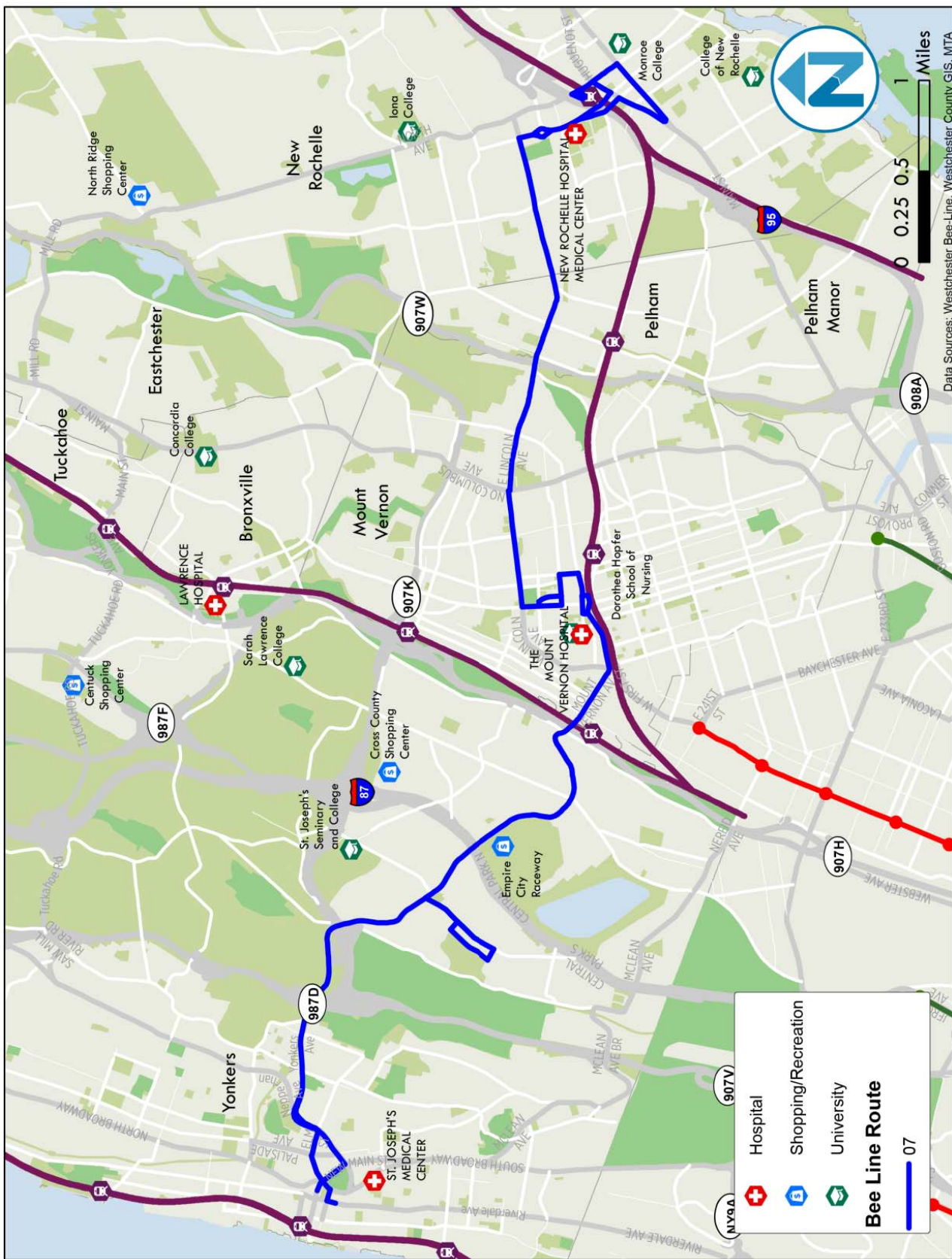
# Goals

- Improving efficiency
- Improving directness
- Improving movement in traffic
- Balancing the needs of existing and potential riders

