

Maintaining Key Transit Services While Retaining National Core Values



*New York City Transit's Title VI &
Environmental Justice
Strategies in a Recession*

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**Operations Planning
New York City Transit Authority**

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Responses to Recession

Fare Increase		
Fare Media Type	2009	2010
Monthly Unlimited MetroCard	\$89	\$104
Weekly Unlimited MetroCard	\$27	\$29
Single Ride Ticket	\$2	\$2.25

Rationalization	
Subway Route Elimination	“V” & “W” Trains
Bus Route Elimination	16 Bus Routes
Route Modification	28 Routes
Service Span Reduction	130 Time Spans

Proposed Service Rationalization

Subway

- Extend Q to Astoria and operate N local north of Canal St. to replace W
- **Discontinue V entirely; discontinue M between Delancy-Essex and Bay Parkway; extend M to replace V between Delancy-Essex and Continental**
- Operate G between Court Square and Church Avenue at all times
- Reduce weekend train frequencies to accommodate construction work
- Revise Off-peak service levels
- Eliminate special rail services; Staten Island Railway Baseball Service

Bronx Buses

- Eastern Bronx Restructuring Package (BX5/8/14)
- Proposed BX18 change
- BX39/BX41 swap north of Gun Hill Road
- Substitute BX55 Limited with BX15 Local during evenings and weekends
- **Co-op City Restructuring Package (BX25/26/28/30/38)**
- Discontinue Off-peak and Saturday BX20 service
- Discontinue Weekend and Overnight BX34
- Reduce service spans on BX32/BX33/BX34 and BX17
- Discontinue Barretto Point Park Pool Shuttle

Brooklyn Buses

- Brownstone Brooklyn Restructuring package #1 (B57/61/75/77)
- Brownstone Brooklyn Restructuring package #2 (B67/69)
- Brownstone Brooklyn Restructuring package #3 (B37/71)
- Bay Ridge Restructuring package (B1/8/64/70)
- Discontinue B64 South of 25th Avenue
- Discontinue B12 East of Alabama Avenue, and B48 South of Fulton St.
- Discontinue all B23, B39, and B51 services
- Discontinue B3 South of Avenue U / 71 street, Q24 West of Broadway Junction
- Modify B4 East of Coney Island Avenue (modified to operate via Avenue Z)
- Discontinue B13 service North of Wyckoff Hospital
- Discontinue weekend B2, B24 services
- Reduce service spans on Brooklyn local buses

Manhattan Buses

- Lower East Side Restructuring Package (M9/15/20/21)
- Discontinue all M18, M27, M30 services and M42 to the Javits Center
- Restructure North-South Service in Manhattan Package #1 (M5/6)
- Restructure North-South Service in Manhattan Package #2 (M1/3)
- Discontinue M10 South of Columbus Circle, M104 along 42nd st. and restructure M98
- Proposed M22 changes
- Discontinue weekend M8, M50 services
- Reduce service spans on Manhattan local buses

Staten Island Buses

- New Brighton Restructuring Package (S42/S52)
- Grymes Hill Restructuring Package (S60/S66)
- Discontinue all S67 service
- Discontinue S40/90 to Howland Hook
- Discontinue weekend S54, S76 services
- Reduce service spans on Staten Island local buses

Queens Buses

- Whitestone restructuring package (Q14/15)
- Discontinue all Q74, Q75, Q79 services
- Discontinue off-peak Q26 and Q42 services
- Discontinue weekend Q31 and Saturday Q76 services
- Reduce service spans on Queens local buses

Express Buses

- Hylan Blvd Restructuring Package (X1~X9)
- Port Richmond Restructuring Package (X13/14)
- Discontinue express bus services serving Manhattan (X25/90), Bronx-Queens (X32) Staten Island (X16/18/20), Brooklyn (X29), and Queens (X51)
- Discontinue X27, X28 weekend express bus services
- Consolidate X27/37 and X28/38 into combined Downtown-Midtown service

National Core Values

(and the law)

