

## NYC Transit and MTA Bus Company Title VI Analyses Queens Bus Network Redesign Proposal

In accordance with Federal Transit Administration (“FTA”) guidance documents regarding implementation of Title VI of the Civil Rights Act of 1964 (“Title VI”) and FTA’s Environmental Justice Policy<sup>1</sup>, New York City Transit (NYCT) and MTA Bus Company (MTA Bus) conducted a service change equity analysis for route transformation proposals that are determined to be “Major Service Changes”<sup>2</sup> in accordance with the NYCT and MTA Bus Major Service and Fare Change Policy.<sup>3</sup> NYCT and MTA Bus conduct a route level travel time and travel cost service equity analyses for these types of changes.

NYCT and MTA Bus are proposing to implement a Service Plan for improving trip speeds and reliability by redesigning the Queens Bus Network to better reflect changes in ridership. The Queens Bus Network has not substantially changed in decades, yet MTA customers’ needs have transformed dramatically. This necessitates an evolution of the existing bus network to meet these changes. These facts compel an updated appraisal of how Queens bus service is currently provided, with a focus on how service should be provided going forward. This proposal modifies the existing bus network to meet customers’ needs and to provide more effective service in Queens.

Because both Local and Express Bus networks, as well as the inclusion of the new “Rush” routes, were included in the Queens Bus Network Redesign plan, all will be presented for approval and implementation at this time and will be the focus of this report. “Census tract to Census tract” Origins & Destinations will be reviewed and analyzed.

NYCT and MTA Bus have conducted a detailed Title VI evaluation of the Queens Bus Network Redesign Proposal to ensure that Title VI equity concerns are being addressed. The evaluation assessed the proposed service plan to determine whether they would have adverse disparate impacts or disproportionate burdens on the minority and low-income communities affected by the proposal.

**The Title VI analysis showed that the Queens Bus Network Redesign Proposal would result in NO disparate impact or disproportionate burden on either the minority or the below-poverty populations served by these routes.**

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<sup>1</sup> As recipients of federal grants made by the United States Department of Transportation (“DOT”), the MTA affiliated and subsidiary agencies that provide subway, bus and commuter rail services are subject to the requirements of Title VI, which prohibits discrimination on grounds of race, color or national origin under a program or activity receiving Federal financial assistance. In addition, DOT’s Order on Environmental Justice requires DOT grant recipients to take certain actions to address environmental justice concerns affecting minority and low-income populations.

<sup>2</sup> FTA C 4702B.1B, Chapter 4.7.a. “Service Equity Analysis”

<sup>3</sup> NYCT and MTA’s updated Major Service and Fare Change Policy was approved by the Board in May 2013.

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### Major Service Change Analysis

NYCT and MTA Bus use the following definitions of “major” service<sup>4</sup> changes:

- Route restructuring actions resulting in at least a 25% change in overall route length.
- Service frequency changes resulting in at least a 25% change in annual revenue vehicle miles. Annual revenue vehicle miles (RVM) are a compilation of Weekday, Saturday and Sunday RVM.
- Span change actions resulting in at least one (1) hour change<sup>5</sup> in service span.

The following exceptions to the definition of “major” Service Changes apply:

- Demonstration projects or experimental service;
- Standard seasonal or holiday adjustments;
- Temporary schedule changes to enable performance of line maintenance or capital improvement work; or
- Temporary changes in response to emergency situations, service disruptions or events beyond the control of NYCT and MTA Bus.

### 1. Major Service Change Determination

This section addresses whether the proposed service change meets the definition of “major service change” for Route Change Analysis, based on the net combined percent change in the route lengths of the longest paths.

NYCT and MTA Bus have determined that the Queens Bus Network Redesign Proposal is a major service change, based on overall route redesign and changes to existing routes of greater than 25% of total route miles for routes within the proposed network. For example:

- The QM3 route being removed.
- Majority of individual routes have more than a 25% change in overall changes.
- A variant of local service is being introduced, Rush service.
  - The purpose of Rush routes is to connect outer borough neighborhoods to subway stations. These routes provide local service in neighborhoods and then skip stops along major corridors to the subway, stopping only at major transfer points and key destinations. Along these limited-stop portions, Rush routes have underlying service

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<sup>4</sup> Multiple changes implemented concurrently as a single related action will be reviewed as a single change for purposes of determining whether such change is major.

<sup>5</sup> As per the MTA NYCT Service Guideline Manual, same day “increases” in service span are not considered major changes.

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from other Local or Limited routes. Rush routes are typically more frequent in the AM and PM weekday peak period. The average distance between stops on Rush routes is between 1,000 and 1,200 feet.

For changes that are classified as “major” service changes, NYCT and MTA Bus conduct a route level travel time and travel cost analysis.

### 2. Discussion

Currently, with an average weekday ridership of 800,000, Queens is served by 113 routes, providing an expansive service coverage area. Together, NYCT and MTA Bus provide local, limited, Select Bus Service (SBS), and Express Bus coverage that connects neighborhoods within Queens and to the neighboring boroughs of the Bronx, Brooklyn and Manhattan.

Queens is one of the most ethnically diverse urban areas in the world, as residents often closely identify with their neighborhood rather than with the borough or city. The borough is a patchwork of dozens of unique neighborhoods, each with their own distinct identity. As congestion has worsened in Queens, bus speeds have slowed. Queens has experienced decreased bus speeds from an average of 9.3mph in 2015 to an average of 9.0mph in 2024.

An Existing Conditions Report was completed in August 2019. This report looked at the borough, its people, its travel needs, and what can be done to improve bus travel to meet those needs. It included an in-depth examination of the following key data elements: population and employment demographics, travel patterns, ridership, slow bus speeds, service reliability metrics, productivity and financial efficiency metrics. The Report, along with valuable information gathered from our riders through public outreach, was used to inform the decision-making and overall process that created the subsequent plan iterations.

The Draft Plan was released in December 2019 and was followed by a round of outreach throughout winter 2020. Public feedback was solicited via in-person open houses and on-street pop-up events, the MTA website, Community Board presentations, presentations to elected officials and other key stakeholders, and via the MTA’s social media platforms. The project was paused in March 2020 due to the COVID-19 Pandemic. The project remained on pause for approximately 18 months.

Following the project’s restart, the planning team evaluated over 11,000 comments from the prior Draft Plan outreach. From these comments, the team decided the best way forward was to withdraw the Draft Plan and create a new plan based off the wealth of feedback received. The Draft Plan was officially withdrawn in December 2021, and the New Draft Plan was released in March 2022.

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The New Draft Plan release was followed by another robust round of outreach, which included soliciting feedback at outdoor open houses, pop-up events, virtual public workshops, the MTA website, presentations to elected officials and other key stakeholders, and via the MTA's social media platforms.

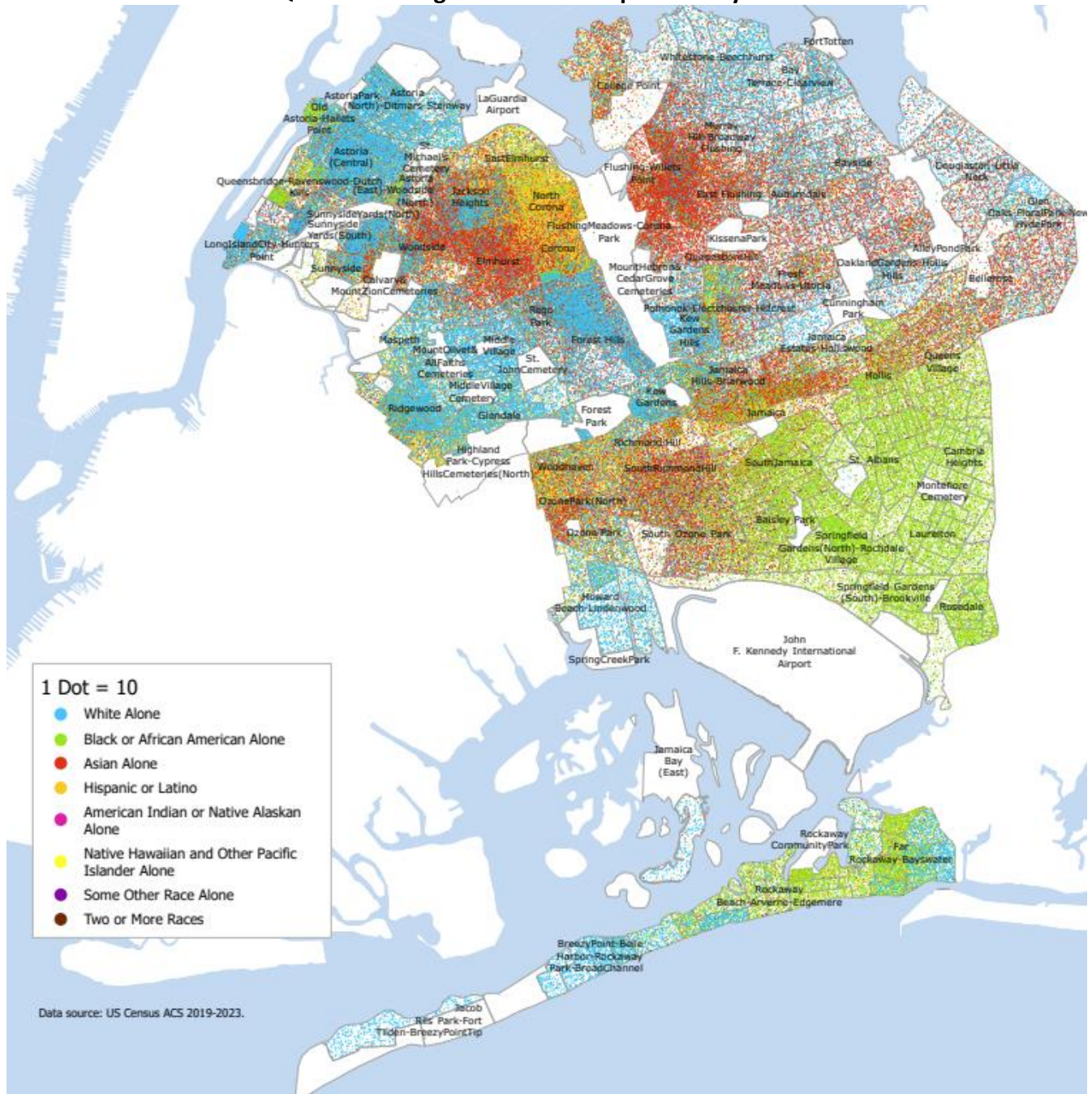
The nearly 4,000 comments received on the New Draft Plan were used to inform revisions to the proposals developed for the Proposed Final Plan, released in December 2023. The Proposed Final Plan had yet another robust round of public outreach, including at least one presentation to each Community Board in Queens.

After examining the existing conditions of the Queens Bus Network, MTA planners concluded that the most realistic way to make substantial improvements would be to undertake a comprehensive reorganization of the network, focusing on rider origins and destinations (O-D's) rather than on specific routes. To perform a Title VI analysis that assessed service equity for all riders in the proposed service change area, a network model, which allowed an equally comprehensive analysis of all the planned O-D travel time changes by demographic ridership, would need to be developed. The model, based on existing and proposed changes to route schedules, and which assesses the impacts on travel time and cost for minority and low-income populations, is further detailed in section 3: "Route Change Analysis Methodology."

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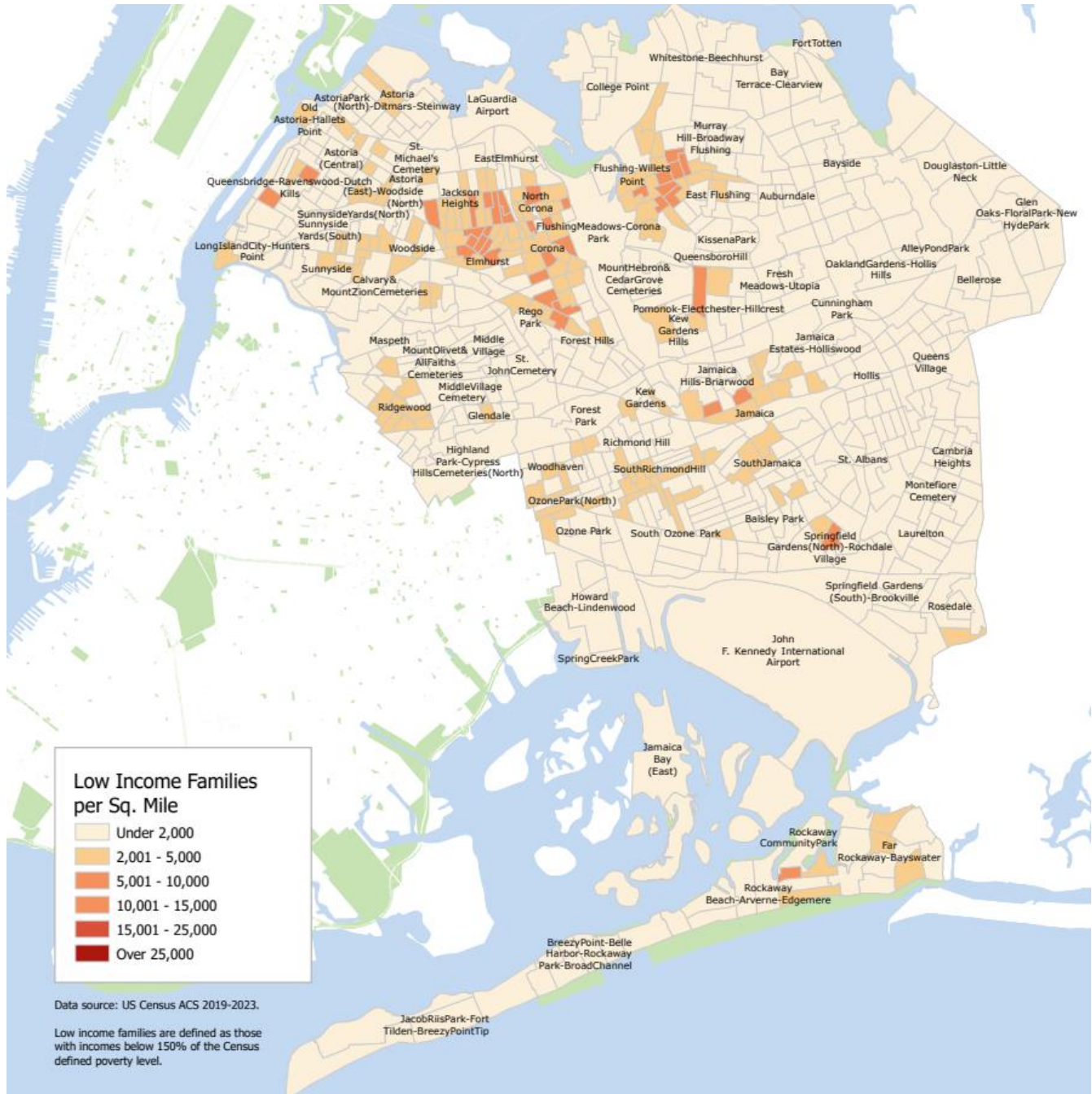
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**Figure 1**  
**Queens Existing Conditions – Population by Race**



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**Figure 2**  
**Queens Existing Conditions – Density of Low-Income Families**



Source: (2020 census, 2023 ACS data)<sup>6</sup>

<sup>6</sup> (2020 U.S. Census (minority) and U.S. Census Bureau, 2019-2023 American Community Survey (income) data)

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### Market Analysis

- **Population and employment density are concentrated along subway lines.** The Queens bus network covers much of the rest of the borough, but travel times are often long since routes meander through various neighborhoods before reaching the subway.
- **Only 21 of 81 Queens' subway stations are accessible,** according to Americans with Disabilities Act (ADA) standards. The network redesign is particularly important for those customers whose transit options are currently more limited.
- **About 52 percent of Queens residents commute by transit.** According to Census ACS data, about 39 percent of Queens commuters identified rail modes as their primary means of transportation, while 11 percent identified bus as their primary means. About 38 percent of commuters drive to work.