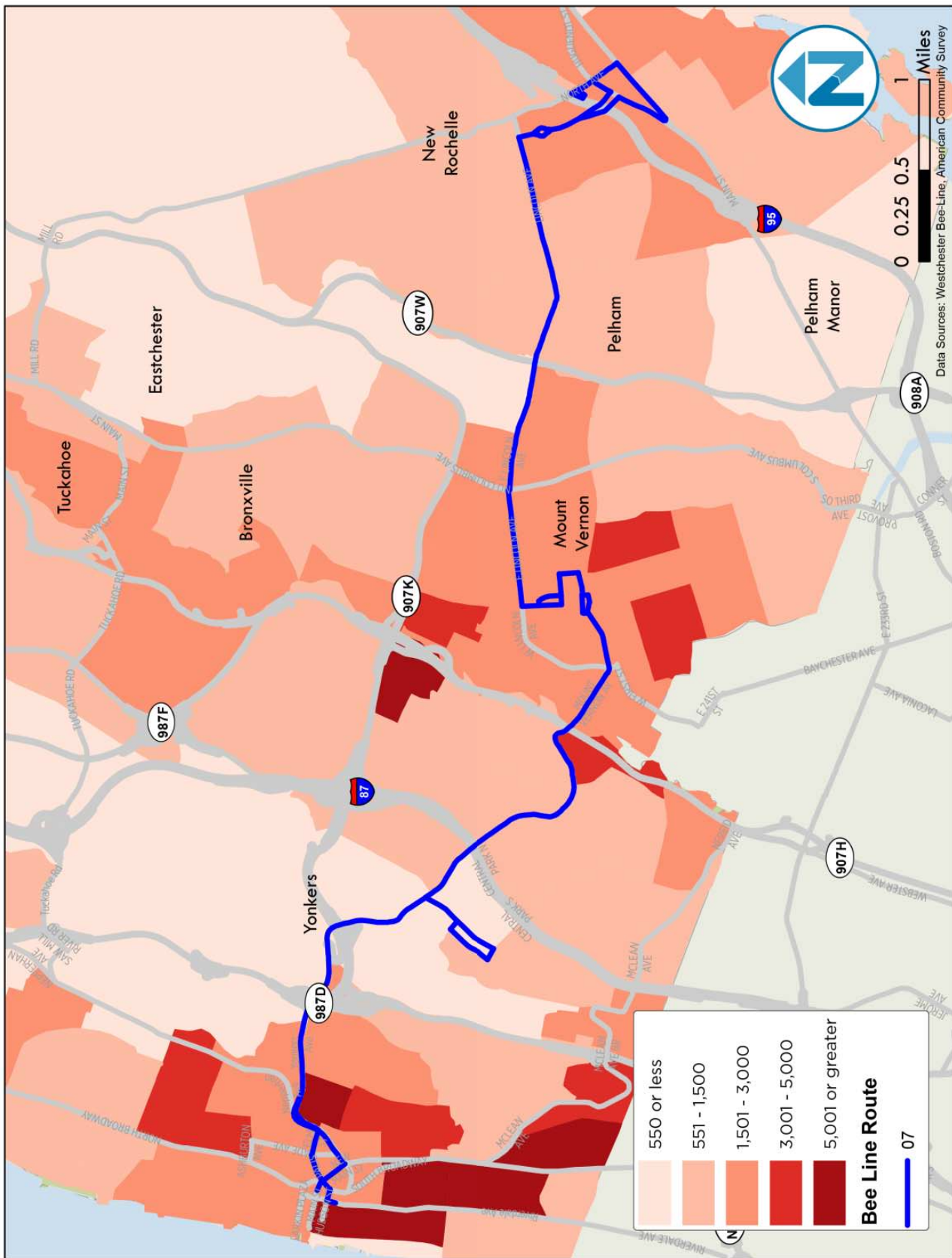
# INITIAL ANALYSIS

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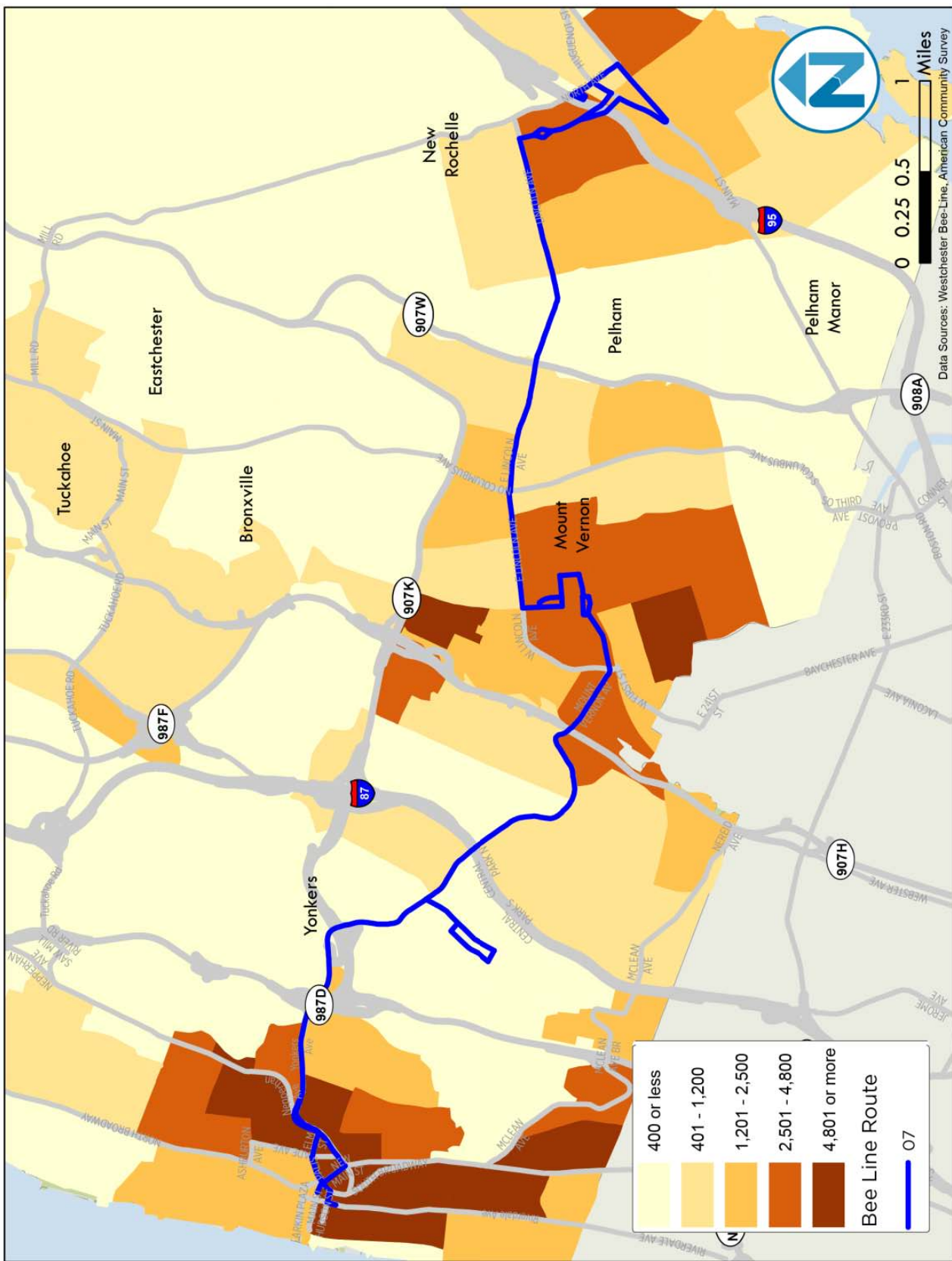
# Key Destinations