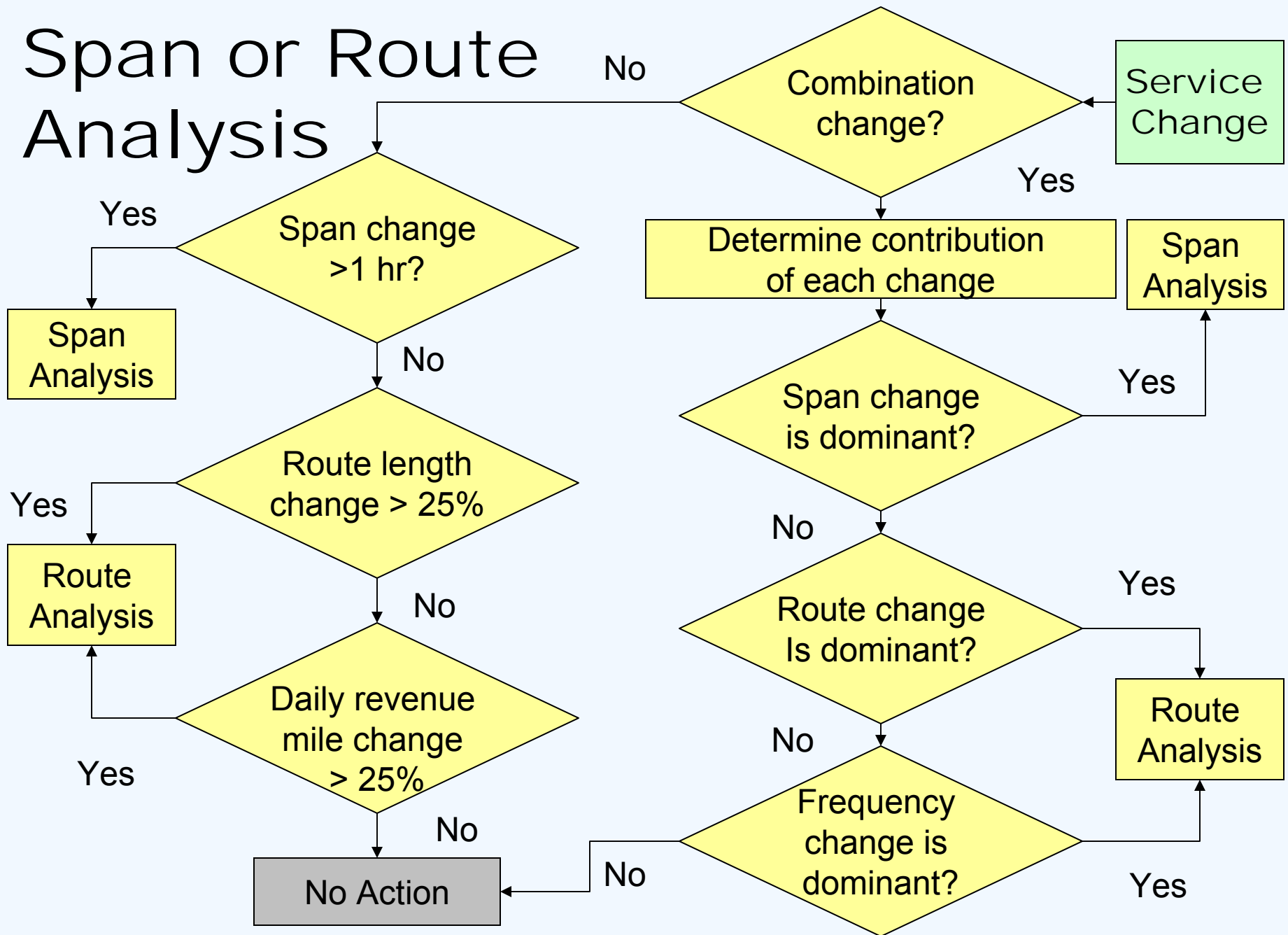
“No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”

– **Title VI of the Civil Rights Act (1964)**

“To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

– **Executive Order 12898 (1994)**

Span or Route Analysis



Seats Occupied

Load Factor of X% =
Average Riders / Trip
Bus Seats

100% means all seats are occupied

Load Factor of 20% =
8 Riders (Avg.) / Trip
40 Std. Bus Seats

or

(80% of all seats are empty)



Span Reduction by Hour **

Non-Minority				Minority			
Route	Day Type	Loads / Trip	Load Factor %*	Route	Day Type	Loads / Trip	Load Factor %*
B64	ALL	4	10	BX34	ALL	3	8
B67	ALL	3	7	BX32	WKD	12	29
B2	WKD	4	10	BX33	WKD	4	11
B9	WKD	4	10	BX33	SAT	7	18
B16	WKD	6	15	BX33	SUN	6	15
B9	SAT	4	9	BX17	SUN	5	12
B9	SUN	3	8	B7	ALL	6	14

*During off peak / overnight hours selected for reduction

**Full list of route analysis are presented in the paper

Overnight Service Reduction**

Above Poverty				Below Poverty			
Route	Day Type	Loads / Trip	Load Factor %*	Route	Day Type	Loads / Trip	Load Factor %*
B67	ALL	3	7	B64	ALL	4	10
B2	WKD	4	10	B9	WKD	4	10
M8	ALL	1	3	B16	WKD	6	15
M50	ALL	2	6	B9	SAT	4	9
M66	ALL	2	5	B9	SUN	3	8
M20	WKD	6	16	B16	SUN	3	8
M20	SAT	6	15	M16	ALL	3	6