### Service Analysis

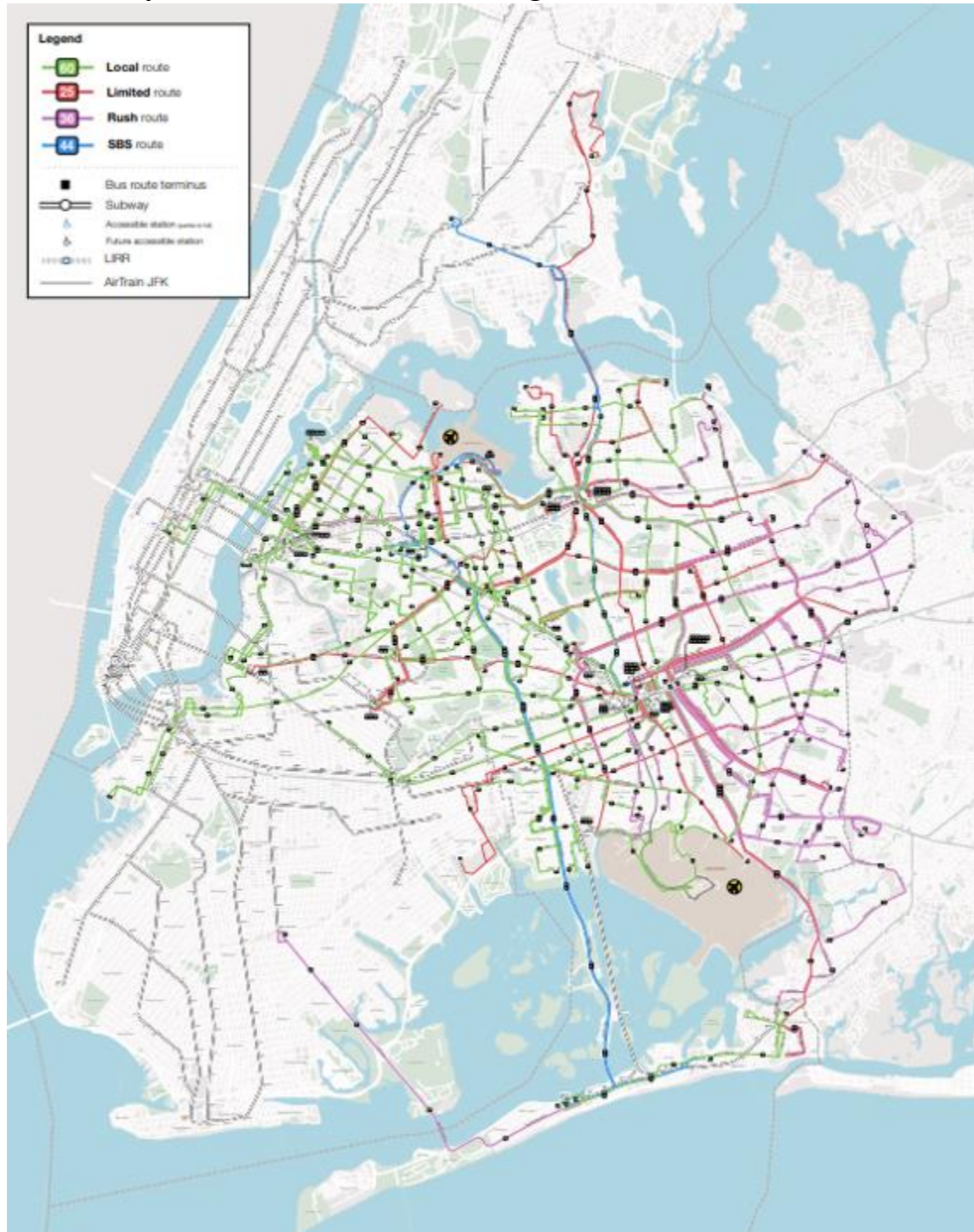
- **Most Queens residents have access to some level of bus service.** Approximately 94.27 percent of Queens residents live within a quarter mile (or five-minute) walk of a local, limited, SBS, or express bus stop. There are only a few gaps, which are mostly parks, industrial uses, and cemeteries. This analysis also shows access at different times of the day, indicating where there may be opportunities for service improvements.
  - **The most productive routes are simple and direct.** They also tend to traverse through high-activity areas and make connections with subway lines and other key bus routes.
  - **Most bus routes attempt to multi-task and serve several different purposes simultaneously.** Multi-tasking routes are more confusing and less efficient than complementary services.
  - **The existing Queens bus network has very close stop spacing.** Closely spaced stops lead to frequent stopping and increased travel times.
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## Service Plan

Figure 3

Proposed Queens Network Changes – Local Bus Network





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Figure 4

## Proposed Queens Network Changes – Express Bus Network



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Source: (MTA, 2023)<sup>7</sup>

The proposed bus service plan will implement changes to 113 existing routes, with the addition of Rush bus service. These changes involve the following three main areas: route changes, bus stop balancing and schedule adjustments.

### Provide New Service - Straighten and Simplify Routing

Proposed recommendations at the route level will establish frequent service along key corridors, while the MTA also coordinates with NYCDOT to implement bus priority measures on those same key corridors. Proposed route alignment changes will make service simpler and more direct and minimize the number of circuitous or meandering segments of. Of the existing 113 routes, among local routes only the Q44, Q53 and Q70 did not change within the redesign.

For express service, there are only four (4) major service changes:

- One (1) new express route, the QM65 will serve southeast Queens, from Laurelton and Rochdale to downtown Manhattan.
- One (1) express route, the QM3 will be discontinued as it has the lowest ridership in the network
- One (1) express route, the QM11 Queens-bound travel path was revised in response to operational challenges and public feedback.
- Three (3) express routes, the QM63/QM64/QM68 (formerly X63/X64/X68), have revised Manhattan-bound routings, traveling northbound on Madison Av instead of looping via 3 and 5 Avs

The remaining express routes are either unchanged or have only minor changes to routing and/or frequency.

### Bus Stop Balancing

Close bus stop spacing directly contributes to slow buses and longer travel times for customers. When a bus stops more frequently along a route, exiting, stopping, and re-entering the flow of traffic, it loses speed and increases customers' travel time. By removing closely spaced and under-utilized stops throughout Queens, buses can keep moving with the flow of traffic and get customers where they need to go faster. In general, an average of twenty (20) seconds will be shaved off a customer's trip for every stop removed.

The Queens Redesign proposes bus stop removals to improve bus stop spacing, balancing the need to improve travel times with the need to serve our riders with mobility limitations. Bus stop balancing changes would allow us to better match peer systems and improve average local

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<sup>7</sup> (MTA, 2023), *Queens Bus Network Redesign: Draft Plan*, New York:

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route stop spacing from approximately every 950 feet to every 1300 feet. In consultation with the community the Redesign will maintain stops:

- Providing connections to subway stations and other bus routes with heavy ridership, specifically stops used by populations for whom a removal would present a significant burden (e.g. retirement communities, hospitals, and schools). Some routes saw fewer stop removals due to a couple of different factors, including geography and community amenities.

### Increased Frequency

The Redesign will provide improved frequency for sixteen (16) local routes and one (1) express route.

### Improved Connectivity

Population and employment densities in Queens are concentrated largely along subway lines, however, many residences, community facilities, employment centers, and other key destinations are only accessible by bus. Relying on input from customers, it was learned that many riders rely on multiple bus routes, subways lines, or commuter rail for their commutes. Therefore, improving connectivity at transfer locations is necessary to ensure customers have a quick and easy transfer between buses and other public transit modes.

The redesign proposal will provide crucial bus connections for intra-borough travel, with increased ease of connections at key locations, and improved route alignment changes which will bring new access for customers. The following redesign improvements are based by quadrant.

### Improvements by Quadrant

#### Northwest Queens

- B62: Route extended from 21 Street to Astoria Houses, providing new one-seat rides to the Brooklyn waterfront and Downtown Brooklyn
- Q14: New route introduces new travel options and provides a new connection between East Elmhurst/Corona and Ridgewood
- Q23: Route streamlined to avoid congested areas and new overnight service
- Q33: Route has increased frequency and now provides a direct connection between LaGuardia Airport Terminal A and the Jackson Heights-Roosevelt Av subway station

#### Northeast Queens

- Q31: Route streamlined, and service extended along Bell Blvd, expanding one-seat rides to Jamaica and providing new connections to the Bay Terrace Shopping Center
  - Q61: New route traveling along Willets Point Boulevard providing an important rail connection in Downtown Flushing
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- Q74: New route providing a direct connection between Queensborough Community College and the Forest Hills-71 Av subway station
- Q76: New connection to the center of College Point as well as new weekend service on 14th Avenue

### Southeast Queens

- Merrick Boulevard corridor (Q5/Q84/Q85/Q86/Q87/Q89): New Rush routes providing faster service and increased frequency along the Merrick Boulevard corridor, connecting communities far from the rail network
- Q22: Route extended east to provide a new direct connection to the Far Rockaway LIRR station and limited trips to Bayswater
- Q51: New route traveling east-west along Linden Boulevard, connecting southeast Queens communities to the A train at the Rockaway Boulevard station
- Q77: Route extended further south, providing connections to routes serving JFK Airport (Q3) and Far Rockaway (Q113/Q114)

### Southwest Queens

- Lefferts Boulevard corridor (Q10/Q80): Communities further from the rail network will have faster access on the Q10 Rush, while riders along the length of Lefferts Boulevard will have more frequent and new overnight service on the new Q80
- Q7: Route extended west to serve the length of Rockaway Boulevard to Jamaica Avenue, providing a direct connection to the J/Z trains
- Q11: Route will have increased frequency to Lindenwood and to Old Howard Beach/Hamilton Beach and extended overnight service to 157 Avenue/Cross Bay Boulevard
- Q98: New route is alternative to the Q58, providing a more direct, limited-stop connection between Flushing and Ridgewood via Horace Harding Expressway and Queens Boulevard

### More Bus Priority

NYCDOT analyzed major Queens bus corridors to identify where bus lanes and other treatments would speed up buses and allow the MTA to operate more frequent service. NYCDOT selected 24 of the highest-ranking corridors and has begun studying potential bus priority projects to accompany the network redesign, with work beginning in 2020. The analysis ranked potential bus-priority corridors using the following criteria:

- Demand for bus service
  - Bus performance
  - Feasibility of implementing new street treatments, including traffic levels and street widths
  - The corridor's role in the transit network
  - Neighborhood demographics and equity metrics
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### 3. Route Change Analysis Methodology

As part of its Title VI analysis, NYCT and MTA Bus conducted a Census tract level travel time and travel cost analysis. A bus network model was used to determine transit travel times under base conditions, as well as with the proposed service plan. One month of AFC and OMNY data from November 2024 was used to create an Origin-Destination (O-D) “trip table” showing the number of customers travelling between any pair of Queens census tracts, or between Queens census tracts and locations outside of Queens. The model incorporates changes in wait time and in-vehicle time based on base and proposed GTFS schedule data. This enables travel time analysis for all riders in the network, whether the changes are due to changes in routing, stop spacing or frequency, and allows the Title VI assessment to analyze the impact on all populations.

To determine the minority and income classification of Queens riders, at the bus stop level, U.S. Census data was used. All U.S. Census<sup>8</sup> tracts along the Queens Local and Express bus routes involved in the network redesign were reviewed.