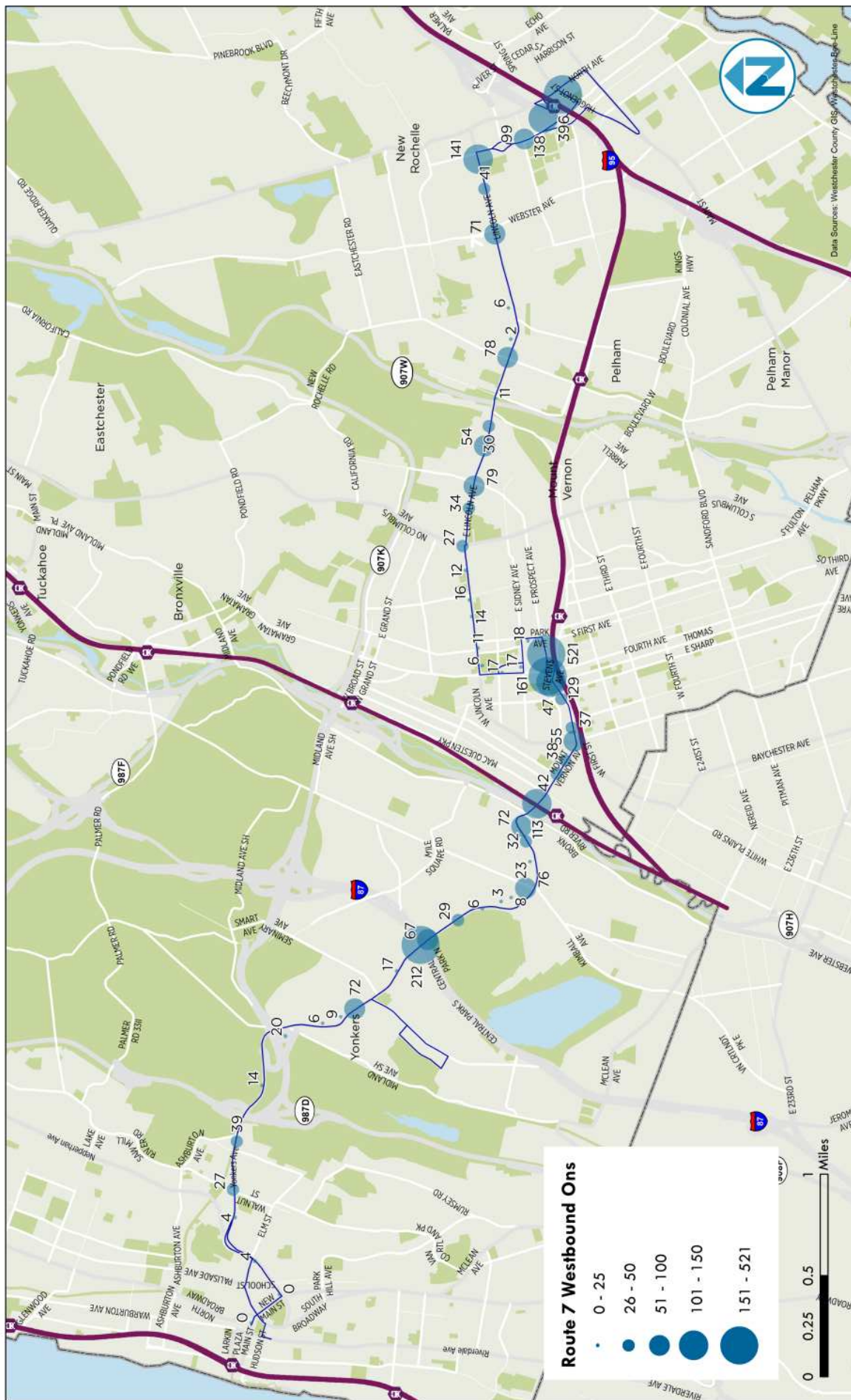
# Transit Users



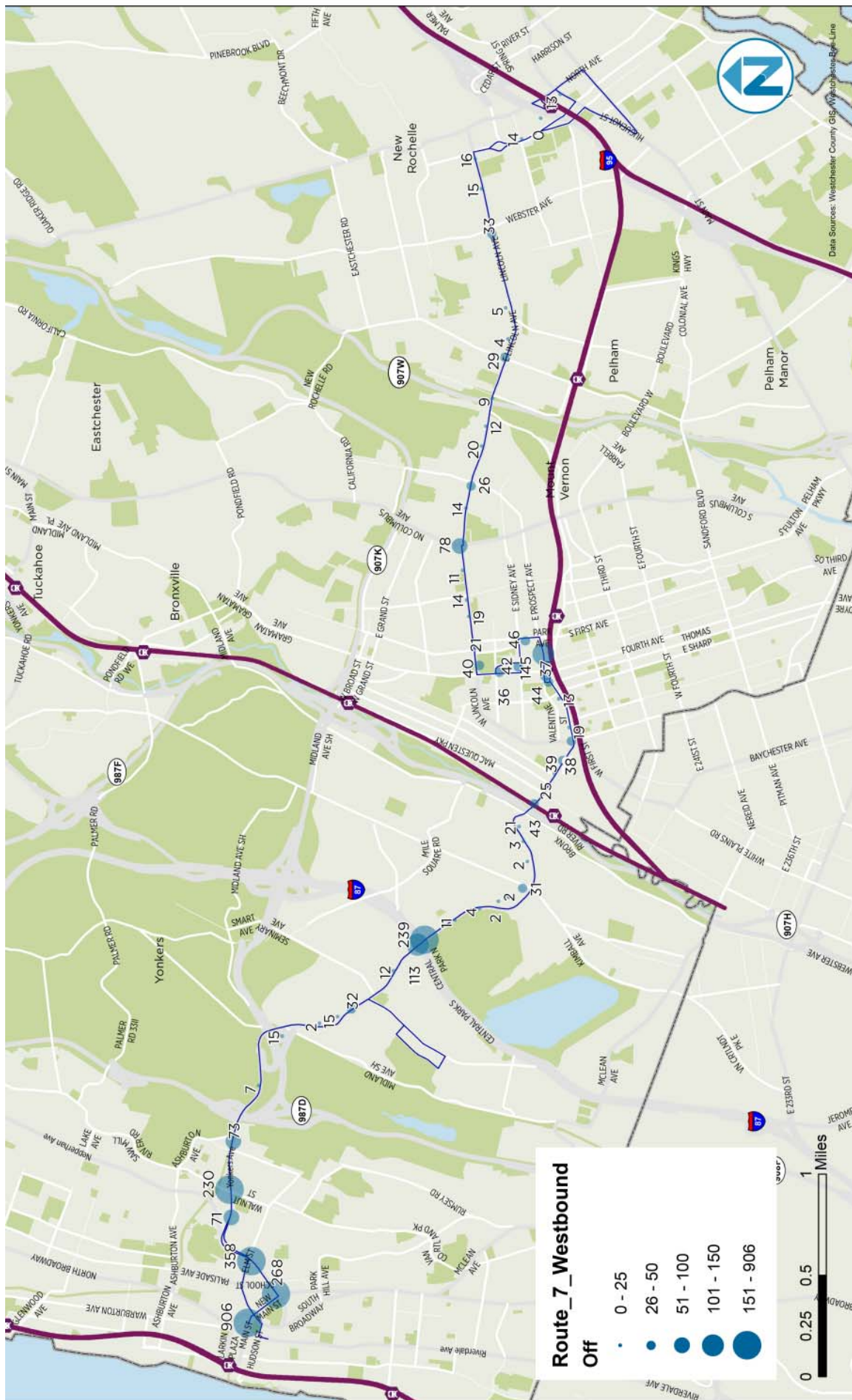
# Zero Car Households



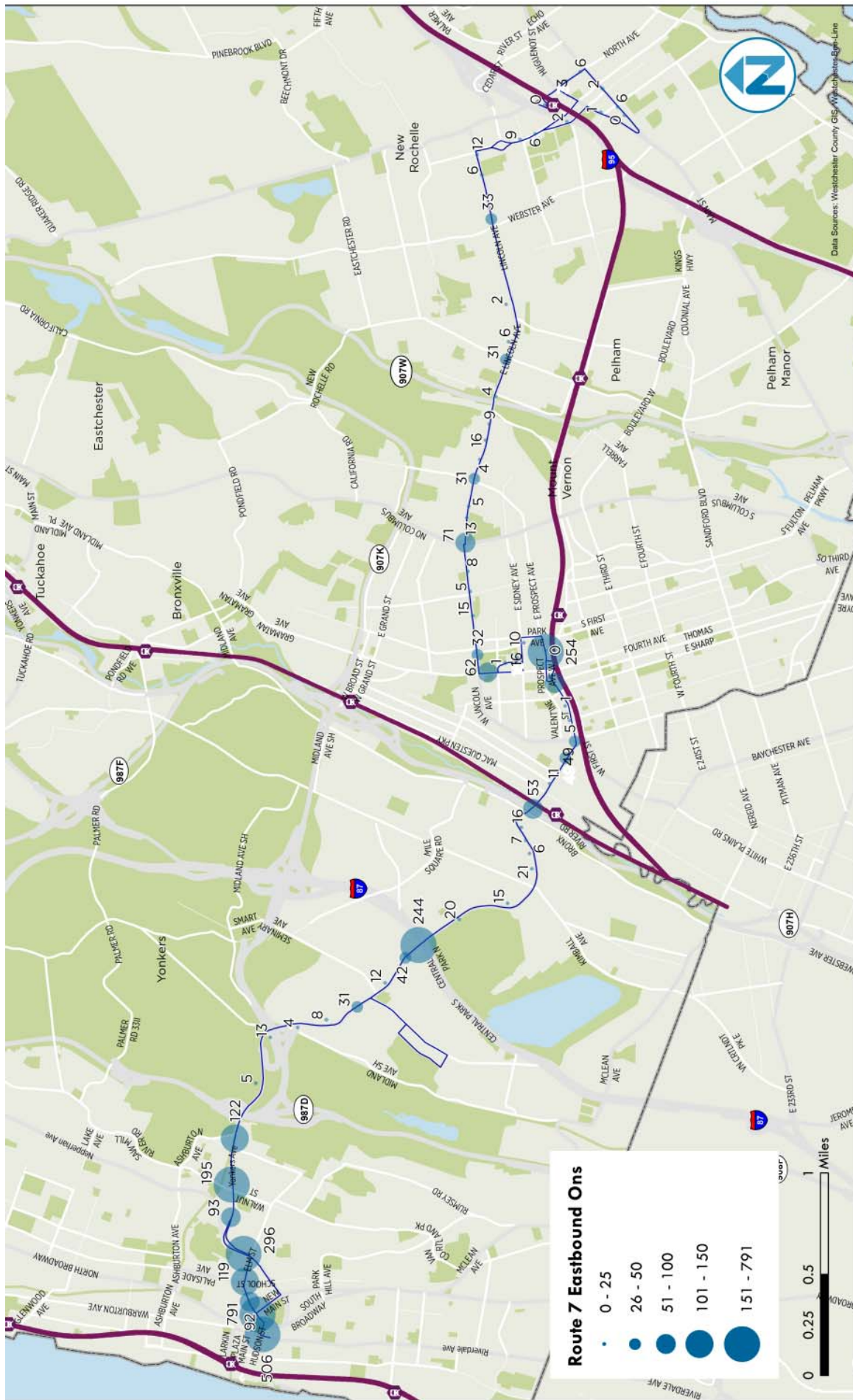