*During off peak / overnight hours selected for reduction

**Full list of route analysis are presented in the paper

Average Load Factor (Weekday)*

Title VI	Minority	Non Minority
Spans	32	33
Avg. Load Factor	12%	11%
Variance	0.0038	0.0036
t-test	-2.02 < -0.60 < 2.02	
Result	No Disparity	

EJ	Below Poverty	Above Poverty
Spans	35	30
Avg. Load Factor	12%	10%
Variance	0.0034	0.0039
t-test	-2.04 < -1.32 < 2.04	
Result	No Disparity	

* Weekend and Overnight Service Span Elimination Analysis resulted in **no disparity** between impacted communities

Service Change: M/V Trains

- “M” partially discontinued (Essex St. to Bay Pkwy)
- “M” extended to replace “V” (Bway-Lafayette to Continental)



"M" Train Elimination (Minority)

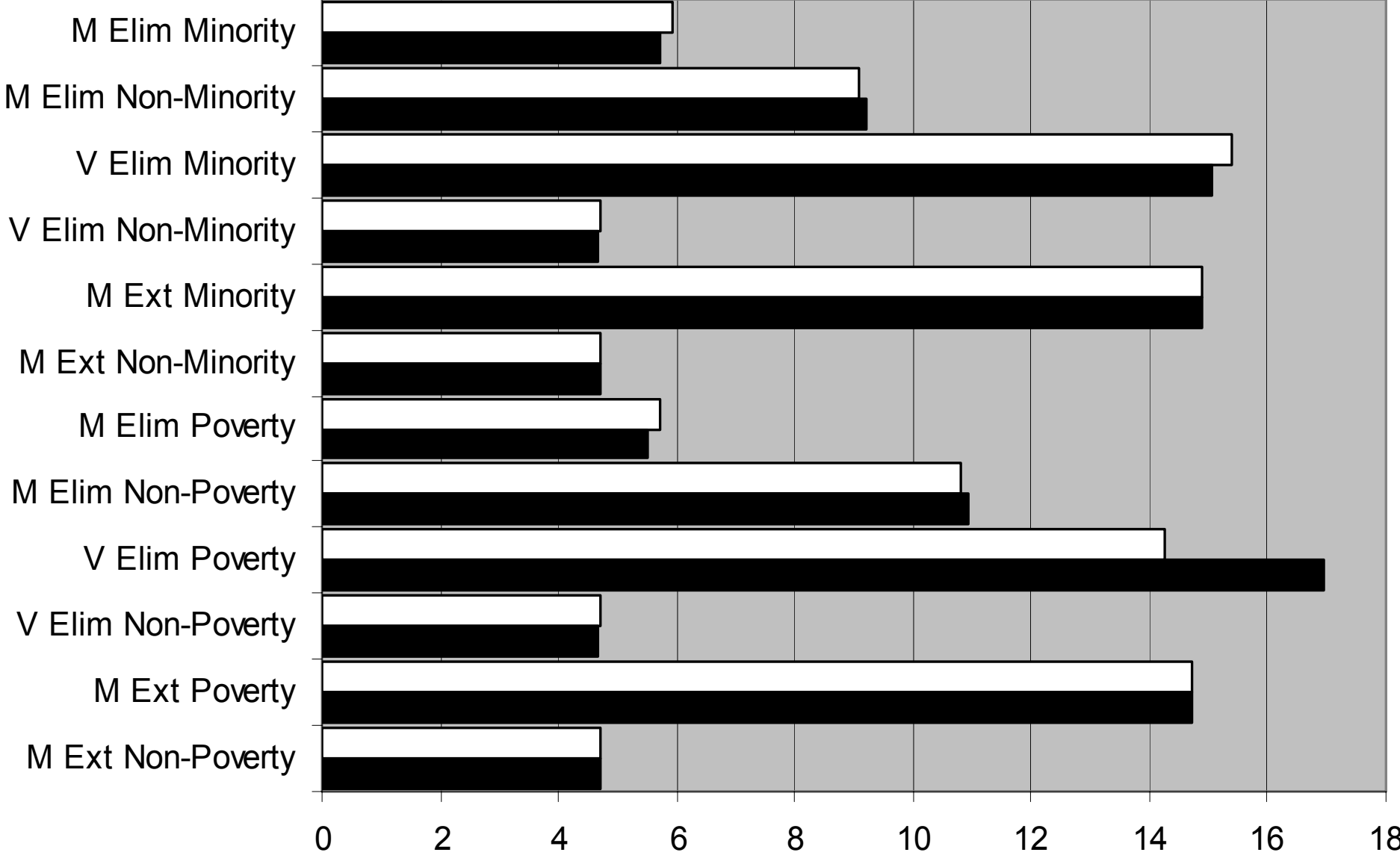
Census Tracts				Travel Time (min)		Total Cost / Trip	
Origin*	Dest.*	Origin Riders	Riders in O-D	Before Elim.	After Elim.	Before Elim.	After Elim.
Allen St at Delancy	Mott St at Grand St	1494	305	8	8	\$1.50	\$1.50
	Allen St at Delancy St		290	0	0	\$0.00	\$0.00
	Crosby St at Grand St		260	9	8	\$1.50	\$1.50
Ethridge at Canal St	Ethridge at Canal St	1424	435	0	0	\$0.00	\$0.00
	Kent PI at Cardinal Hayes PI		175	10 w	10 w	\$0.00 w	\$0.00 w
	Mott St at Grand St		130	8 w	8 w	\$0.00 w	\$0.00 w
Madison St at Market St.	Madison St at Market St.	1374	360	0	0	\$0.00	\$0.00
	Crosby St at Grand St		230	15	15	\$1.50	\$1.50
	Ethridge at Canal St		165	5 w	5 w	\$0.00 w	\$0.00 w
Mott St at Grand St	Mott St at Grand St	1298	435	0	0	\$0.00	\$0.00
	Crosby St at Grand St		240	4 w	4 w	\$0.00 w	\$0.00 w
	Worth St at Lafayette St		160	9	7	\$1.50	\$1.50
Kent PI at Cardinal Hayes PI	Kent PI at Cardinal Hayes PI	898	310	0	0	\$0.00	\$0.00
	Mott St at Grand St		165	11	11	\$1.50	\$1.50
	Crosby St at Grand St		105	10	10	\$1.50	\$1.50