For all bus routes, the census tracts containing bus stops for riders travelling in the AM Peak hour (8am-9am) in the Queens Bus Network Redesign were used for the analysis. The AM Peak hour was used since it is more likely to reflect maximum travel patterns from a rider’s home stop. The Table 1, lists a snapshot some of the Local bus routes that are included in the analysis

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<sup>8</sup> 2020 U.S. Census (minority) and U.S. Census Bureau, 2019-2023 American Community Survey (income) data

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**Table 1**  
**Queens Network Redesign - Bus Routes (Sample)**

### Route Improvements Summary

Route	Routing							Schedule		Bus Stop Spacing	NYC DOT Priority Corridor
	More Direct	Simplify Variants	Combine	Shorten	Split	Extend	New Connections	More Frequent	Extend Span		
B57							•			•	
B62						•	•			•	
Q1						•	•	•		•	•
Q2							•			•	•
Q3							•	•		•	•
Q4							•			•	•
Q5							•			•	
Q6		•					•			•	•
Q7	•					•	•	•	•	•	
Q8								•		•	•
Q9							•	•		•	•
Q10		•					•			•	
Q11		•	•				•	•		•	•
Q12	•						•			•	•
Q13							•			•	•
<b>Q14</b>							•			•	•
Q15	•		•				•			•	
Q16	•	•					•		•	•	•
Q17										•	•
Q18							•			•	
Q19							•			•	•
Q20		•	•				•			•	•
Q22				•		•	•			•	
Q23	•						•		•	•	•
Q24							•			•	
Q25		•	•				•	•		•	•
Q26	•					•	•	•	•	•	
Q27	•	•					•			•	•

Source: (MTA)<sup>9</sup>

Travel time data was aggregated at the Census tract level for both minority and low-income ridership, both before and after proposed route changes. Changes in travel time and travel cost are then compared between minority and income groups at the Census Tract level. All costs before and after the Redesign are equivalent, since in-route bus vehicle transfers are free of cost and no fare increases are associated with this change.

<sup>9</sup> (MTA, 2024) *Final Plan, Queens Bus Network Redesign*. New York:

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**Table 2**  
**Changes in Average Am Peak Travel Time with Minority  
and Poverty Status by Census Tract <sup>10</sup> Populations (Sample)**

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes )	Passengers
Census Tract 1.03; Queens County; New York	minority	Above poverty	0.0	2
Census Tract 1.04; Queens County; New York	minority	Above poverty	-0.1	33
Census Tract 1008.03; Queens County; New York	minority	At or Below poverty	-0.6	199
Census Tract 100; Queens County; New York	minority	Above poverty	-0.4	172
Census Tract 1010.03; Queens County; New York	non-minority	Above poverty	-1.4	77
Census Tract 1010.04; Queens County; New York	non-minority	At or Below poverty	-1.2	106
Census Tract 1017; Queens County; New York	non-minority	Above poverty	-2.3	76
Census Tract 101; Queens County; New York	non-minority	Above poverty	-0.2	145
Census Tract 1029; Queens County; New York	non-minority	Above poverty	-3.5	45
Census Tract 102; Queens County; New York	minority	Above poverty	-1.1	28
Census Tract 1032.01; Queens County; New York	minority	At or Below poverty	-2.7	62
Census Tract 1032.02; Queens County; New York	non-minority	At or Below poverty	-1.8	84
Census Tract 1033; Queens County; New York	non-minority	Above poverty	-1.5	138
Census Tract 1039; Queens County; New York	non-minority	Above poverty	-0.4	434
Census Tract 103; Queens County; New York	non-minority	At or Below poverty	0.0	122
Census Tract 1047; Queens County; New York	minority	At or Below poverty	-0.6	119
Census Tract 104; Queens County; New York	minority	Above poverty	-1.9	35
Census Tract 1059; Queens County; New York	non-minority	Above poverty	-0.5	46
Census Tract 106; Queens County; New York	minority	At or Below poverty	-0.6	502
Census Tract 1072.01; Queens County; New York	non-minority	Above poverty	-0.3	25
Census Tract 1085; Queens County; New York	non-minority	Above poverty	-1.2	43
Census Tract 108; Queens County; New York	minority	At or Below poverty	-0.1	4
Census Tract 1093; Queens County; New York	non-minority	Above poverty	-1.6	31
Census Tract 1097; Queens County; New York	non-minority	Above poverty	-1.0	19
Census Tract 1099; Queens County; New York	non-minority	Above poverty	-1.2	67
Census Tract 10; Queens County; New York	minority	Above poverty	-1.0	178
Census Tract 110; Queens County; New York	minority	At or Below poverty	-0.3	44
Census Tract 111; Queens County; New York	non-minority	Above poverty	0.0	21
Census Tract 1123; Queens County; New York	non-minority	Above poverty	-2.3	72
Census Tract 112; Queens County; New York	minority	At or Below poverty	-0.7	82
Census Tract 1133; Queens County; New York	non-minority	Above poverty	-0.7	1

To perform the final comparative route level analysis, NYCT and MTA Bus Company employed a statistical test (t-test), which measures the differences in a variable between two independent groups, to assess whether the transit service provided to two separate populations is the same, or, in other words, is equitable.

<sup>10</sup> 2020 U.S. Census (minority) and U.S. Census Bureau, 2019-2023 American Community Survey (income) data

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Any adverse impact will result in a consideration of an alteration to the service change and/or implementation of mitigation measures, or, where neither alteration nor mitigation is possible, an explanation for the adverse impact and/or justification for the service change.

### 4. Analysis

#### Demographic Analysis

**Table 3**

**City Wide Minority Demographics<sup>11</sup>**

Borough	Total Population	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino	Total Minority Population	Percent Racial Minority
Bronx	1,472,654	130,796	419,393	3,087	67,766	457	16,322	28,370	806,463	1,341,858	91.1%
Brooklyn	2,736,074	968,427	729,696	3,964	370,776	718	32,897	113,170	516,426	1,767,647	64.6%
Manhattan	1,694,251	793,294	199,592	1,895	219,624	882	13,335	62,989	402,640	900,957	53.2%
Queens	2,405,464	549,358	381,375	9,576	656,583	1,110	55,489	84,112	667,861	1,856,106	77.2%
Staten Island	495,747	277,981	46,835	624	58,753	135	3,141	11,318	96,960	217,766	43.9%
Total	8,804,190	2,719,856	1,776,891	19,146	1,373,502	3,302	121,184	299,959	2,490,350	6,084,334	69.1%

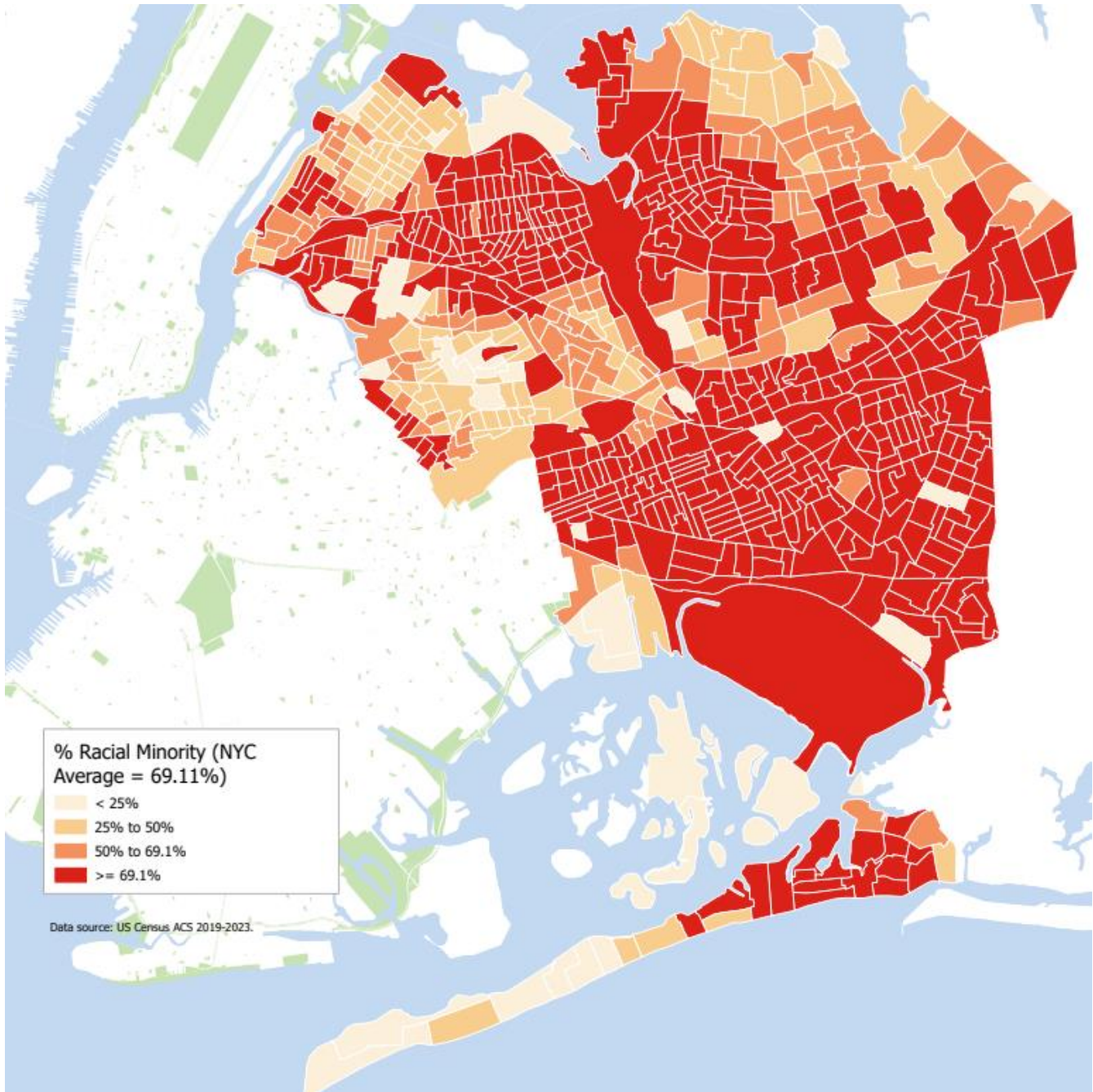
<sup>11</sup> 2020 U.S. Census Data



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Figure 5

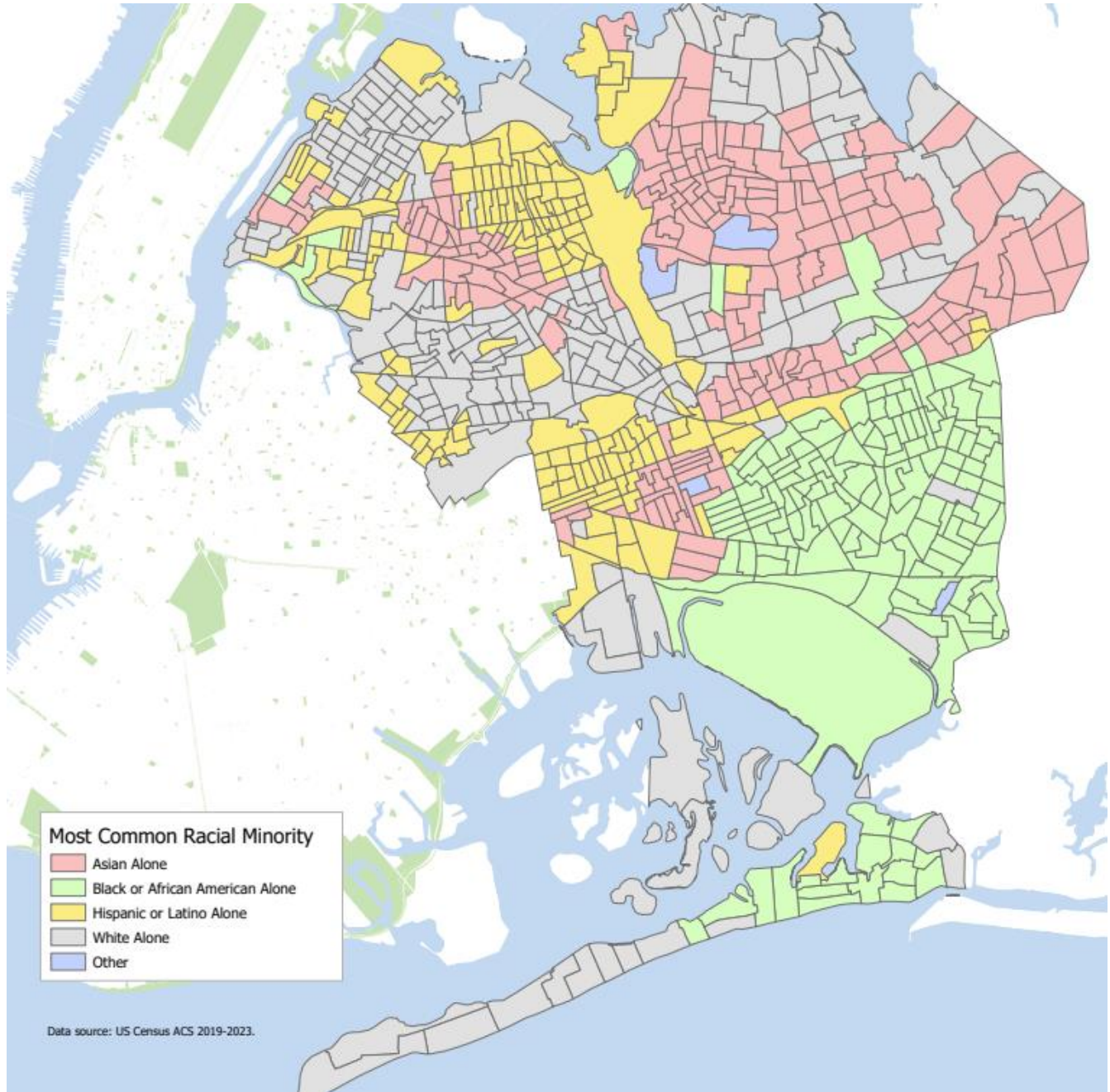
Queens Demographics - % Minority by Census Tract



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Figure 6

Queens Demographics – Most Common Minority Group



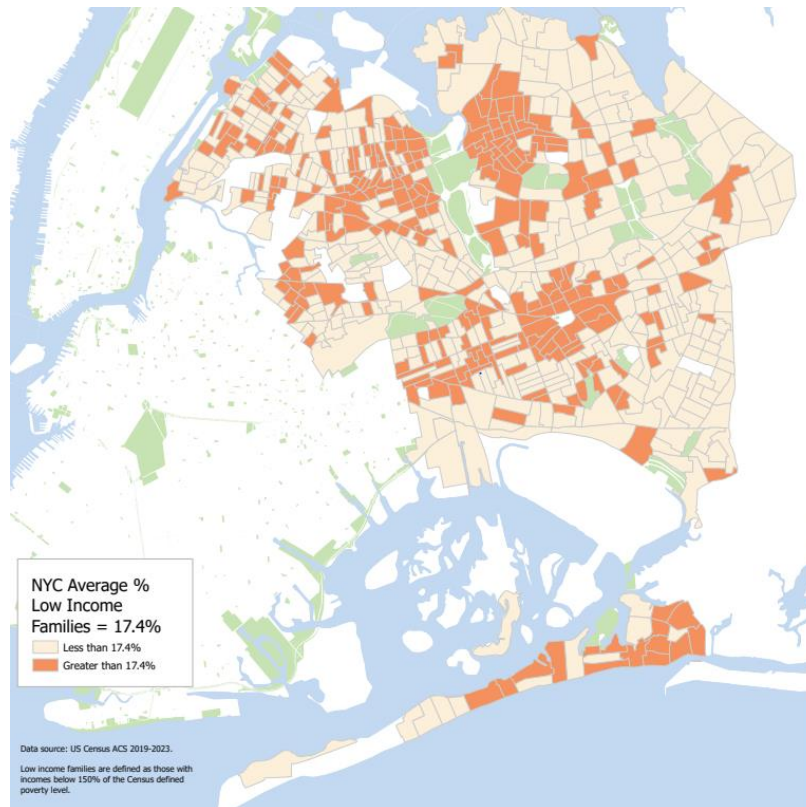
As can be seen, Queens is predominantly Minority (77 percent), which is a significantly higher percentage than the NYC service area (69 percent).