# Boardings by Stop: Route 7 Westbound



# Alightings by Stop: Route 7 Westbound

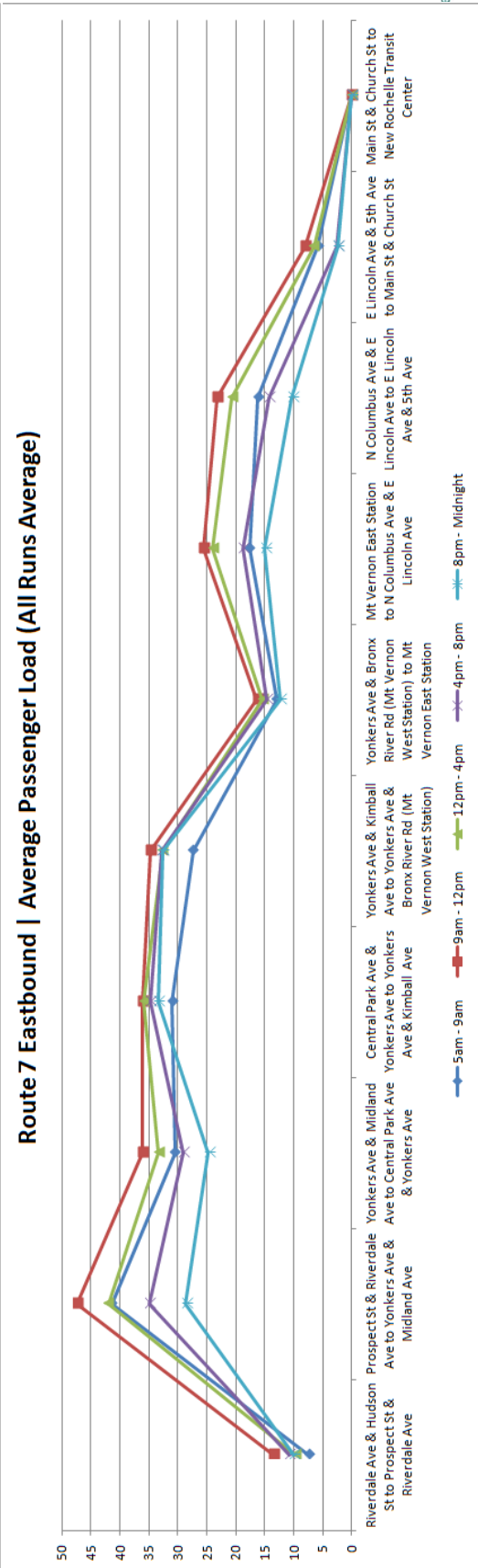
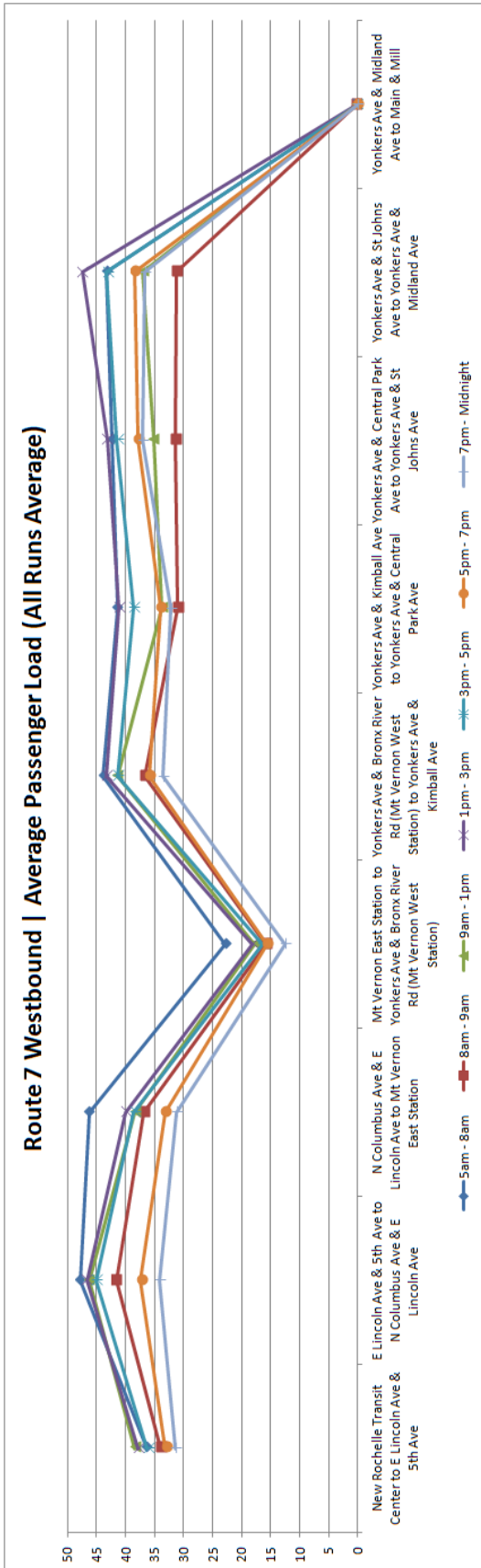