W: Walking only (No transit usage involved)

* Census Transportation Planning Package (CTPP) Journey to Work Data

M & V Train Modification: Before & After Impact on Customers (Minutes)

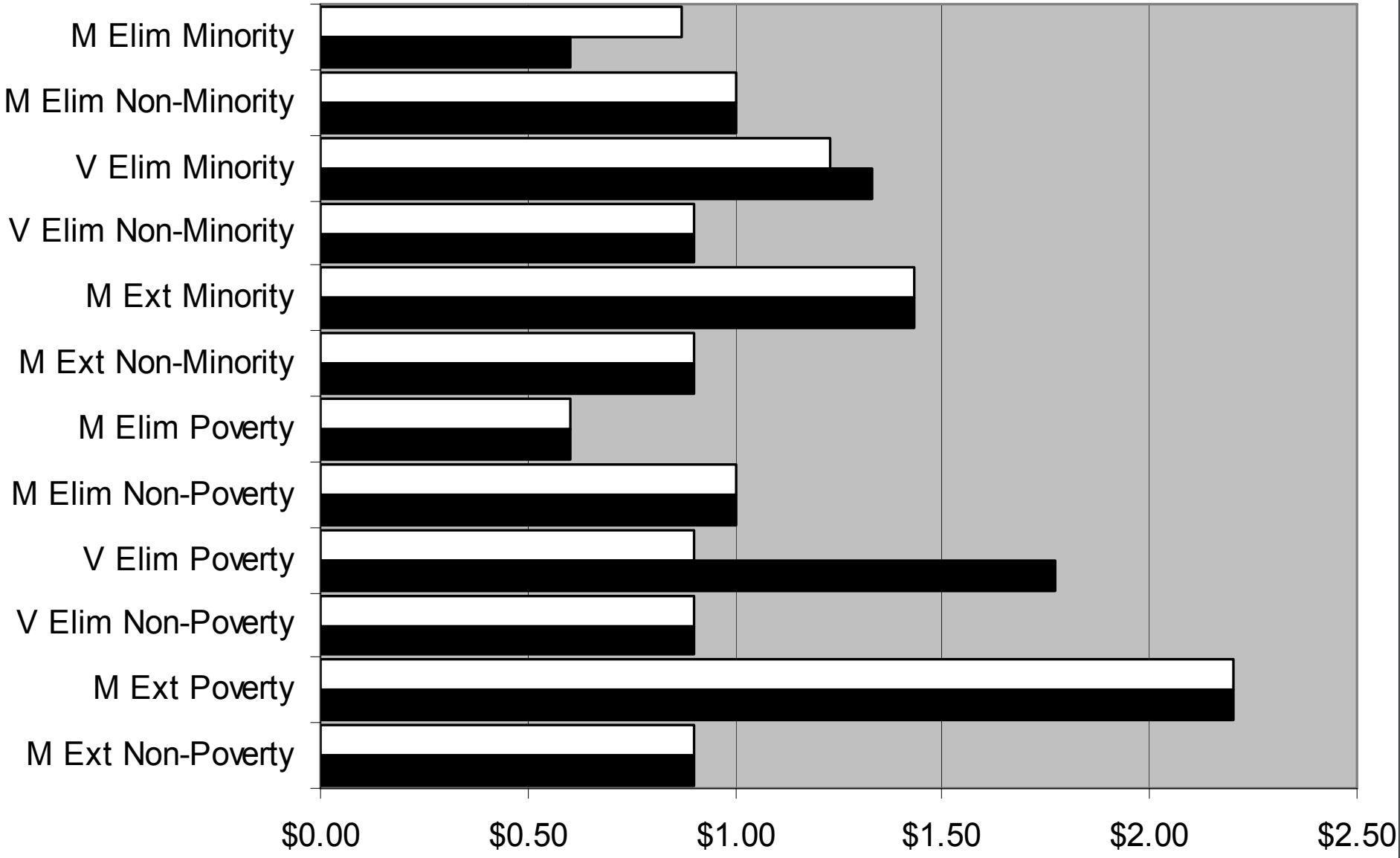
□ Before ■ After