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**Table 4**  
**City Wide Income Demographics<sup>12</sup>**

Borough	Total Families	Low Income Families	Percent Low Income Families
Bronx	331,046.00	110,837.00	33.48%
Brooklyn	599,589.00	141,826.00	23.65%
Manhattan	322,122.00	57,129.00	17.74%
Queens	552,128.00	94,656.00	17.14%
Staten Island	123,980.00	17,168.00	13.85%
<b>Total</b>	<b>1,928,865.00</b>	<b>421,616.00</b>	<b>21.86%</b>

**Figure 7**  
**Queens Service Area Income Demographics**



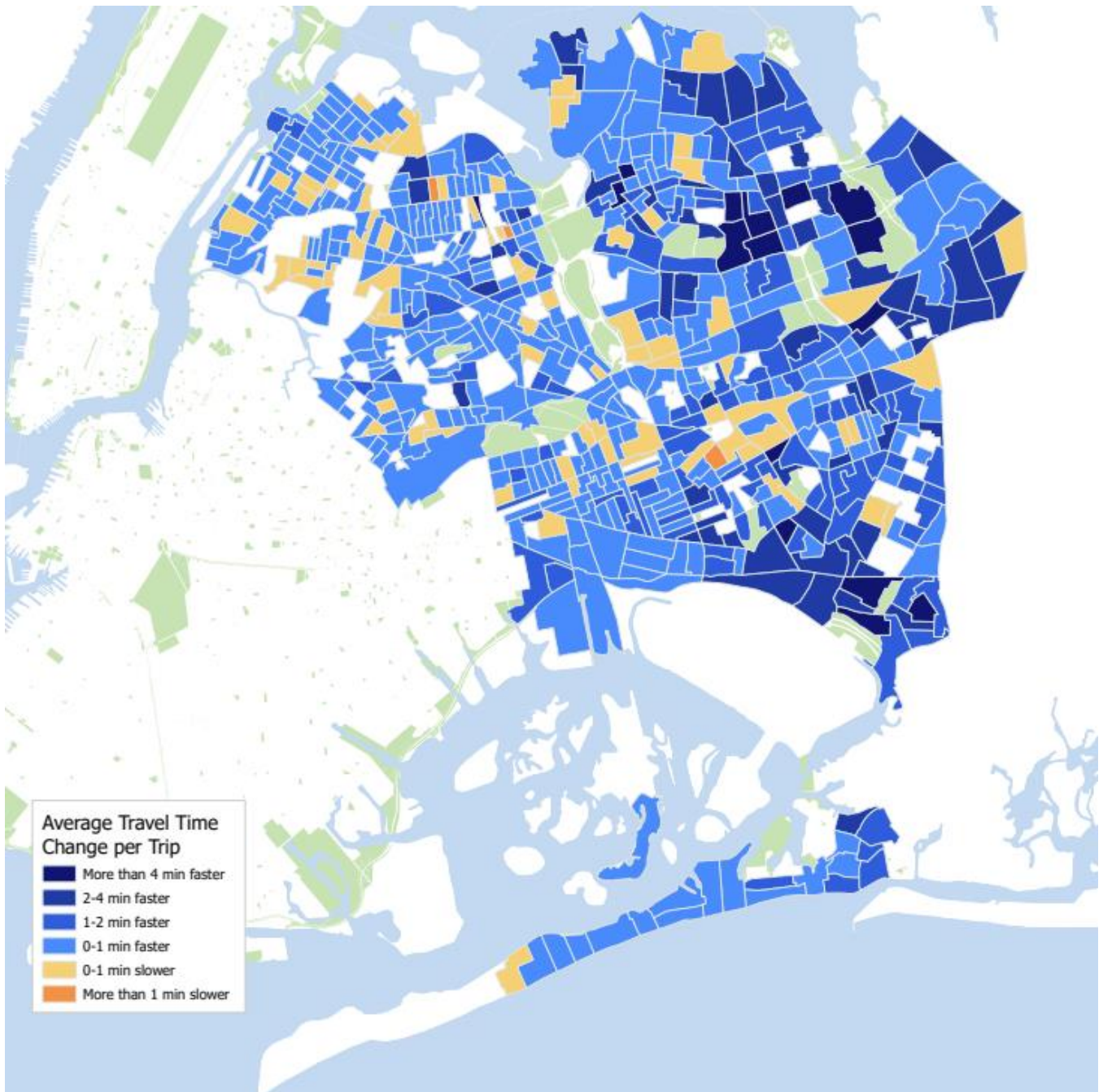
<sup>12</sup> U.S. Census Bureau, 2019-2023 American Community Survey, S1701 - Poverty Status in the past 12 Months

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Queens also has a lower percentage of low-income residents (17 percent) than the NYC service area (21.8 percent), with the highest concentrations coinciding with the higher minority areas.

Fig 8

Average Travel Time Savings by Origin Census Tract

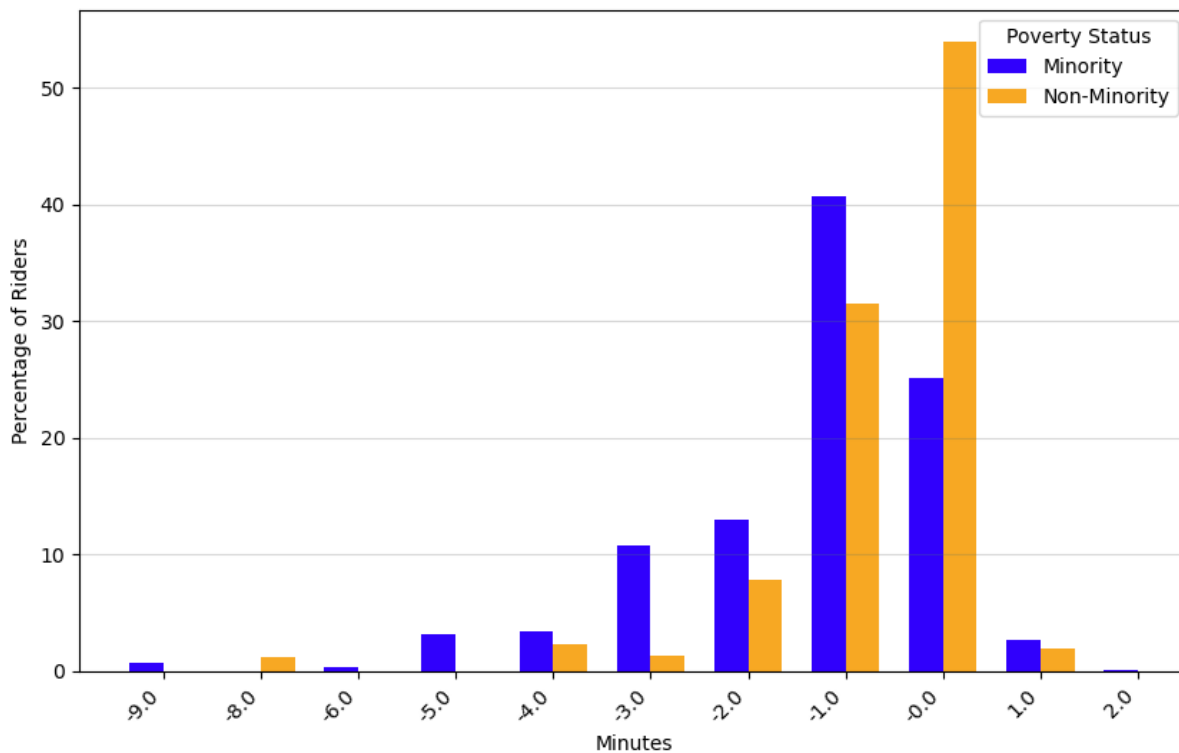


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### Impact Analysis

Fig 9

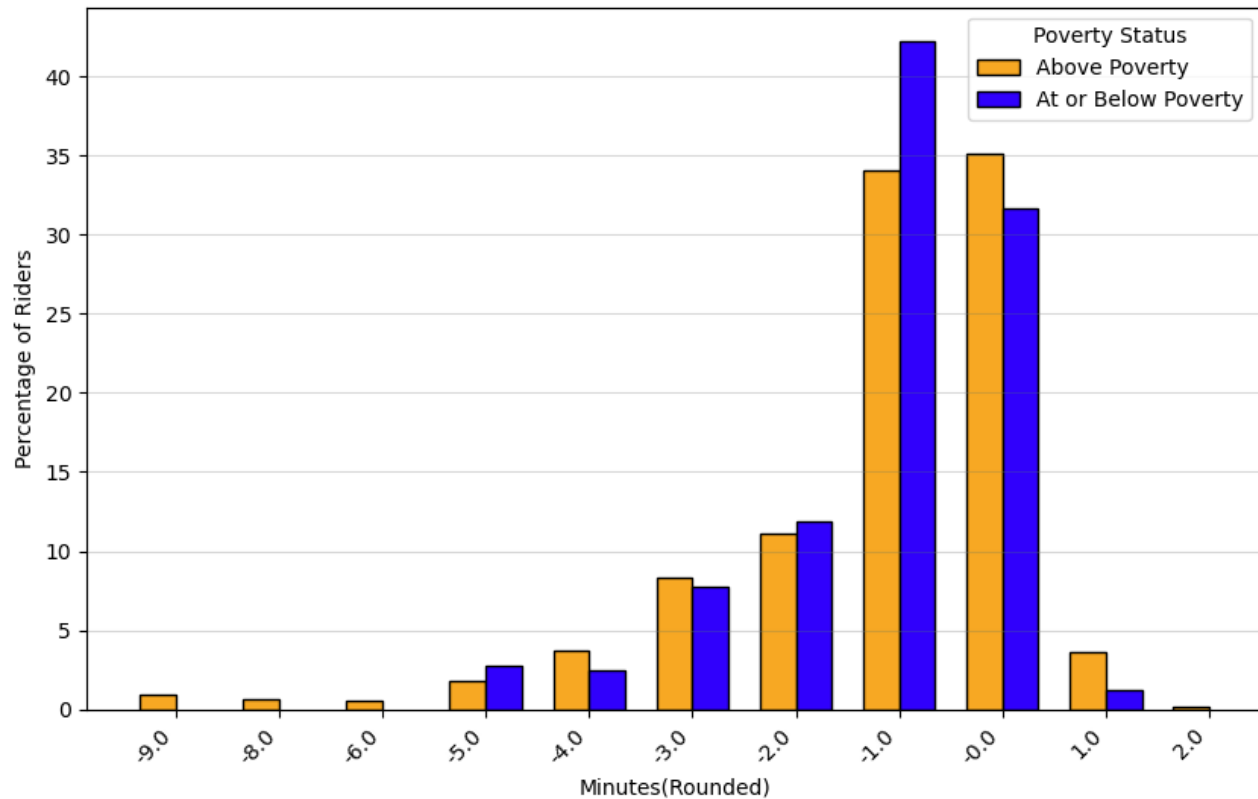
**Distribution of Travel Time Impacts by Minority Status**



As can be seen in the above chart (Fig 9), the distributions of travel time changes favors Minorities. While majority of the changes are within the zero to one minute range, it can be seen that the higher time saving favors minorities. Average travel time has decreased slightly for both groups, but the protected class is faring better.

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Fig 10  
Distribution of Travel Time Impacts by Poverty Status



When viewing the chart above (Fig 10), the distribution of travel time is slightly favors for those Above poverty. While majority of the changes are within the zero to one minute range, with some results in the extremes. Average travel time has decreased slightly for both groups favoring those above poverty.

Note that the changes in travel time include changes to schedules, frequency adjustments, and in certain cases, additions or decreases to scheduled running times in the proposed phase, to better conform those schedules to existing service patterns. It also accounts for changes in walking time for bus stop respacing, and changes in transfer times.

## NYC Transit and MTA Bus Company Title VI Analyses Queens Bus Network Redesign Proposal

It is also important to note that one of the goals of the Redesign is the simplification of routes, and on-street improvements, such as priority lanes and TSP, which will improve reliability and on time performance. Potential reliability improvements have not been accounted for in this analysis.

### STATISTICAL ANALYSIS

NYCT and MTA Bus used the travel time and cost of all the riders to assess travel time and travel cost changes in the service area. Travel times for OD pairs were aggregated at the origin Census tract level. There were no fare changes or travel cost changes associated with this proposal, therefore no cost analysis was required. The following tables (Tables 6 & 7) show the summary results of the analysis, which is detailed in the attached documents following the results section.