# Boardings by Stop: Route 7 Eastbound

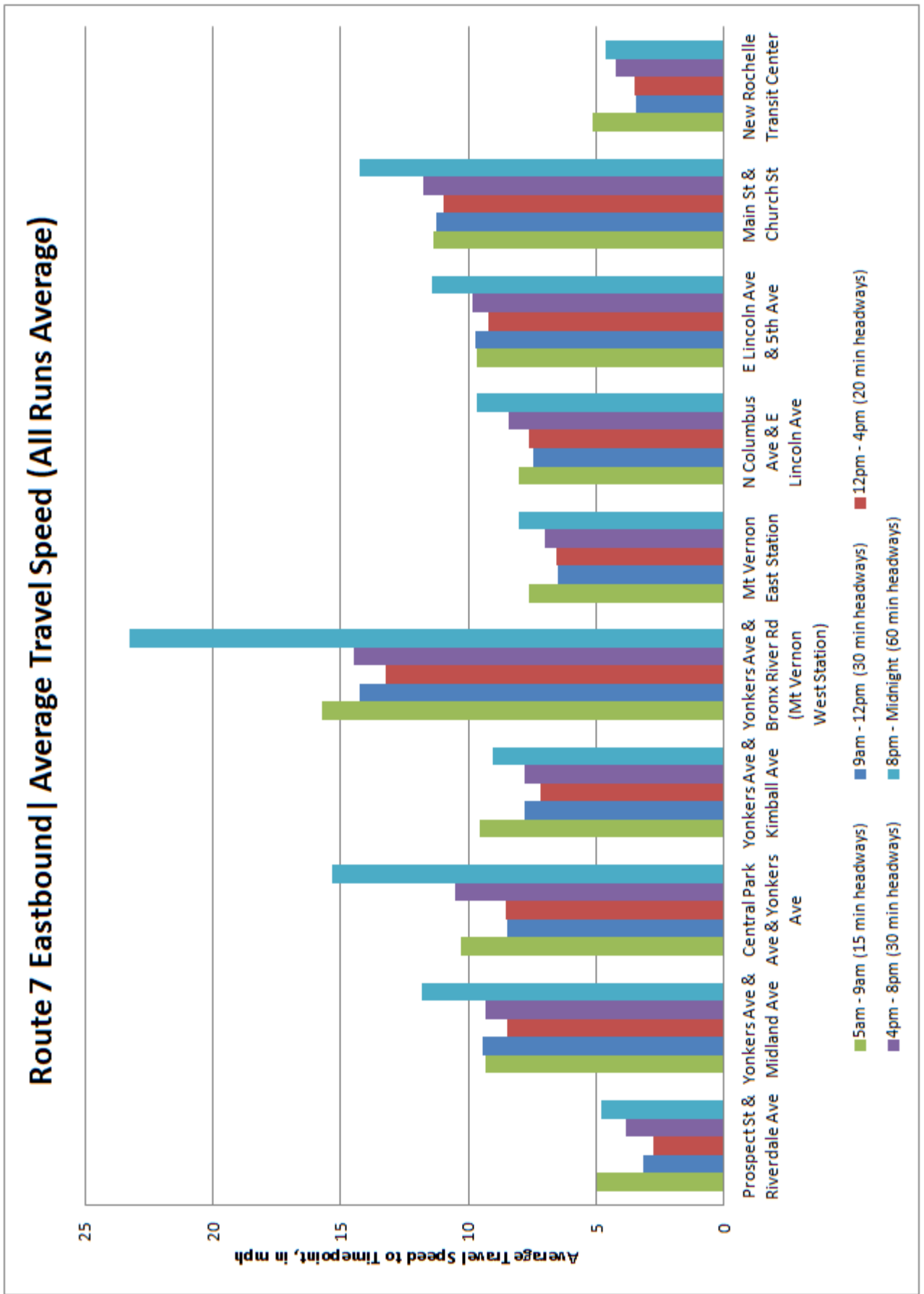




# Route 7 Onboard Passenger Load

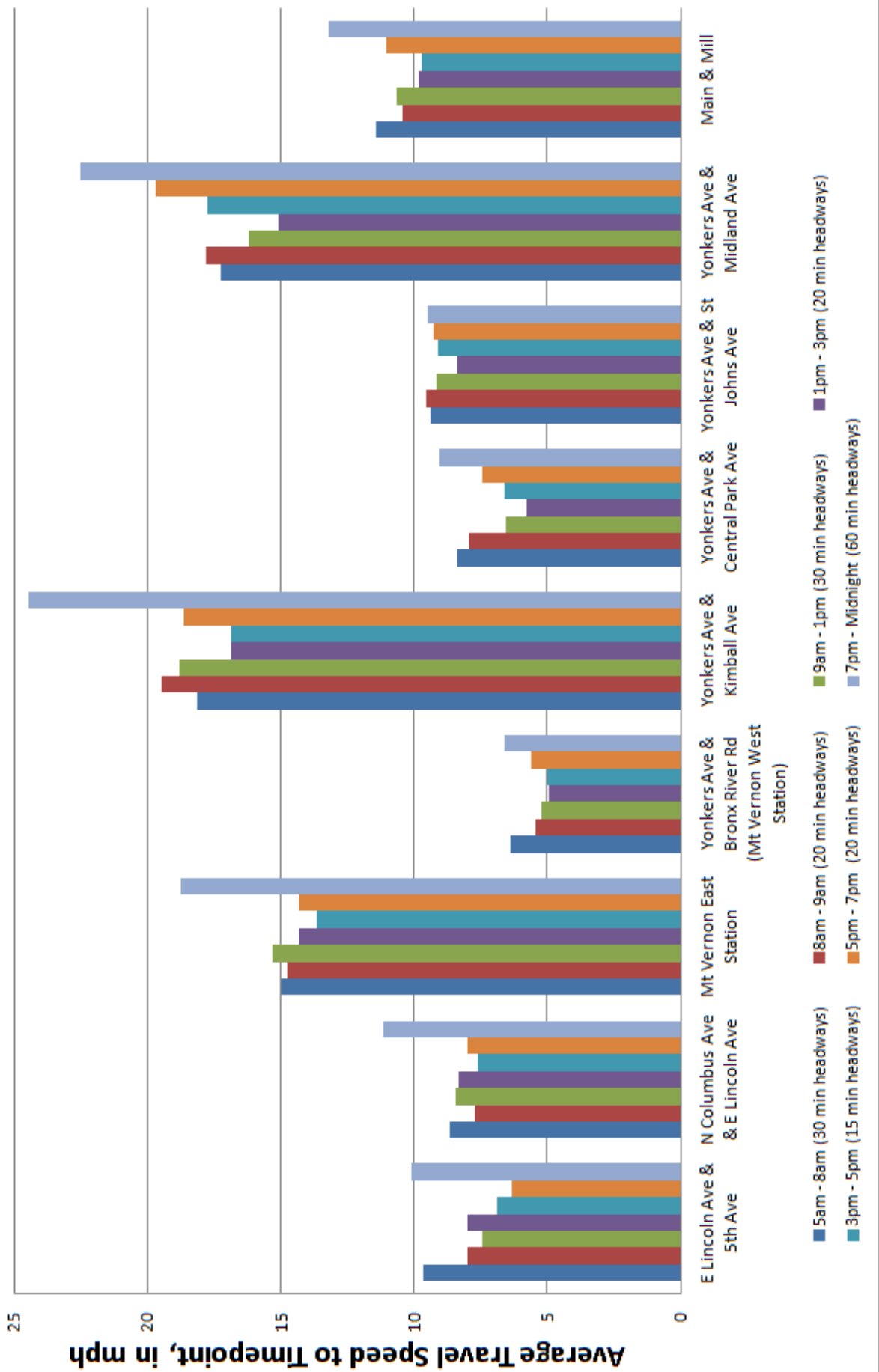


## Route 7 Eastbound Average Travel Speed

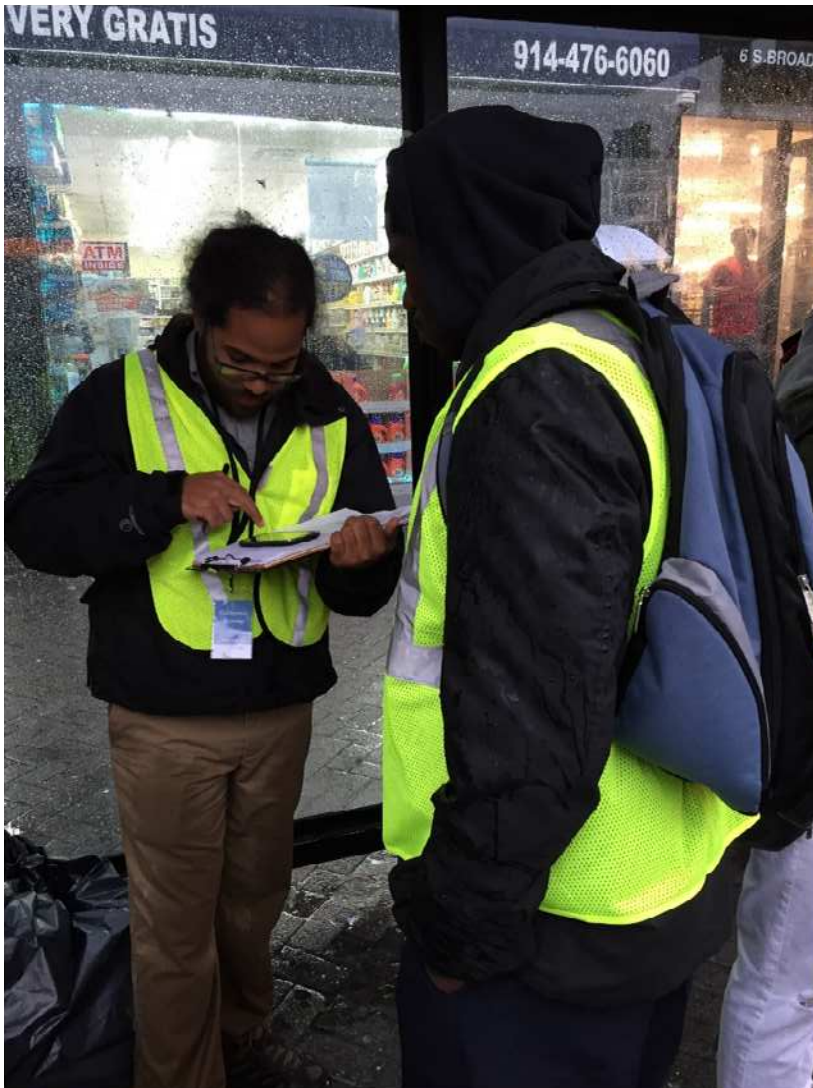


## Route 7 Westbound Average Travel Speed

Route 7 Westbound | Average Travel Speed (All Runs Average)



# Rider Origin/Destination Survey



- Conducted on Route 7 in October 2015 with on-board surveyors in English, Spanish
  - Collected 510 rider responses
  - All trips represented, both eastbound and westbound
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## Route 7 Eastbound: Surveyed To/From Patterns

		<b>DESTINATIONS</b>					<b>Origin Subtotal</b>	
		<b>Yonkers</b>	<b>Mount Vernon</b> Includes: Mount Vernon, Mount Vernon East and Mount Vernon West	<b>Pelham</b>	<b>New Rochelle</b> Includes: New Rochelle, Larchmont	<b>Bronx</b>		<b>Other</b> Includes: Rye, Valhalla, White Plains, Eastchester
<b>ORIGINS</b>	<b>Yonkers</b>	25.3%	30.5%	0.8%	17.3%	1.2%	3.2%	78%
	<b>Mount Vernon</b> Includes: Mount Vernon, Mount Vernon East and Mount Vernon West	0.0%	8.0%	2.0%	8.8%	0.4%	0.0%	19%
	<b>Pelham</b>	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0%
	<b>New Rochelle</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
	<b>Bronx</b>	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	1%
	<b>Other</b> Includes: Woodlawn, Tuckahoe	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	1%
<b>Destination Subtotal</b>		26%	40%	3%	26%	2%	3%	

## Route 7 Westbound: Surveyed To/From Patterns

		DESTINATIONS						Origin Subtotals
		Yonkers	Mount Vernon Includes: Mount Vernon, Mount Vernon East and Mount Vernon West	Pelham	New Rochelle	Bronx	Other Includes: Bronxville, White Plains, Harrison	
ORIGINS	Yonkers	13.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.0%
	Mount Vernon Includes: Mount Vernon, Mount Vernon East and Mount Vernon West	22.2%	8.1%	0.0%	0.0%	0.5%	0.5%	31.4%
	Pelham	1.1%	1.1%	0.0%	0.0%	1.1%	0.5%	3.8%
	New Rochelle	25.4%	17.8%	0.5%	5.4%	1.1%	1.1%	51.4%
	Bronx	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.5%
Destination Subtotals		61.6%	27.6%	0.5%	5.4%	2.7%	2.2%	