M & V Train Modification: Before & After Impact on Customers

□ Before ■ After

(\$)



Bus Route Change

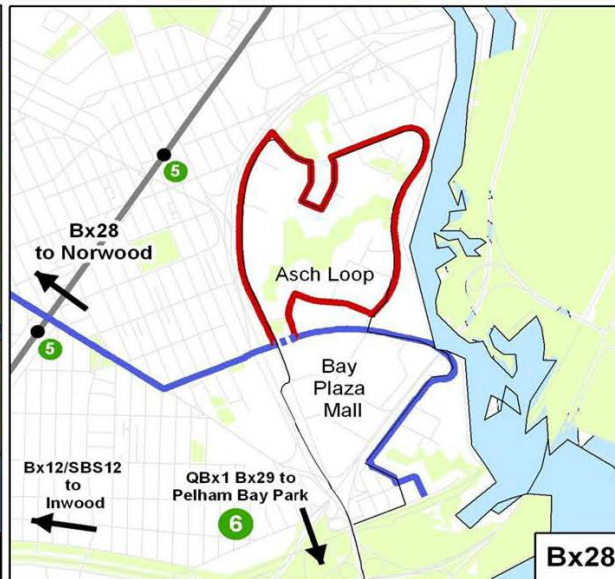
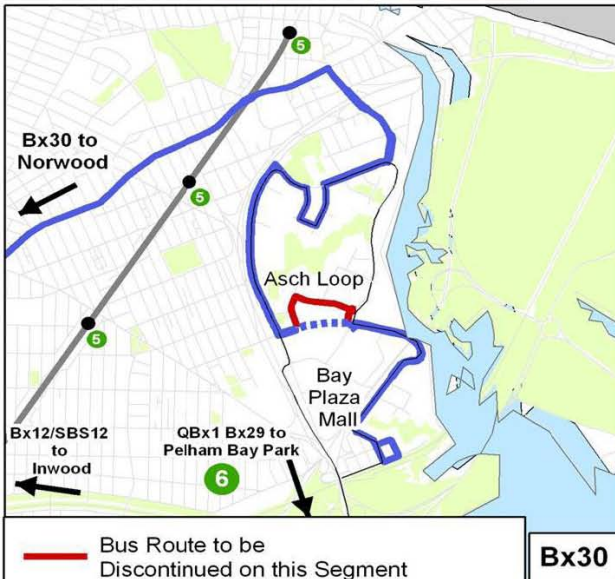
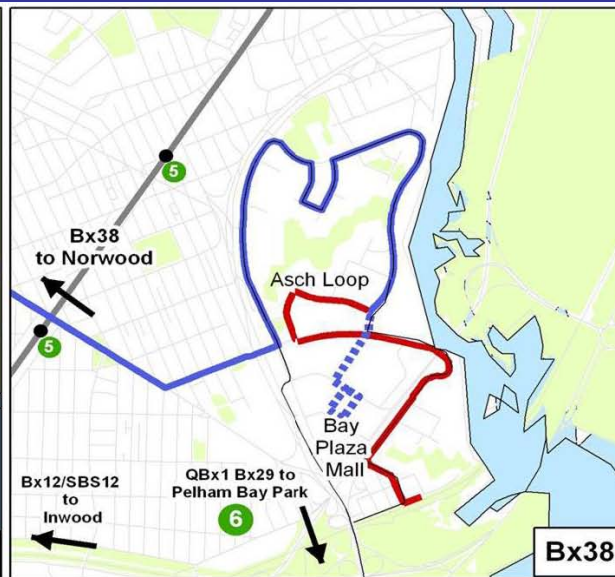
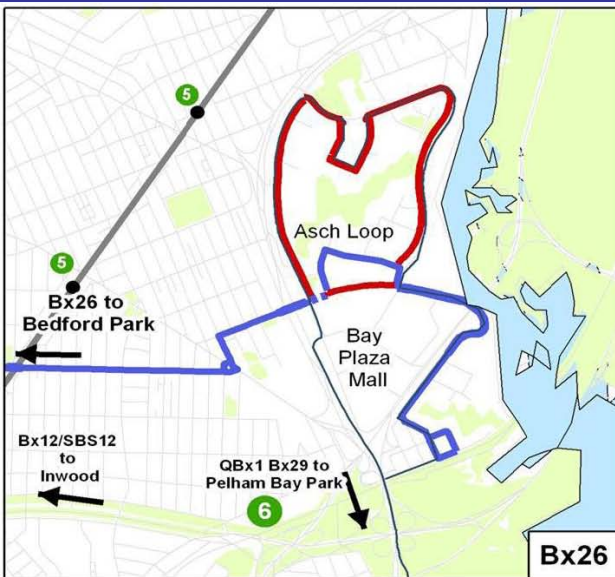
BX25: Eliminated