**Table 5**

#### Proposed Queens Bus Network Redesign Impact Analysis – Minority

Routes	Ridership Selected	Number of Routes affected		Trip Time Change (Minutes)		Trip Cost Savings		Result
		NM	M	NM	M	NM	M	
All affected Local Routes in Queens	All Trips originating in Queens	113	113	-0.95	-1.53	No Change	No Change	No Disparate Impact

**M** = Minority

**NM** = Non-Minority

### Minority Results

Following the implementation of the proposed service options, both Minority (M) and Non-Minority (NM) riders will have improved overall average travel times (both groups experience a decrease in travel times). There is no change in travel cost.

Using a two-tailed test of hypothesis with a 5% error (95% confidence), the resulting t-statistic for the Minority and Non-Minority comparison = -4.35. The t-critical values are  $\pm 1.96$ . Since the statistic is -4.35 which is less than -1.96, it is concluded that there is a difference in the travel time changes experienced by the Minority and the Non-Minority riders in the proposed service area.

## NYC Transit and MTA Bus Company Title VI Analyses Queens Bus Network Redesign Proposal

However, this is only a statistical inequity. As both minority and non-minority riders experience improved travel time, there is no inequity.

**Table 6**  
**Proposed Queens Bus Network Redesign Impact Analysis – Income**

Routes	Ridership Selected	Number of Routes affected		Trip Time Change (Minutes)		Trip Cost Savings		Result
		AP	BP	AP	BP	AP	BP	
All affected Local Routes in Queens	All Trips originating in Queens	113	113	-1.52	-1.16	No Change	No Change	No Disparate Impact

**BP** = At or Below Poverty Census tracts  
**AP** = Above Poverty Census tracts

### Income Results

Following the implementation of the proposed service options, both At or Below Poverty (BP) and Above Poverty (AP) riders will have improved overall average travel times (both groups experience a decrease in travel times). There is no change in travel cost.

Using a two-tailed test of hypothesis with a 5% error (95% confidence), the resulting t-statistic for the Below or at Poverty and Above Poverty comparison = 1.52. The t-critical values are  $\pm 1.96$ . Since  $1.52 > -1.96$  and  $< +1.96$ , it is concluded that there is no significant difference in the travel time change between At or Below Poverty and Above Poverty riders in the proposed service area.



## NYC Transit and MTA Bus Company Title VI Analyses Queens Bus Network Redesign Proposal

### Results

The results of the statistical analysis showed that there would be no disparate impact or disproportionate burden found for the Queens Bus Network Redesign Proposal, for both the minority and below-poverty populations served by these routes. There were no cost or fare changes associated with this proposal.

In fact, the proposal will provide enhanced network capability and more reliable service options for all residents. The redesigned bus routes, paired with bus stop balancing, are expected to address many factors that contribute to slow speeds and unreliability by concentrating service, when possible, to streets best suited for bus service, where bus priority measures can be enhanced and expanded, reducing the average length of routes, reducing the number of turns, and increasing the average spacing between bus stops. The proposal balances passenger convenience, resource constraints, and the need to provide rush hour and off-peak service and will provide the fastest overall trip for the majority of riders in the service area.

The Queens Bus Network Redesign Proposal was a multidisciplinary process that involved intra and inter-agency cooperation, input and support from customers, community stakeholders and elected officials, as well as a concerted public participation and community outreach program covering all stages of the planning process<sup>13</sup>, involving: in-person surveys, public workshops, public open houses, on-street pop-ups, in-station open houses, a digital open house, presentations to community boards and elected officials, and a public hearing.

Public information about the Queens Bus Network Redesign, including the Existing Conditions report, New Draft Plan, Proposed Final Plan, Proposed Final Plan Addendum, public events, project timeline, frequently asked questions, and overall comment section, was presented on the MTA website<sup>14</sup> throughout the entire process.

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<sup>13</sup> Public Participation and Community Outreach: <https://new.mta.info/project/queens-bus-network-redesign/archived-materials>

<sup>14</sup> Queens Redesign: <https://new.mta.info/project/queens-bus-network-redesign>

## NYC Transit and MTA Bus Company Title VI Analyses Queens Bus Network Redesign Proposal

### References

MTA. (2024). *Existing Conditions Report for Queens Bus Network*. New York:  
[Queens Bus Network Redesign: Reports, Past Events,](#)

MTA. (2024). *Queens Bus Network Redesign: Draft Plan*. New York:  
[Queens Bus Network Redesign: Reports, Past Events,](#)

MTA. (2024). *FINAL PLAN, Queens Bus Network Redesign*. New York:  
[Queens Bus Network Redesign: Reports, Past Events,](#)

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## **NYC Transit and MTA Bus Company Title VI Analyses Queens Bus Network Redesign Proposal**

Route Network Change Analysis (Motor Bus)

- ATTACHMENT
  - ADDENDUM
-

**NYC Transit and MTA Bus Company Title VI Analyses  
Queens Bus Network Redesign Proposal**

ATTACHMENT 1

Route Network Change Analysis (Motor Bus)

Mode: Motor Bus

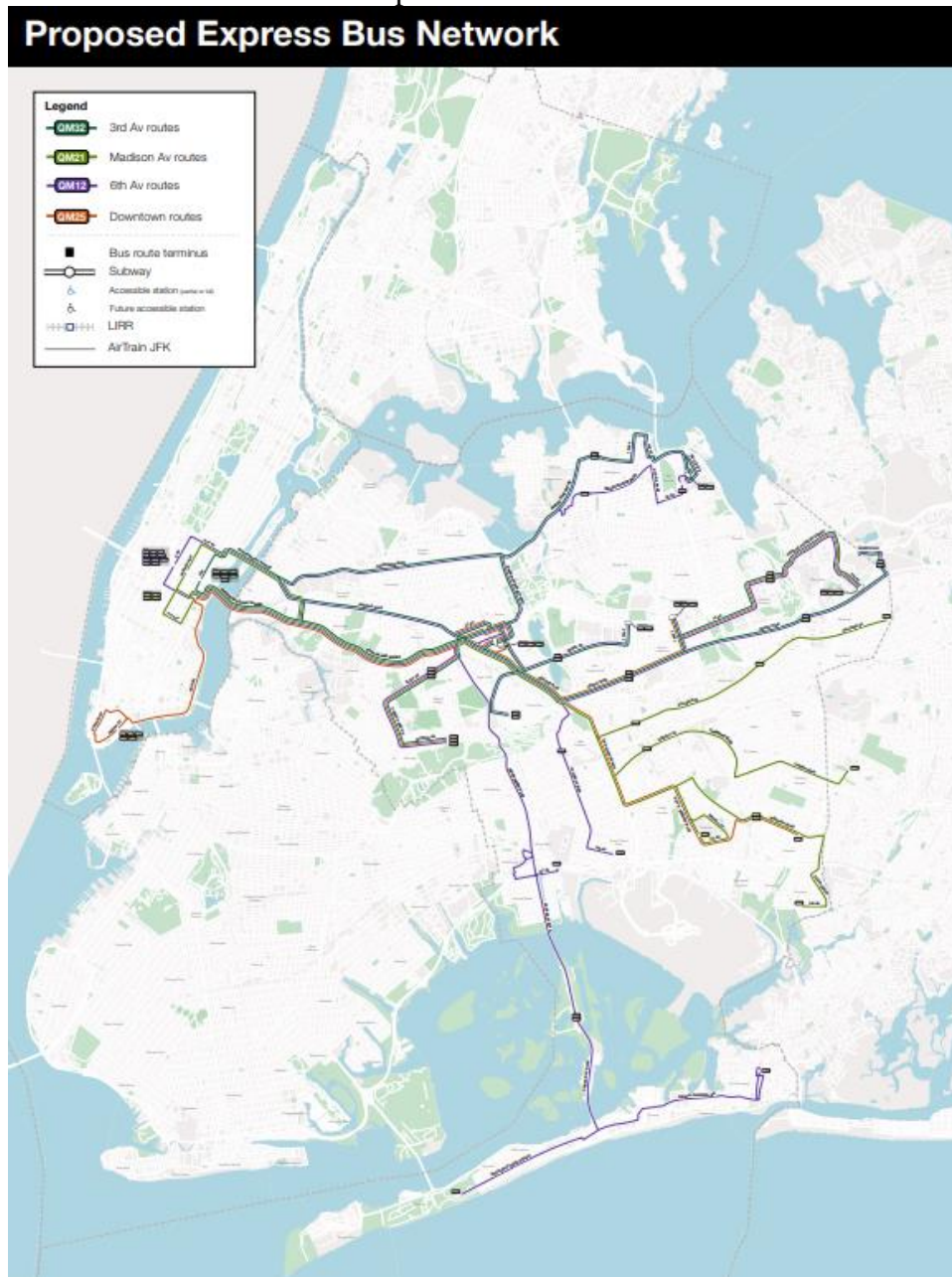
Routes Affected: Queens Route Network

The following documents are attached:

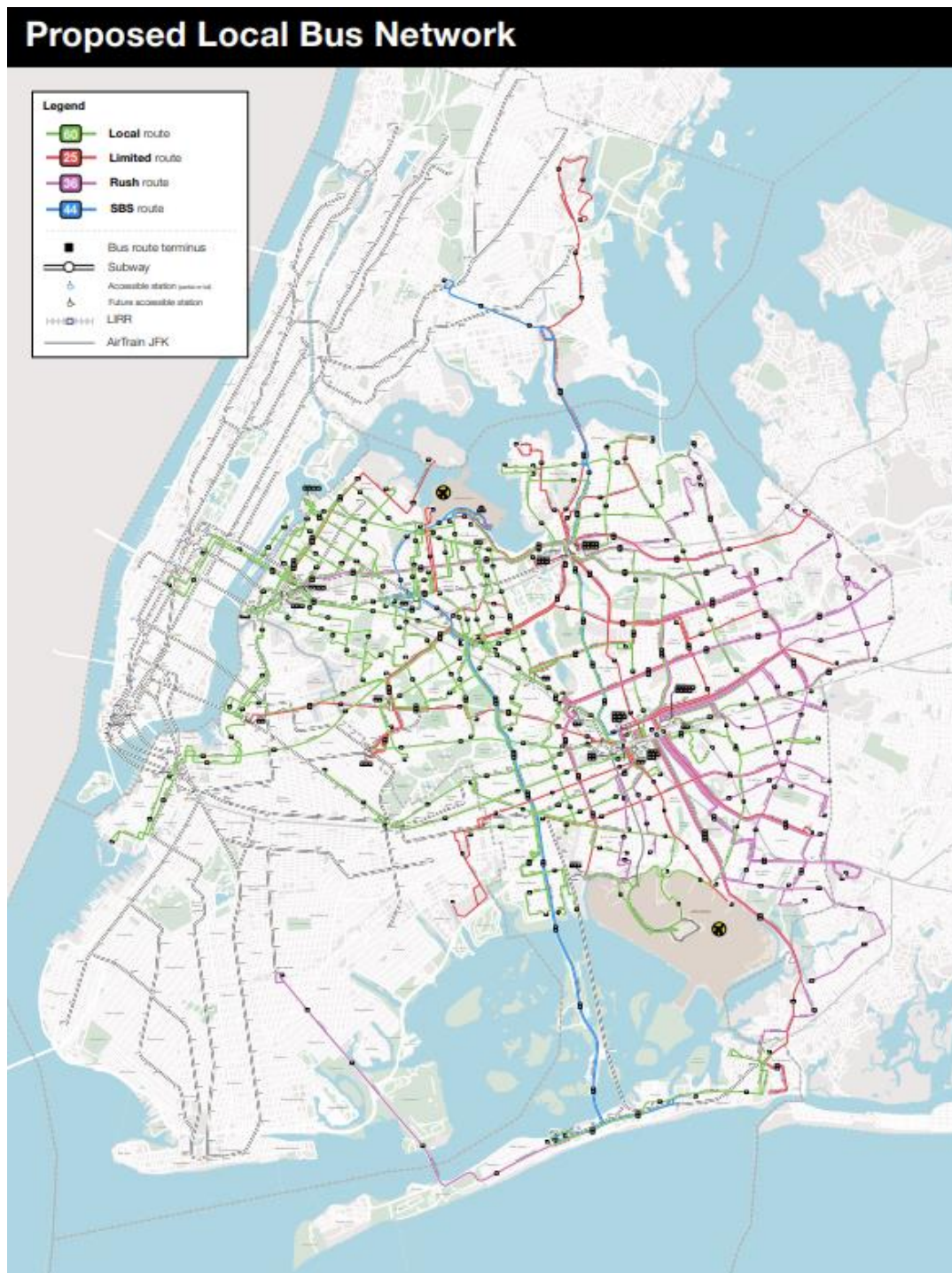
- Route profiles of the proposed service change(s)
  - Census tract of the proposed service change and their destination
  - Demographic maps showing Minority and non-Minority tracts
  - Demographic maps showing Above Poverty and At or Below Poverty tracts
  - Analysis table showing average trip time between census tracts and if they are Minority and Non-Minority area and Above Poverty and At or Below Poverty areas
-