## Route 7 Both Directions: Surveyed To/From Patterns

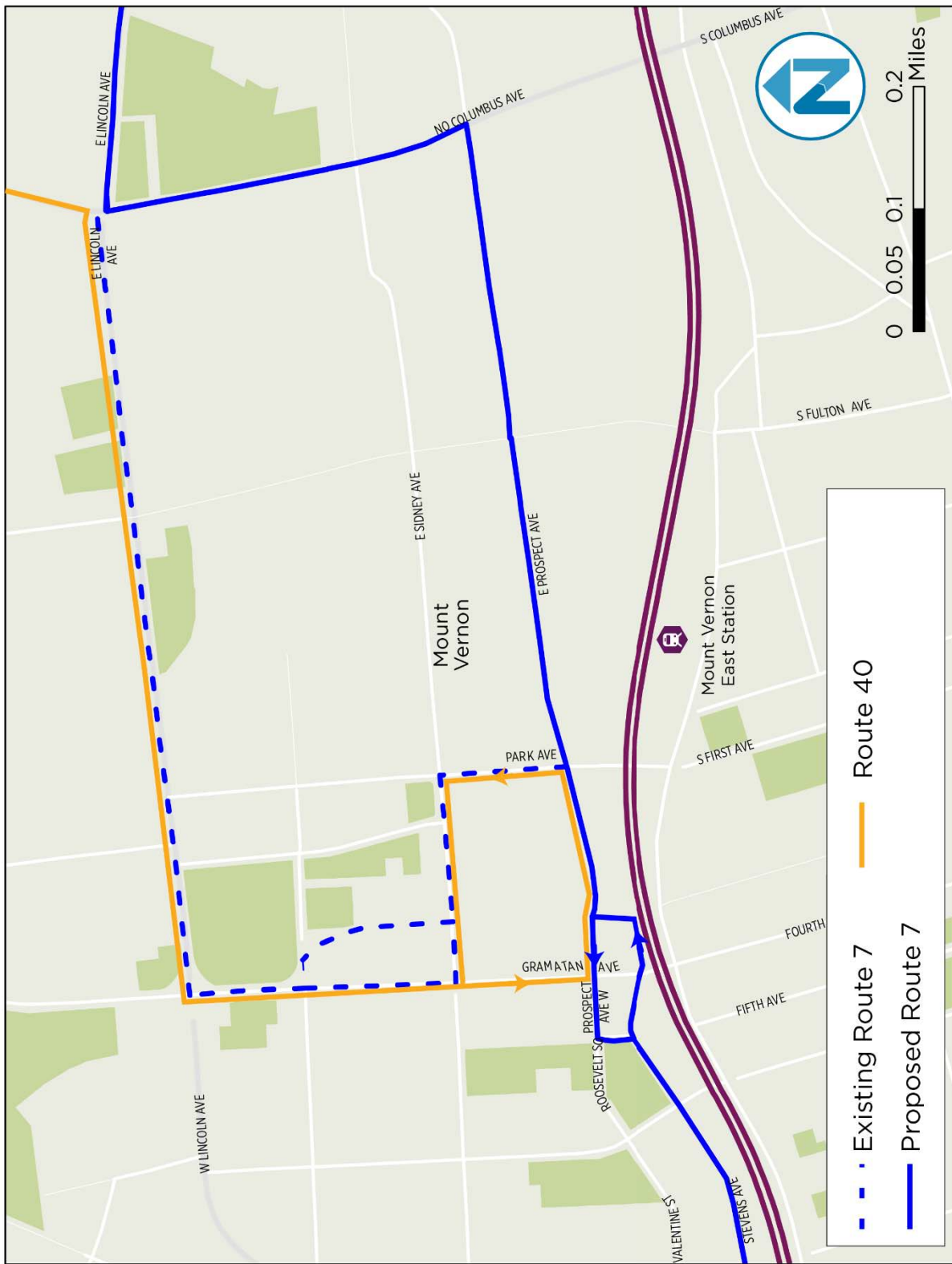
		<b>DESTINATIONS</b>						
<b>ORIGINS</b>		<b>Yonkers</b>	<b>Mount Vernon</b> Includes: Mount Vernon, Mount Vernon East and Mount Vernon West	<b>Pelham</b>	<b>New Rochelle</b> Includes: New Rochelle, Larchmont	<b>Bronx</b>	<b>Other</b> Includes: Rye, Valhalla, White Plains, Eastchester, Bronxville, Harrison	<b>Origin Subtotal</b>
	<b>Yonkers</b>	20.0%	17.5%	0.5%	9.9%	0.7%	1.8%	50.5%
	<b>Mount Vernon</b> Includes: Mount Vernon, Mount Vernon East and Mount Vernon West	9.4%	8.1%	1.2%	5.1%	0.5%	0.2%	24.4%
	<b>Pelham</b>	0.5%	0.5%	0.0%	0.0%	0.7%	0.2%	1.8%
	<b>New Rochelle</b>	10.8%	7.6%	0.2%	2.3%	0.5%	0.5%	21.9%
	<b>Bronx</b>	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.9%
	<b>Other</b> Includes: Woodlawn, Tuckahoe	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.5%
	<b>Destination Subtotal</b>	41.0%	34.8%	1.8%	17.3%	2.3%	2.8%	100.0%

# TYPICAL STRATEGIES TO IMPROVE ROUTES

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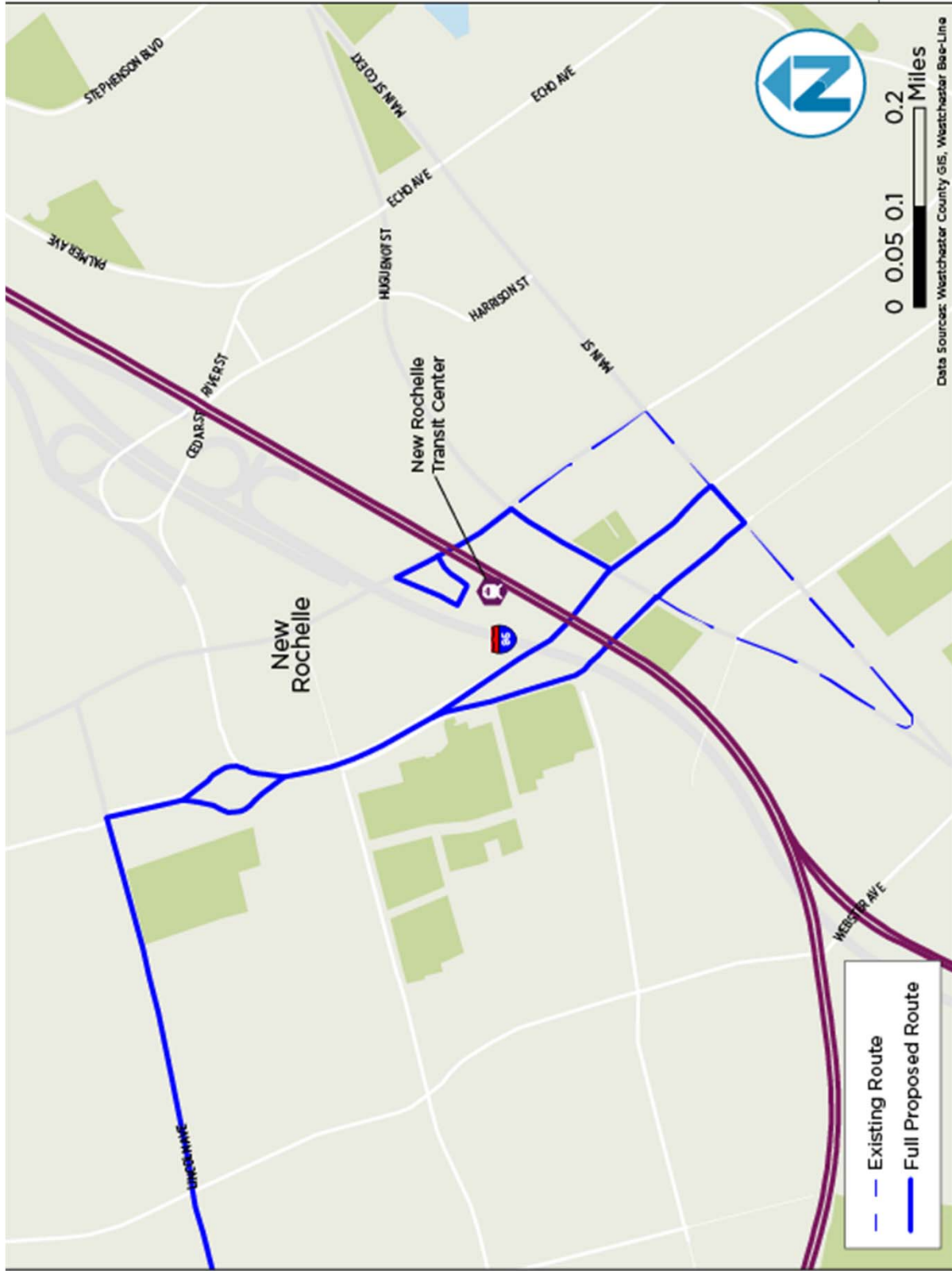