Bx26: 900 riders will need to transfer to complete trip

Bx28: split into Bx28/38 longer wait times by approx. 5 minutes

Bx30:* up to 600 riders will need to walk 5 minutes

*Bx30 restores Asch Loop in Jan 2012

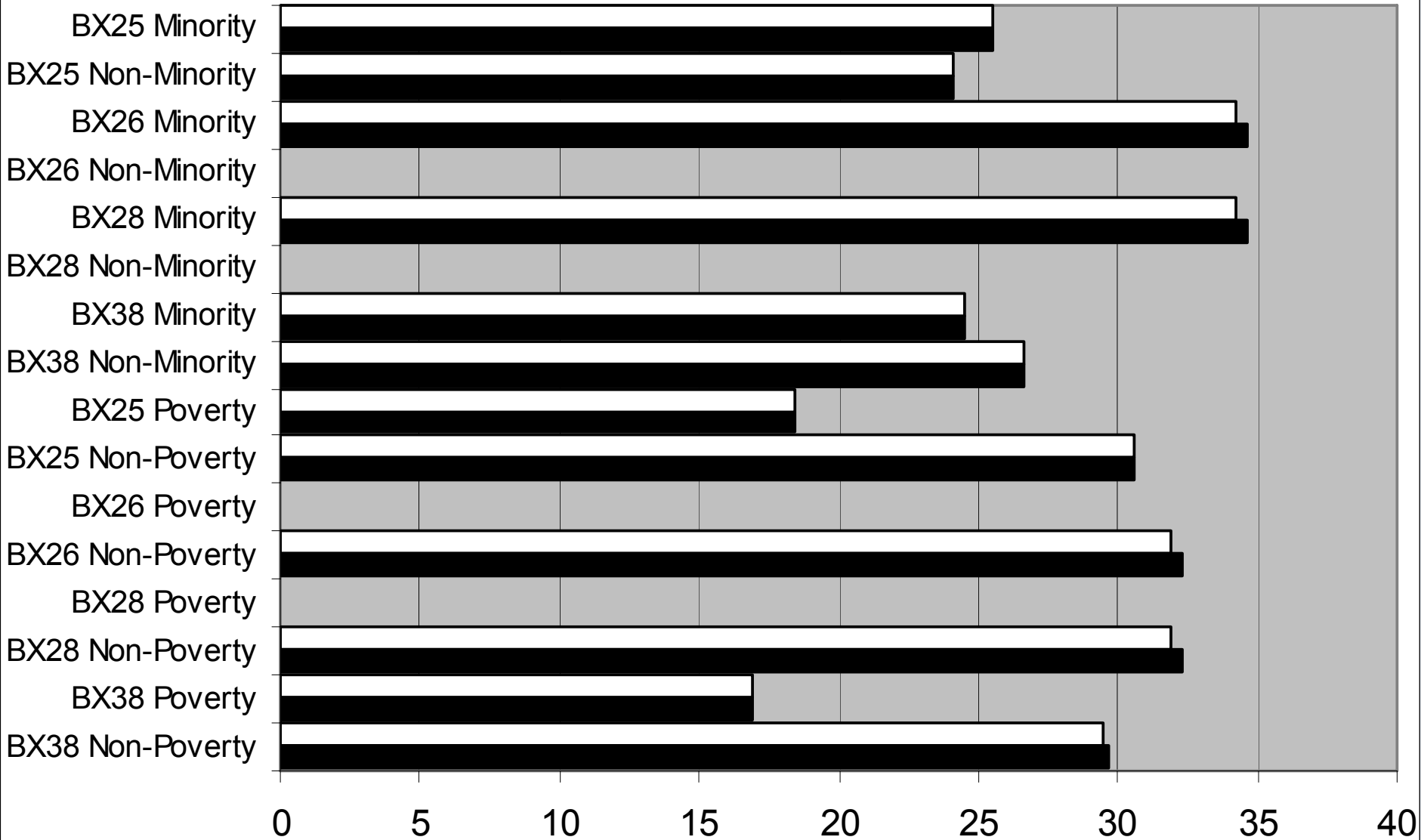


- Bus Route to be Discontinued on this Segment
- Bus Route to Remain on this Segment