# NETWORK LEVEL IMPROVEMENTS

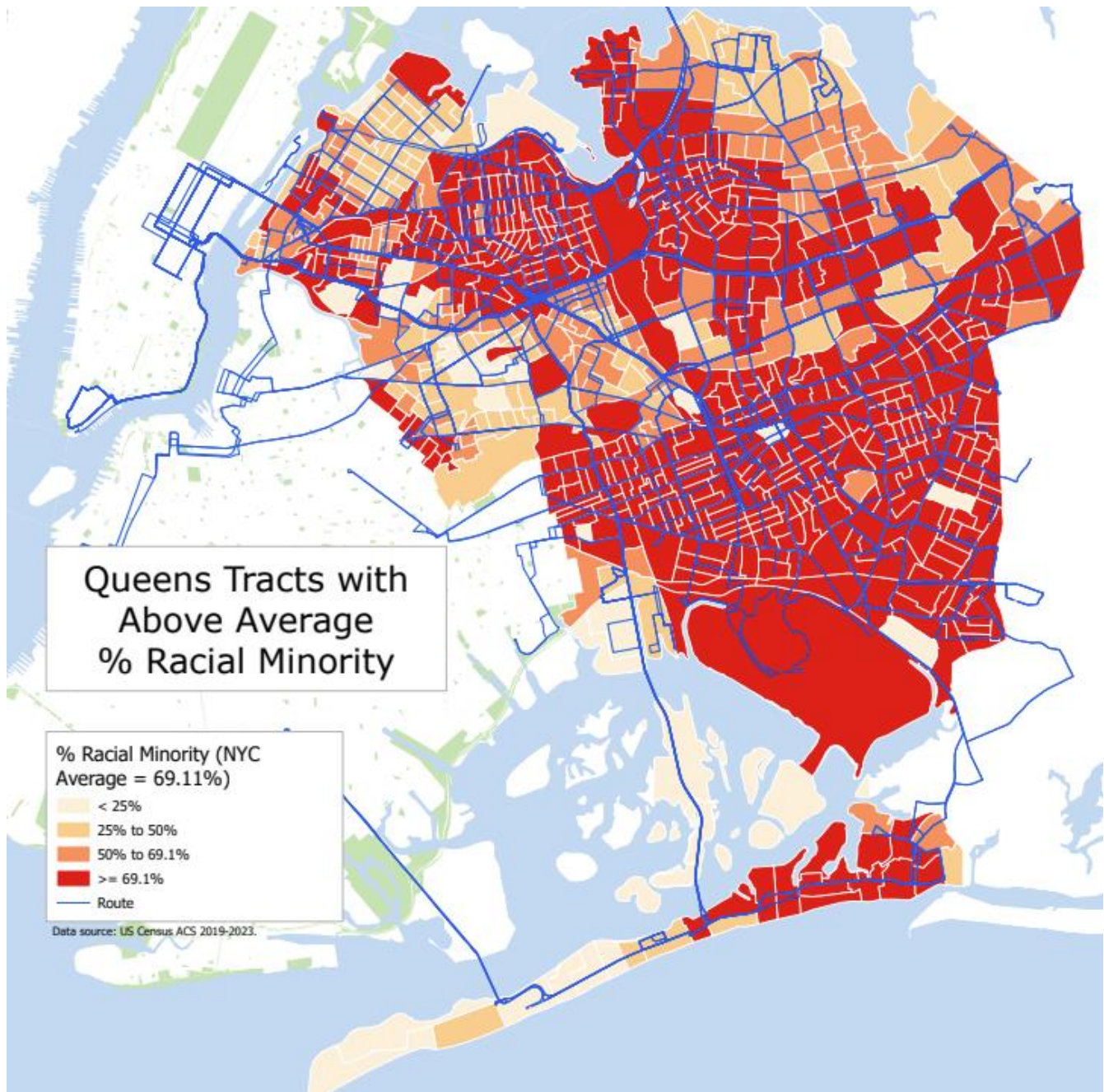
Queens is comprised of many neighborhoods, each with its own unique transit service needs. For the Redesign, each route and transit corridor were examined through two (2) lenses. First, each route and corridor were examined in its entirety to see how it serves the broader Queens Bus Network. Second, the neighborhood level received focus to evaluate clusters of routes - sometimes only small portions of each route - to see how they work together to serve the Queen's various neighborhoods. That said by dividing Queens into separate service areas, each route's function can be understood throughout its many segments and determine the best course of action to improve service.



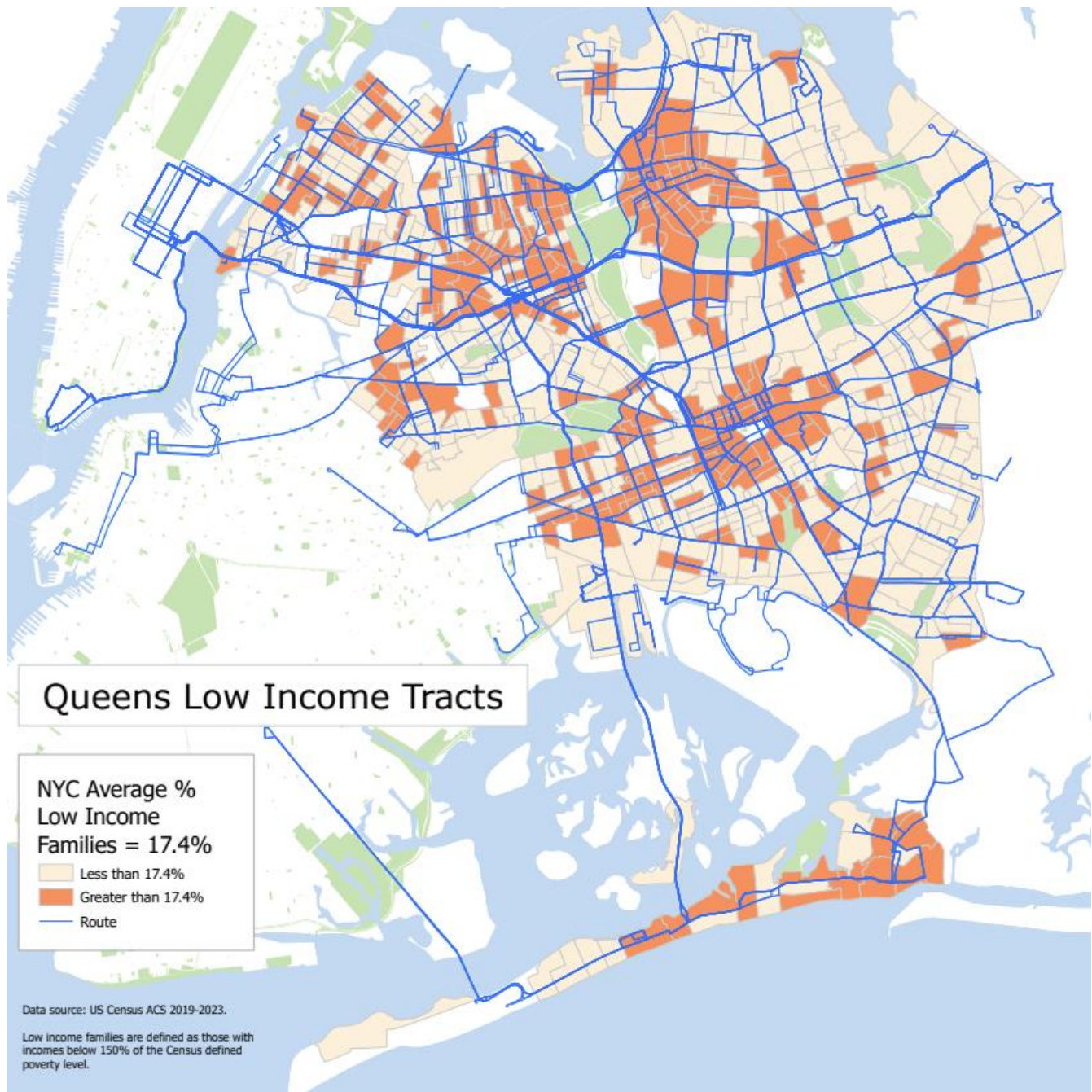
# NETWORK LEVEL IMPROVEMENTS



# NETWORK LEVEL IMPROVEMENTS



# NETWORK LEVEL IMPROVEMENTS





# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 1.03; Queens County; New York	minority	Above poverty	0.0	2
Census Tract 1.04; Queens County; New York	minority	Above poverty	-0.1	33
Census Tract 1008.03; Queens County; New York	minority	At or Below poverty	-0.6	199
Census Tract 100; Queens County; New York	minority	Above poverty	-0.4	172
Census Tract 1010.03; Queens County; New York	non-minority	Above poverty	-1.4	77
Census Tract 1010.04; Queens County; New York	non-minority	At or Below poverty	-1.2	106
Census Tract 1017; Queens County; New York	non-minority	Above poverty	-2.3	76
Census Tract 101; Queens County; New York	non-minority	Above poverty	-0.2	145
Census Tract 1029; Queens County; New York	non-minority	Above poverty	-3.5	45
Census Tract 102; Queens County; New York	minority	Above poverty	-1.1	28
Census Tract 1032.01; Queens County; New York	minority	At or Below poverty	-2.7	62
Census Tract 1032.02; Queens County; New York	non-minority	At or Below poverty	-1.8	84
Census Tract 1033; Queens County; New York	non-minority	Above poverty	-1.5	138
Census Tract 1039; Queens County; New York	non-minority	Above poverty	-0.4	434
Census Tract 103; Queens County; New York	non-minority	At or Below poverty	0.0	122
Census Tract 1047; Queens County; New York	minority	At or Below poverty	-0.6	119
Census Tract 104; Queens County; New York	minority	Above poverty	-1.9	35
Census Tract 1059; Queens County; New York	non-minority	Above poverty	-0.5	46
Census Tract 106; Queens County; New York	minority	At or Below poverty	-0.6	502
Census Tract 1072.01; Queens County; New York	non-minority	Above poverty	-0.3	25
Census Tract 1085; Queens County; New York	non-minority	Above poverty	-1.2	43
Census Tract 108; Queens County; New York	minority	At or Below poverty	-0.1	4
Census Tract 1093; Queens County; New York	non-minority	Above poverty	-1.6	31
Census Tract 1097; Queens County; New York	non-minority	Above poverty	-1.0	19
Census Tract 1099; Queens County; New York	non-minority	Above poverty	-1.2	67
Census Tract 10; Queens County; New York	minority	Above poverty	-1.0	178
Census Tract 110; Queens County; New York	minority	At or Below poverty	-0.3	44
Census Tract 111; Queens County; New York	non-minority	Above poverty	0.0	21
Census Tract 1123; Queens County; New York	non-minority	Above poverty	-2.3	72
Census Tract 112; Queens County; New York	minority	At or Below poverty	-0.7	82
Census Tract 1133; Queens County; New York	non-minority	Above poverty	-0.7	1
Census Tract 1139; Queens County; New York	non-minority	At or Below poverty	-2.4	93
Census Tract 113; Queens County; New York	non-minority	At or Below poverty	0.0	34
Census Tract 1141; Queens County; New York	non-minority	Above poverty	-1.4	31
Census Tract 1147; Queens County; New York	non-minority	Above poverty	-0.6	8
Census Tract 114; Queens County; New York	minority	Above poverty	0.3	18
Census Tract 1151; Queens County; New York	non-minority	Above poverty	0.1	10
Census Tract 1155; Queens County; New York	minority	At or Below poverty	-0.5	24
Census Tract 1157; Queens County; New York	minority	At or Below poverty	-1.0	110
Census Tract 1159; Queens County; New York	minority	At or Below poverty	0.0	4
Census Tract 115; Queens County; New York	non-minority	At or Below poverty	-0.1	122
Census Tract 1161; Queens County; New York	minority	At or Below poverty	0.0	22
Census Tract 1163.01; Queens County; New York	minority	At or Below poverty	-0.2	50
Census Tract 1163.02; Queens County; New York	minority	At or Below poverty	-0.2	35
Census Tract 1167; Queens County; New York	minority	At or Below poverty	-0.8	95
Census Tract 116; Queens County; New York	minority	Above poverty	-0.5	63
Census Tract 1171; Queens County; New York	minority	At or Below poverty	0.6	90
Census Tract 1175; Queens County; New York	minority	Above poverty	-0.9	65
Census Tract 117; Queens County; New York	non-minority	Above poverty	-0.1	161

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 1181; Queens County; New York	non-minority	At or Below poverty	-0.2	54
Census Tract 1185; Queens County; New York	minority	At or Below poverty	-3.5	186
Census Tract 1187; Queens County; New York	minority	At or Below poverty	-1.3	48
Census Tract 1189; Queens County; New York	minority	Above poverty	-0.7	148
Census Tract 118; Queens County; New York	minority	At or Below poverty	-0.2	160
Census Tract 1191; Queens County; New York	minority	At or Below poverty	-0.7	99
Census Tract 1193; Queens County; New York	minority	At or Below poverty	-1.7	170
Census Tract 1195; Queens County; New York	non-minority	At or Below poverty	-1.4	17
Census Tract 1199; Queens County; New York	minority	At or Below poverty	-1.7	90
Census Tract 119; Queens County; New York	non-minority	Above poverty	-0.2	69
Census Tract 1201; Queens County; New York	minority	At or Below poverty	-1.5	90
Census Tract 1203; Queens County; New York	minority	At or Below poverty	-0.7	4
Census Tract 1205; Queens County; New York	minority	At or Below poverty	0.1	48
Census Tract 1207.01; Queens County; New York	minority	Above poverty	-2.7	17
Census Tract 120; Queens County; New York	minority	At or Below poverty	-0.7	309
Census Tract 1215; Queens County; New York	minority	Above poverty	-2.0	301
Census Tract 121; Queens County; New York	non-minority	Above poverty	0.0	28
Census Tract 1223; Queens County; New York	minority	Above poverty	-0.1	12
Census Tract 1227.02; Queens County; New York	minority	At or Below poverty	-3.4	621
Census Tract 1227.03; Queens County; New York	non-minority	At or Below poverty	-2.2	303
Census Tract 1227.04; Queens County; New York	minority	Above poverty	-1.5	71
Census Tract 122; Queens County; New York	minority	Above poverty	0.6	258
Census Tract 123.01; Queens County; New York	non-minority	Above poverty	-0.3	43
Census Tract 1241; Queens County; New York	non-minority	Above poverty	-0.4	322
Census Tract 1247; Queens County; New York	non-minority	Above poverty	0.3	239
Census Tract 124; Queens County; New York	minority	Above poverty	-0.5	204
Census Tract 1257; Queens County; New York	minority	At or Below poverty	-0.3	48
Census Tract 125; Queens County; New York	non-minority	Above poverty	-0.1	220
Census Tract 126.01; Queens County; New York	minority	At or Below poverty	-0.1	149
Census Tract 126.02; Queens County; New York	minority	Above poverty	-0.7	174
Census Tract 1265; Queens County; New York	minority	Above poverty	-0.5	68
Census Tract 1267; Queens County; New York	non-minority	Above poverty	-0.6	138
Census Tract 1277; Queens County; New York	non-minority	Above poverty	-1.3	120
Census Tract 128; Queens County; New York	non-minority	Above poverty	-0.1	52
Census Tract 1291.02; Queens County; New York	non-minority	Above poverty	0.1	42
Census Tract 1291.03; Queens County; New York	non-minority	Above poverty	-1.0	138
Census Tract 1291.04; Queens County; New York	non-minority	Above poverty	-3.8	246
Census Tract 12; Queens County; New York	minority	Above poverty	-0.1	34
Census Tract 1301; Queens County; New York	minority	Above poverty	-2.2	147
Census Tract 130; Queens County; New York	non-minority	At or Below poverty	0.1	72
Census Tract 132; Queens County; New York	non-minority	At or Below poverty	0.0	65
Census Tract 1333; Queens County; New York	non-minority	Above poverty	-0.7	265
Census Tract 1339; Queens County; New York	non-minority	Above poverty	-0.3	35
Census Tract 1341; Queens County; New York	minority	Above poverty	-1.0	194
Census Tract 1347.01; Queens County; New York	minority	At or Below poverty	-1.8	247
Census Tract 1347.02; Queens County; New York	minority	Above poverty	-1.8	78
Census Tract 134; Queens County; New York	non-minority	At or Below poverty	-0.1	291
Census Tract 135; Queens County; New York	non-minority	Above poverty	0.2	54
Census Tract 1367; Queens County; New York	minority	Above poverty	-0.4	9
Census Tract 136; Queens County; New York	non-minority	Above poverty	-0.6	41