# Streamline



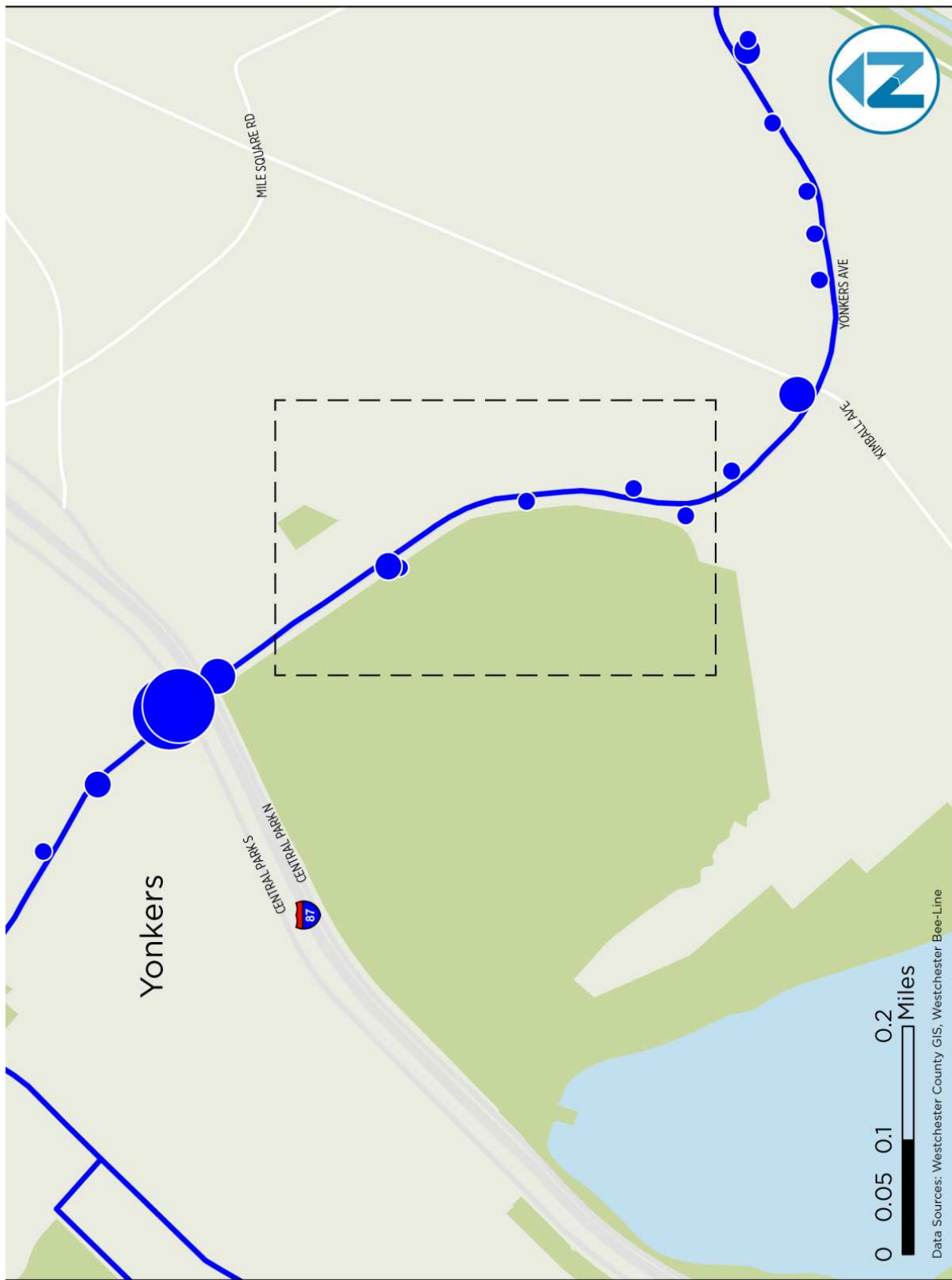
Example: Mount Vernon

# Streamline



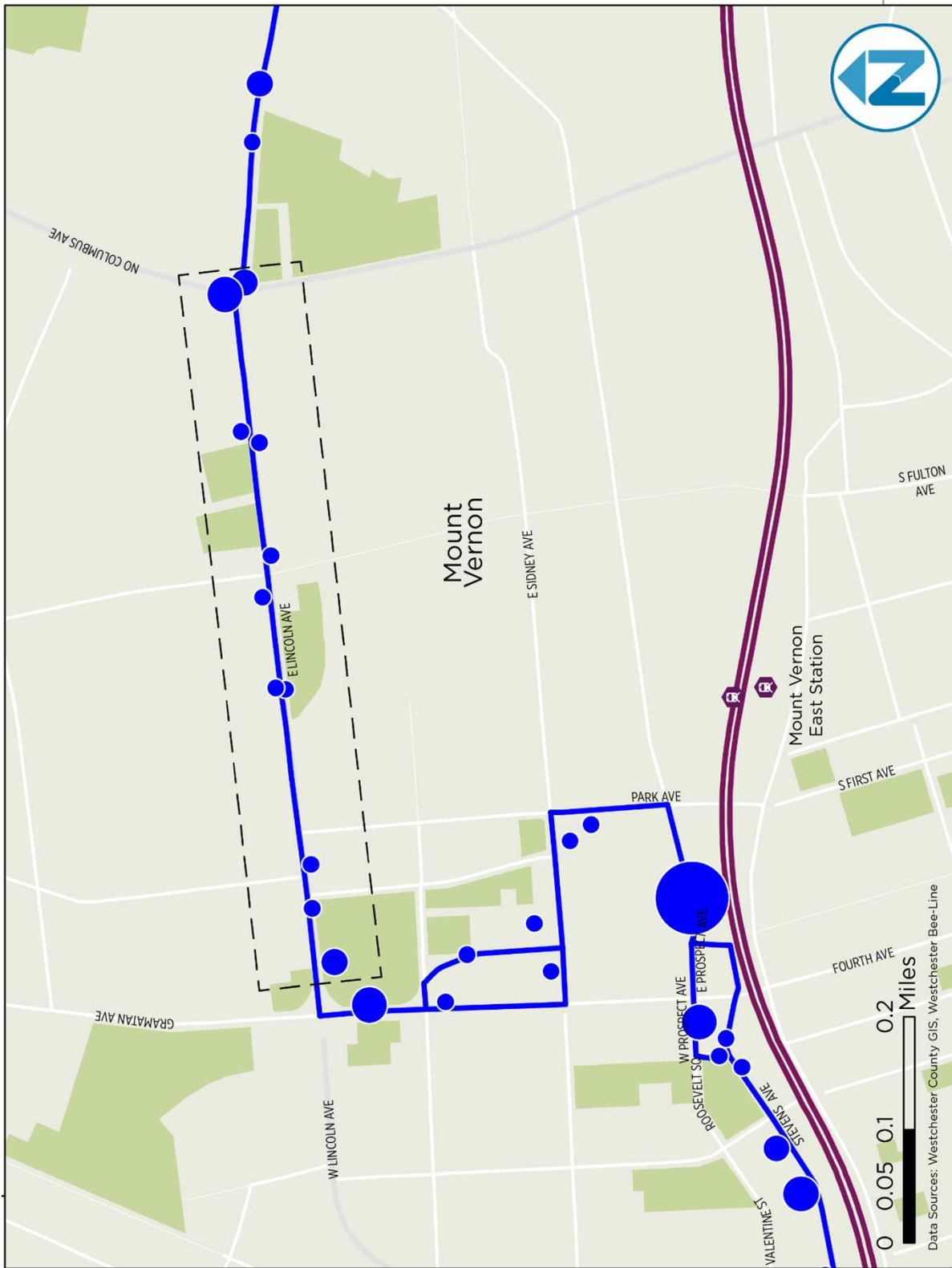
Example: New Rochelle

# Stop Consolidation



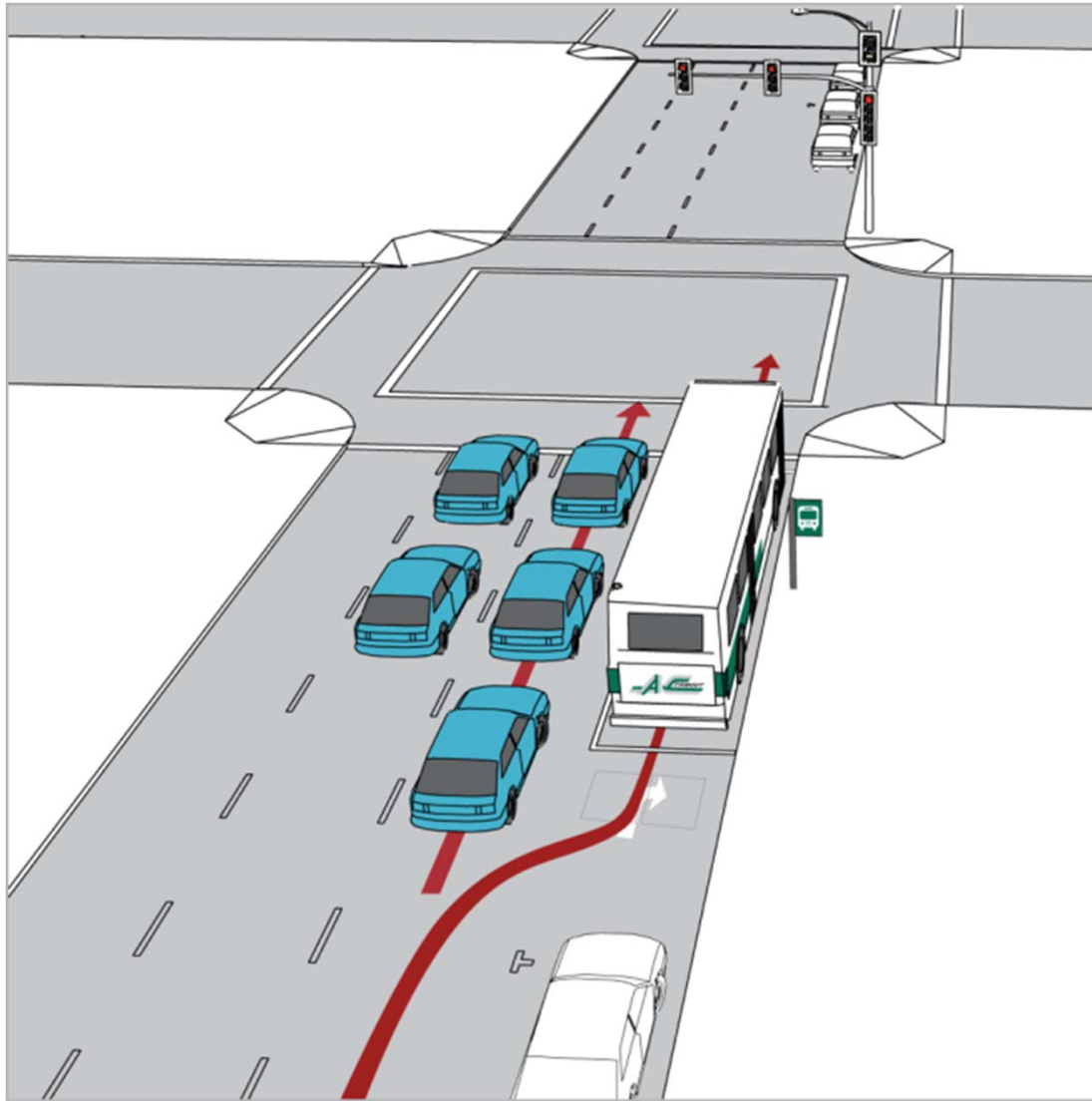
Example: Yonkers

# Stop Consolidation



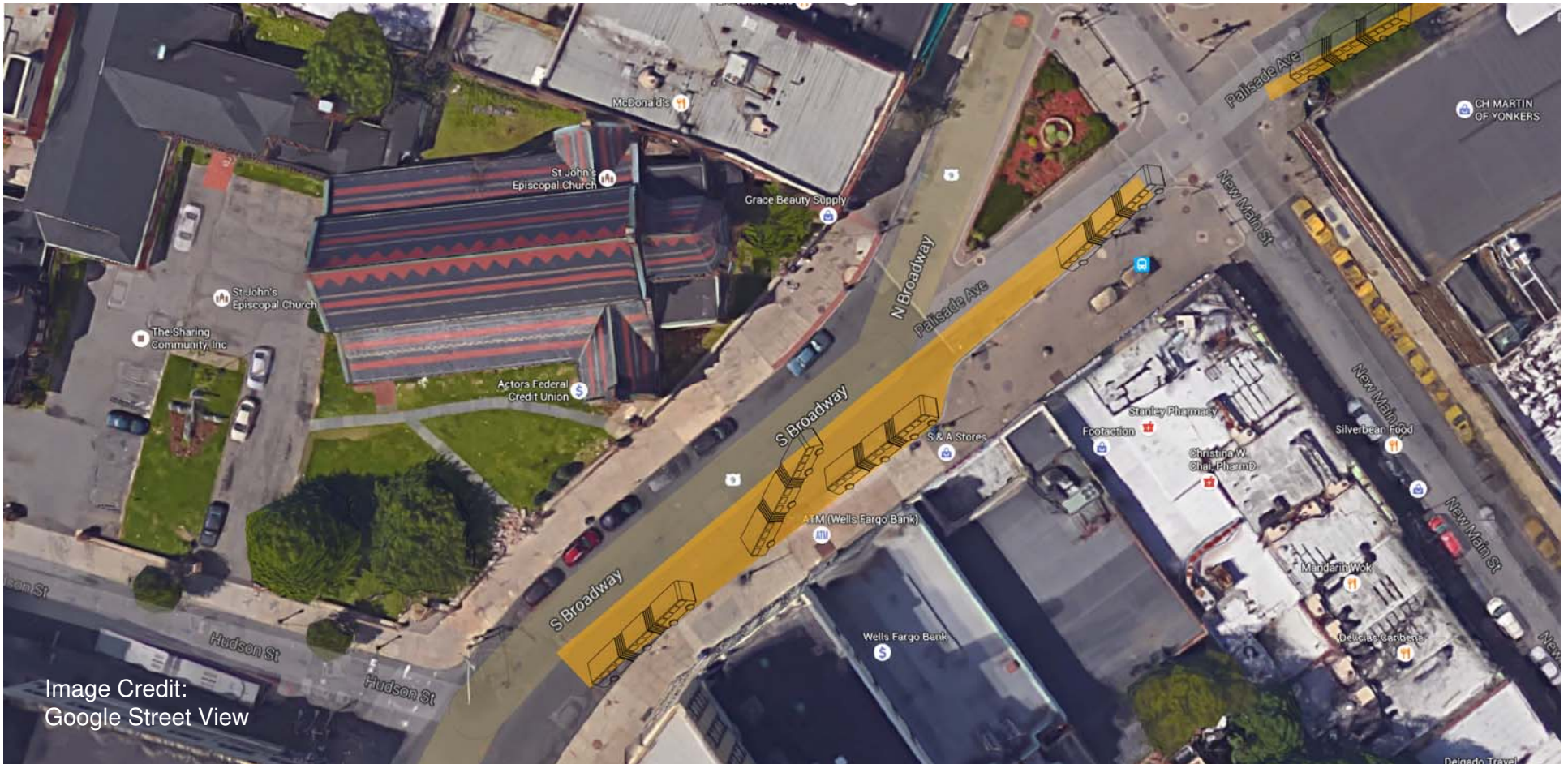
Example: Mount Vernon

## Queue Jump Lanes



- Buses can achieve faster travel times through queue jump lanes.
- Queue jump lanes are generally built with bus-only traffic signals allowing buses to cross intersections ahead of general traffic.
- Some queue jump lanes are bus-only, while others permit right-turning vehicles.

# Queue Jump (Example: Getty Square)



# Queue Jump (Example: Yonkers Avenue & Bronx River Road)



Image Credit:  
Google-Street View

# RELATION TO OTHER STUDIES

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## New Rochelle Traffic Circulation & Gateways to Downtown



# DISCUSSION

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# Project Timeline





This presentation has been prepared by the Westchester County  
**Department of Transportation.**

For further information, please visit  
<http://transportation.westchestergov.com/planning-division>  
or contact Craig Lader, Principal Planner at (914) 813-7759