- - - - Bus Route to be Expanded on this Segment
- Other Bus Service (Including QBx1 That Serves Co-Op City)

Co-op City,
The Bronx

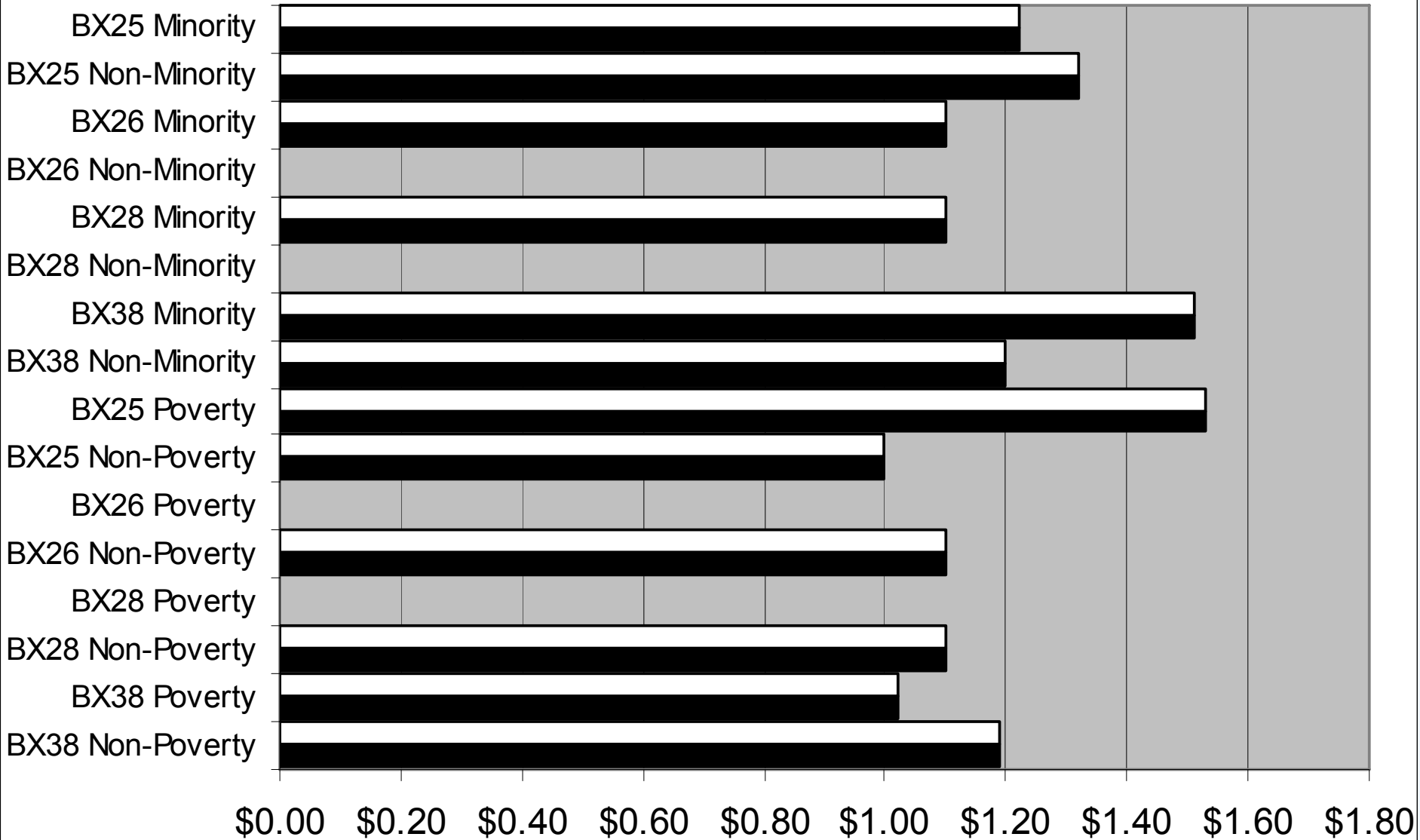
Co-op City Modification: Before & After Impact on Customers (Minutes)

□ Before
 ■ After



Co-op City Modification: Before & After Impact on Customers (\$)

□ Before
 ■ After



When to do Package Analysis?