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 1377; Queens County; New York	minority	Above poverty	-5.3	134
Census Tract 137; Queens County; New York	non-minority	Above poverty	0.2	79
Census Tract 1385.01; Queens County; New York	minority	Above poverty	-6.1	233
Census Tract 138; Queens County; New York	non-minority	At or Below poverty	-0.2	24
Census Tract 1399; Queens County; New York	non-minority	Above poverty	-0.9	26
Census Tract 1403; Queens County; New York	minority	At or Below poverty	-2.6	41
Census Tract 1409.01; Queens County; New York	minority	Above poverty	-1.7	16
Census Tract 1409.02; Queens County; New York	minority	At or Below poverty	-4.4	77
Census Tract 140; Queens County; New York	non-minority	At or Below poverty	-0.3	17
Census Tract 1417; Queens County; New York	minority	At or Below poverty	-4.6	322
Census Tract 141; Queens County; New York	non-minority	Above poverty	-0.8	9
Census Tract 142.01; Queens County; New York	minority	Above poverty	-0.1	47
Census Tract 142.02; Queens County; New York	minority	Above poverty	0.3	234
Census Tract 1429; Queens County; New York	non-minority	Above poverty	-7.8	279
Census Tract 143; Queens County; New York	non-minority	At or Below poverty	0.0	27
Census Tract 1441; Queens County; New York	non-minority	Above poverty	-3.9	48
Census Tract 1447; Queens County; New York	minority	Above poverty	-9.3	393
Census Tract 144; Queens County; New York	minority	At or Below poverty	-0.5	162
Census Tract 1451.01; Queens County; New York	non-minority	Above poverty	-1.8	16
Census Tract 1451.02; Queens County; New York	minority	At or Below poverty	-3.0	101
Census Tract 1459; Queens County; New York	non-minority	Above poverty	-4.2	212
Census Tract 1463; Queens County; New York	non-minority	Above poverty	-2.1	93
Census Tract 1467; Queens County; New York	non-minority	Above poverty	-1.7	60
Census Tract 1471; Queens County; New York	non-minority	At or Below poverty	-1.7	46
Census Tract 1479; Queens County; New York	non-minority	Above poverty	-1.4	36
Census Tract 147; Queens County; New York	non-minority	Above poverty	-0.1	141
Census Tract 148; Queens County; New York	minority	At or Below poverty	0.1	100
Census Tract 149; Queens County; New York	non-minority	At or Below poverty	0.0	29
Census Tract 14; Queens County; New York	minority	At or Below poverty	0.0	18
Census Tract 1507.01; Queens County; New York	non-minority	Above poverty	-1.1	20
Census Tract 1507.02; Queens County; New York	non-minority	Above poverty	-2.0	121
Census Tract 151; Queens County; New York	non-minority	Above poverty	0.0	5
Census Tract 1529.01; Queens County; New York	non-minority	Above poverty	-0.6	18
Census Tract 1529.02; Queens County; New York	non-minority	Above poverty	-0.1	11
Census Tract 152; Queens County; New York	minority	At or Below poverty	-0.3	96
Census Tract 154; Queens County; New York	minority	Above poverty	-0.2	56
Census Tract 1551.01; Queens County; New York	non-minority	Above poverty	-0.9	2
Census Tract 1551.03; Queens County; New York	non-minority	Above poverty	-0.3	25
Census Tract 1551.04; Queens County; New York	non-minority	Above poverty	-2.5	183
Census Tract 155; Queens County; New York	non-minority	At or Below poverty	0.4	12
Census Tract 1567; Queens County; New York	minority	At or Below poverty	-0.9	101
Census Tract 156; Queens County; New York	minority	At or Below poverty	0.1	98
Census Tract 1571.01; Queens County; New York	minority	Above poverty	-3.1	217
Census Tract 1571.02; Queens County; New York	minority	Above poverty	-1.9	53
Census Tract 1579.01; Queens County; New York	minority	Above poverty	0.4	1
Census Tract 1579.02; Queens County; New York	minority	Above poverty	-2.3	104
Census Tract 1579.03; Queens County; New York	minority	Above poverty	-3.1	119
Census Tract 157; Queens County; New York	non-minority	At or Below poverty	-0.1	173
Census Tract 158.01; Queens County; New York	minority	Above poverty	-0.3	170
Census Tract 158.02; Queens County; New York	minority	Above poverty	-1.2	147

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 159; Queens County; New York	non-minority	At or Below poverty	-0.1	12
Census Tract 1617; Queens County; New York	non-minority	Above poverty	-2.5	59
Census Tract 161; Queens County; New York	non-minority	At or Below poverty	-0.4	132
Census Tract 1621; Queens County; New York	minority	Above poverty	-2.6	71
Census Tract 163; Queens County; New York	minority	At or Below poverty	-0.3	59
Census Tract 164; Queens County; New York	minority	At or Below poverty	-0.6	87
Census Tract 166; Queens County; New York	minority	Above poverty	-1.3	287
Census Tract 168; Queens County; New York	minority	Above poverty	-0.1	4
Census Tract 169; Queens County; New York	non-minority	Above poverty	-0.1	3
Census Tract 16; Queens County; New York	minority	At or Below poverty	-0.1	39
Census Tract 170; Queens County; New York	minority	Above poverty	-0.4	32
Census Tract 172; Queens County; New York	minority	Above poverty	-0.9	31
Census Tract 174; Queens County; New York	minority	Above poverty	-1.3	31
Census Tract 176; Queens County; New York	minority	Above poverty	-1.0	44
Census Tract 178; Queens County; New York	minority	At or Below poverty	-1.1	90
Census Tract 179.01; Queens County; New York	non-minority	Above poverty	0.0	21
Census Tract 180; Queens County; New York	minority	At or Below poverty	-2.4	262
Census Tract 181.01; Queens County; New York	non-minority	Above poverty	-0.2	101
Census Tract 181.02; Queens County; New York	non-minority	At or Below poverty	0.0	69
Census Tract 182; Queens County; New York	minority	Above poverty	-2.9	147
Census Tract 183; Queens County; New York	non-minority	Above poverty	-0.1	237
Census Tract 184.01; Queens County; New York	minority	At or Below poverty	-2.5	149
Census Tract 185.01; Queens County; New York	non-minority	Above poverty	-0.2	15
Census Tract 185.02; Queens County; New York	non-minority	Above poverty	0.1	51
Census Tract 186; Queens County; New York	minority	Above poverty	-2.5	52
Census Tract 187; Queens County; New York	minority	Above poverty	0.7	54
Census Tract 189; Queens County; New York	non-minority	At or Below poverty	0.1	43
Census Tract 18; Queens County; New York	minority	Above poverty	-0.2	323
Census Tract 19.01; Queens County; New York	non-minority	Above poverty	-0.1	23
Census Tract 19.02; Queens County; New York	non-minority	Above poverty	-0.2	129
Census Tract 19.03; Queens County; New York	non-minority	Above poverty	0.2	78
Census Tract 190; Queens County; New York	minority	Above poverty	-1.5	239
Census Tract 192; Queens County; New York	minority	Above poverty	-1.9	27
Census Tract 194; Queens County; New York	minority	Above poverty	-2.7	88
Census Tract 196; Queens County; New York	minority	At or Below poverty	-0.4	21
Census Tract 198; Queens County; New York	minority	At or Below poverty	-0.6	95
Census Tract 199.01; Queens County; New York	minority	Above poverty	0.4	38
Census Tract 202; Queens County; New York	minority	At or Below poverty	-1.4	101
Census Tract 204; Queens County; New York	minority	At or Below poverty	0.1	211
Census Tract 205; Queens County; New York	minority	Above poverty	-0.1	41
Census Tract 206; Queens County; New York	minority	At or Below poverty	-0.1	59
Census Tract 208; Queens County; New York	minority	At or Below poverty	-1.5	286
Census Tract 20; Queens County; New York	minority	Above poverty	-1.0	373
Census Tract 212; Queens County; New York	minority	At or Below poverty	-1.7	808
Census Tract 214; Queens County; New York	minority	At or Below poverty	-0.2	118
Census Tract 216.01; Queens County; New York	non-minority	Above poverty	-0.4	214
Census Tract 220.01; Queens County; New York	minority	Above poverty	-0.4	172
Census Tract 220.02; Queens County; New York	non-minority	Above poverty	-0.2	220
Census Tract 22; Queens County; New York	minority	At or Below poverty	-1.1	421
Census Tract 230; Queens County; New York	minority	Above poverty	-0.3	39

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 235.01; Queens County; New York	minority	At or Below poverty	0.1	55
Census Tract 235.02; Queens County; New York	minority	At or Below poverty	-0.1	105
Census Tract 236; Queens County; New York	minority	At or Below poverty	-1.6	247
Census Tract 238; Queens County; New York	minority	At or Below poverty	-1.2	203
Census Tract 240; Queens County; New York	minority	At or Below poverty	-1.2	1,107
Census Tract 243; Queens County; New York	minority	Above poverty	0.0	291
Census Tract 245; Queens County; New York	non-minority	At or Below poverty	-0.1	10
Census Tract 247; Queens County; New York	minority	At or Below poverty	-0.2	80
Census Tract 249; Queens County; New York	minority	Above poverty	0.0	133
Census Tract 24; Queens County; New York	minority	At or Below poverty	-0.1	26
Census Tract 251; Queens County; New York	minority	Above poverty	0.0	42
Census Tract 253.01; Queens County; New York	non-minority	At or Below poverty	-0.4	163
Census Tract 253.02; Queens County; New York	minority	At or Below poverty	-0.3	115
Census Tract 254.01; Queens County; New York	minority	At or Below poverty	1.1	119
Census Tract 254.02; Queens County; New York	minority	At or Below poverty	0.2	83
Census Tract 255; Queens County; New York	minority	Above poverty	-0.1	109
Census Tract 257; Queens County; New York	minority	At or Below poverty	0.4	19
Census Tract 258; Queens County; New York	minority	Above poverty	0.1	176
Census Tract 259; Queens County; New York	minority	Above poverty	-0.5	321
Census Tract 25; Queens County; New York	minority	At or Below poverty	-0.1	41
Census Tract 260; Queens County; New York	minority	At or Below poverty	-0.8	213
Census Tract 261; Queens County; New York	minority	Above poverty	0.5	307
Census Tract 262; Queens County; New York	minority	At or Below poverty	-1.2	102
Census Tract 263; Queens County; New York	minority	Above poverty	-0.4	98
Census Tract 264; Queens County; New York	minority	Above poverty	-1.5	123
Census Tract 265.01; Queens County; New York	minority	At or Below poverty	-0.3	168
Census Tract 265.02; Queens County; New York	minority	Above poverty	-0.4	13
Census Tract 266; Queens County; New York	minority	Above poverty	-1.6	30
Census Tract 267; Queens County; New York	minority	Above poverty	-0.5	579
Census Tract 269.01; Queens County; New York	minority	At or Below poverty	-0.5	139
Census Tract 271.01; Queens County; New York	minority	At or Below poverty	-0.6	216
Census Tract 272; Queens County; New York	minority	Above poverty	-1.0	48
Census Tract 273.01; Queens County; New York	minority	At or Below poverty	-0.1	36
Census Tract 273.02; Queens County; New York	minority	At or Below poverty	0.1	141
Census Tract 276; Queens County; New York	minority	At or Below poverty	-1.7	101
Census Tract 277.01; Queens County; New York	minority	Above poverty	0.0	118
Census Tract 277.02; Queens County; New York	minority	At or Below poverty	-0.4	151
Census Tract 278; Queens County; New York	minority	At or Below poverty	-0.3	36
Census Tract 279; Queens County; New York	minority	Above poverty	-0.3	43
Census Tract 280; Queens County; New York	minority	Above poverty	0.3	9
Census Tract 281; Queens County; New York	minority	At or Below poverty	-0.1	134
Census Tract 282; Queens County; New York	minority	At or Below poverty	0.1	21
Census Tract 283; Queens County; New York	minority	At or Below poverty	-0.4	754
Census Tract 284; Queens County; New York	minority	Above poverty	-0.8	28
Census Tract 285; Queens County; New York	non-minority	Above poverty	0.0	66
Census Tract 287; Queens County; New York	minority	Above poverty	-0.1	194
Census Tract 288.01; Queens County; New York	minority	At or Below poverty	-1.2	206
Census Tract 288.02; Queens County; New York	minority	At or Below poverty	-1.7	180
Census Tract 289; Queens County; New York	minority	Above poverty	-0.5	84
Census Tract 28; Queens County; New York	minority	Above poverty	0.1	12