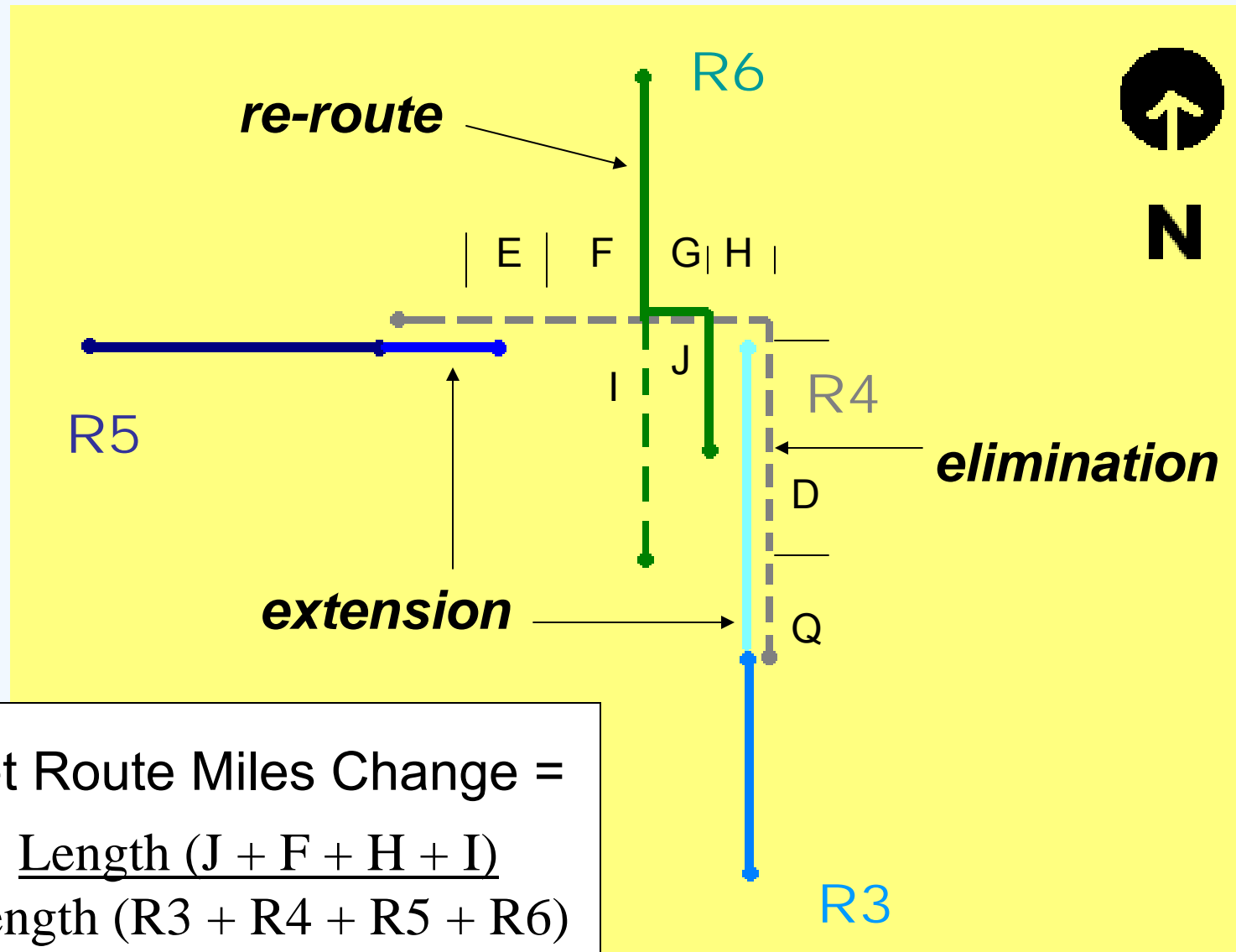
$$\frac{(\text{New Mileage} + \text{Eliminated Mileage})}{\sum (\text{Original Route Mileage})}$$

= Greater than $x\%$ * Net Route Miles Changed

*x is 25% at NYCT as per internally developed guidelines



Package of Route Changes



$$\text{Net Route Miles Change} = \frac{\text{Length (J + F + H + I)}}{\text{Length (R3 + R4 + R5 + R6)}}$$

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Strategic Look at Friday Exceptions in Weekday Schedules for Urban Transit: Improving Service, Capturing Leisure Markets, and Achieving Cost Savings by Mining AFC Data