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 291; Queens County; New York	minority	At or Below poverty	-0.6	53
Census Tract 293; Queens County; New York	minority	Above poverty	-0.2	19
Census Tract 294; Queens County; New York	minority	Above poverty	-3.2	347
Census Tract 295; Queens County; New York	non-minority	Above poverty	0.9	54
Census Tract 2; Queens County; New York	minority	Above poverty	-0.2	47
Census Tract 306; Queens County; New York	minority	Above poverty	-2.1	354
Census Tract 309.03; Queens County; New York	minority	Above poverty	-2.2	71
Census Tract 309.04; Queens County; New York	minority	Above poverty	-2.1	202
Census Tract 309.05; Queens County; New York	minority	At or Below poverty	-0.5	1
Census Tract 309.06; Queens County; New York	minority	Above poverty	-0.3	315
Census Tract 30; Queens County; New York	minority	At or Below poverty	-0.3	12
Census Tract 317; Queens County; New York	non-minority	At or Below poverty	0.4	343
Census Tract 31; Queens County; New York	non-minority	Above poverty	0.0	27
Census Tract 320; Queens County; New York	minority	At or Below poverty	-3.5	88
Census Tract 327; Queens County; New York	minority	Above poverty	1.4	208
Census Tract 328; Queens County; New York	minority	Above poverty	-3.7	192
Census Tract 329; Queens County; New York	minority	Above poverty	-0.8	149
Census Tract 32; Queens County; New York	minority	At or Below poverty	-0.3	10
Census Tract 33.01; Queens County; New York	non-minority	Above poverty	-0.2	404
Census Tract 33.02; Queens County; New York	minority	At or Below poverty	0.0	96
Census Tract 330; Queens County; New York	minority	Above poverty	-3.3	153
Census Tract 334.01; Queens County; New York	minority	Above poverty	-3.4	318
Census Tract 334.03; Queens County; New York	minority	At or Below poverty	-4.2	349
Census Tract 334.04; Queens County; New York	minority	At or Below poverty	-1.2	30
Census Tract 334.05; Queens County; New York	minority	Above poverty	-0.7	7
Census Tract 337; Queens County; New York	minority	Above poverty	0.4	112
Census Tract 339; Queens County; New York	minority	At or Below poverty	0.0	1
Census Tract 347; Queens County; New York	minority	At or Below poverty	-0.8	385
Census Tract 34; Queens County; New York	minority	At or Below poverty	-1.2	120
Census Tract 351; Queens County; New York	minority	Above poverty	-0.7	464
Census Tract 352; Queens County; New York	minority	Above poverty	-1.1	100
Census Tract 353; Queens County; New York	minority	Above poverty	-0.6	146
Census Tract 357; Queens County; New York	minority	Above poverty	-1.0	487
Census Tract 358; Queens County; New York	minority	Above poverty	-2.6	54
Census Tract 361; Queens County; New York	minority	Above poverty	-0.2	50
Census Tract 363; Queens County; New York	minority	At or Below poverty	-0.9	194
Census Tract 365; Queens County; New York	minority	At or Below poverty	0.1	401
Census Tract 366; Queens County; New York	minority	Above poverty	-1.9	206
Census Tract 367; Queens County; New York	minority	At or Below poverty	-0.2	203
Census Tract 368; Queens County; New York	minority	Above poverty	-1.6	183
Census Tract 371; Queens County; New York	minority	Above poverty	-0.1	118
Census Tract 373; Queens County; New York	minority	At or Below poverty	-0.1	52
Census Tract 375.01; Queens County; New York	minority	At or Below poverty	0.3	81
Census Tract 375.02; Queens County; New York	minority	Above poverty	-4.3	616
Census Tract 376; Queens County; New York	minority	Above poverty	-1.5	133
Census Tract 379; Queens County; New York	minority	At or Below poverty	-0.2	41
Census Tract 381; Queens County; New York	minority	At or Below poverty	-0.9	254
Census Tract 384; Queens County; New York	minority	Above poverty	-1.6	67
Census Tract 38; Queens County; New York	minority	Above poverty	-0.9	264
Census Tract 394; Queens County; New York	minority	At or Below poverty	-1.5	88

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 398; Queens County; New York	minority	Above poverty	-0.6	3
Census Tract 399.01; Queens County; New York	minority	Above poverty	-0.4	29
Census Tract 39; Queens County; New York	non-minority	At or Below poverty	-0.3	49
Census Tract 40.01; Queens County; New York	minority	At or Below poverty	-0.1	83
Census Tract 40.02; Queens County; New York	minority	At or Below poverty	-0.4	164
Census Tract 401.01; Queens County; New York	minority	At or Below poverty	-0.8	41
Census Tract 401.02; Queens County; New York	minority	At or Below poverty	-2.3	345
Census Tract 402; Queens County; New York	minority	Above poverty	-0.1	110
Census Tract 403.01; Queens County; New York	minority	At or Below poverty	-0.9	17
Census Tract 403.02; Queens County; New York	minority	At or Below poverty	-1.1	69
Census Tract 404; Queens County; New York	minority	Above poverty	-0.3	156
Census Tract 405.01; Queens County; New York	minority	Above poverty	2.5	77
Census Tract 405.02; Queens County; New York	minority	Above poverty	-1.5	438
Census Tract 407.01; Queens County; New York	minority	At or Below poverty	0.2	6
Census Tract 411; Queens County; New York	minority	At or Below poverty	-2.3	399
Census Tract 413; Queens County; New York	minority	At or Below poverty	-1.2	99
Census Tract 414; Queens County; New York	minority	At or Below poverty	0.3	244
Census Tract 415; Queens County; New York	minority	Above poverty	-0.3	63
Census Tract 424; Queens County; New York	minority	Above poverty	-1.2	62
Census Tract 427; Queens County; New York	minority	At or Below poverty	-0.4	310
Census Tract 42; Queens County; New York	minority	At or Below poverty	-0.9	37
Census Tract 432; Queens County; New York	minority	Above poverty	-3.4	241
Census Tract 434; Queens County; New York	minority	Above poverty	-4.9	104
Census Tract 437.01; Queens County; New York	minority	At or Below poverty	-1.3	456
Census Tract 437.02; Queens County; New York	minority	At or Below poverty	0.2	111
Census Tract 439; Queens County; New York	minority	At or Below poverty	-1.5	572
Census Tract 43; Queens County; New York	minority	At or Below poverty	-0.1	244
Census Tract 44.01; Queens County; New York	minority	At or Below poverty	-0.2	127
Census Tract 440; Queens County; New York	minority	At or Below poverty	0.0	210
Census Tract 443.01; Queens County; New York	minority	At or Below poverty	0.0	54
Census Tract 444; Queens County; New York	minority	At or Below poverty	0.3	164
Census Tract 446.01; Queens County; New York	minority	At or Below poverty	0.0	304
Census Tract 446.02; Queens County; New York	minority	At or Below poverty	-3.5	234
Census Tract 448; Queens County; New York	minority	At or Below poverty	-0.2	10
Census Tract 450; Queens County; New York	minority	Above poverty	-0.6	123
Census Tract 454; Queens County; New York	minority	At or Below poverty	-1.4	330
Census Tract 455; Queens County; New York	minority	At or Below poverty	-0.1	118
Census Tract 456; Queens County; New York	minority	At or Below poverty	0.3	35
Census Tract 457; Queens County; New York	minority	At or Below poverty	-0.2	60
Census Tract 458; Queens County; New York	minority	Above poverty	-0.3	90
Census Tract 459; Queens County; New York	minority	Above poverty	-0.1	21
Census Tract 45; Queens County; New York	non-minority	Above poverty	-0.2	43
Census Tract 460; Queens County; New York	minority	At or Below poverty	-1.9	412
Census Tract 461; Queens County; New York	minority	At or Below poverty	-1.1	135
Census Tract 462; Queens County; New York	minority	At or Below poverty	-0.7	323
Census Tract 466; Queens County; New York	minority	At or Below poverty	-1.8	22
Census Tract 467; Queens County; New York	minority	At or Below poverty	-0.3	34
Census Tract 468; Queens County; New York	minority	Above poverty	-1.1	364
Census Tract 469.01; Queens County; New York	minority	At or Below poverty	-0.5	15
Census Tract 469.02; Queens County; New York	minority	Above poverty	-1.3	334

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 470; Queens County; New York	minority	At or Below poverty	-0.9	81
Census Tract 471; Queens County; New York	minority	At or Below poverty	-0.9	139
Census Tract 472; Queens County; New York	minority	Above poverty	-1.7	160
Census Tract 473; Queens County; New York	minority	Above poverty	-1.1	556
Census Tract 475; Queens County; New York	minority	Above poverty	-0.1	372
Census Tract 476; Queens County; New York	non-minority	Above poverty	-2.3	35
Census Tract 478.01; Queens County; New York	minority	Above poverty	-1.7	323
Census Tract 478.02; Queens County; New York	minority	At or Below poverty	-0.6	349
Census Tract 479; Queens County; New York	minority	At or Below poverty	-0.4	46
Census Tract 47; Queens County; New York	minority	At or Below poverty	0.1	70
Census Tract 480; Queens County; New York	minority	At or Below poverty	-1.2	214
Census Tract 482; Queens County; New York	minority	Above poverty	-0.5	128
Census Tract 483.02; Queens County; New York	minority	Above poverty	-0.1	60
Census Tract 484; Queens County; New York	minority	Above poverty	-0.5	168
Census Tract 485; Queens County; New York	minority	At or Below poverty	-0.2	197
Census Tract 489; Queens County; New York	minority	At or Below poverty	-0.9	114
Census Tract 492.01; Queens County; New York	minority	Above poverty	-1.8	40
Census Tract 492.02; Queens County; New York	minority	Above poverty	-0.9	82
Census Tract 493.01; Queens County; New York	non-minority	At or Below poverty	-0.8	156
Census Tract 493.02; Queens County; New York	non-minority	At or Below poverty	-1.4	379
Census Tract 495; Queens County; New York	non-minority	Above poverty	-0.2	6
Census Tract 496; Queens County; New York	minority	Above poverty	-0.8	120
Census Tract 497; Queens County; New York	minority	Above poverty	-0.4	51
Census Tract 499; Queens County; New York	minority	At or Below poverty	-1.3	584
Census Tract 4; Queens County; New York	minority	Above poverty	-0.7	76
Census Tract 500; Queens County; New York	minority	Above poverty	-0.2	117
Census Tract 502.01; Queens County; New York	minority	Above poverty	-0.8	50
Census Tract 504; Queens County; New York	minority	Above poverty	-1.3	74
Census Tract 506; Queens County; New York	minority	Above poverty	-1.1	50
Census Tract 507; Queens County; New York	non-minority	Above poverty	-0.7	62
Census Tract 508; Queens County; New York	minority	Above poverty	-1.2	91
Census Tract 510; Queens County; New York	minority	Above poverty	-2.5	85
Census Tract 511; Queens County; New York	non-minority	Above poverty	0.7	176
Census Tract 512; Queens County; New York	minority	Above poverty	-2.4	123
Census Tract 513; Queens County; New York	non-minority	At or Below poverty	-0.1	77
Census Tract 515; Queens County; New York	non-minority	Above poverty	0.0	61
Census Tract 516; Queens County; New York	minority	Above poverty	-0.4	107
Census Tract 517; Queens County; New York	non-minority	Above poverty	-0.8	99
Census Tract 518; Queens County; New York	minority	Above poverty	-0.9	46
Census Tract 51; Queens County; New York	non-minority	At or Below poverty	-0.2	6
Census Tract 520; Queens County; New York	minority	Above poverty	0.5	74
Census Tract 521; Queens County; New York	non-minority	Above poverty	-0.7	363
Census Tract 522; Queens County; New York	minority	At or Below poverty	0.3	55
Census Tract 524; Queens County; New York	minority	At or Below poverty	-0.2	143
Census Tract 525; Queens County; New York	non-minority	Above poverty	-0.1	48
Census Tract 526; Queens County; New York	minority	Above poverty	-0.6	50
Census Tract 528; Queens County; New York	minority	At or Below poverty	-2.3	233
Census Tract 52; Queens County; New York	minority	At or Below poverty	-1.0	110
Census Tract 530; Queens County; New York	minority	Above poverty	-0.1	1
Census Tract 531; Queens County; New York	non-minority	At or Below poverty	-0.3	142



# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 532; Queens County; New York	minority	Above poverty	-0.9	171
Census Tract 534.01; Queens County; New York	minority	Above poverty	-3.5	87
Census Tract 535.01; Queens County; New York	non-minority	At or Below poverty	-0.3	27
Census Tract 536.01; Queens County; New York	minority	Above poverty	-1.4	5
Census Tract 538; Queens County; New York	minority	Above poverty	-1.4	138
Census Tract 539.01; Queens County; New York	non-minority	Above poverty	0.0	137
Census Tract 539.02; Queens County; New York	non-minority	At or Below poverty	0.0	22
Census Tract 53; Queens County; New York	non-minority	Above poverty	-0.2	61
Census Tract 540; Queens County; New York	minority	At or Below poverty	-1.0	203
Census Tract 542; Queens County; New York	minority	Above poverty	-0.5	190
Census Tract 545; Queens County; New York	minority	Above poverty	0.0	44
Census Tract 548; Queens County; New York	minority	Above poverty	-3.2	173
Census Tract 549; Queens County; New York	minority	At or Below poverty	-0.4	504
Census Tract 54; Queens County; New York	minority	At or Below poverty	0.1	94
Census Tract 551; Queens County; New York	non-minority	Above poverty	0.0	71
Census Tract 552; Queens County; New York	minority	Above poverty	-4.9	348
Census Tract 553; Queens County; New York	minority	Above poverty	-0.1	27
Census Tract 554; Queens County; New York	minority	Above poverty	-3.2	101
Census Tract 555; Queens County; New York	minority	Above poverty	-0.1	83
Census Tract 557; Queens County; New York	non-minority	Above poverty	-0.9	105
Census Tract 559; Queens County; New York	minority	At or Below poverty	0.0	20
Census Tract 55; Queens County; New York	non-minority	Above poverty	-0.1	16
Census Tract 560; Queens County; New York	minority	At or Below poverty	-2.5	98
Census Tract 561; Queens County; New York	non-minority	Above poverty	-0.1	2
Census Tract 564; Queens County; New York	minority	At or Below poverty	-3.1	200
Census Tract 566; Queens County; New York	minority	At or Below poverty	-1.0	48
Census Tract 567; Queens County; New York	non-minority	Above poverty	0.0	123
Census Tract 568; Queens County; New York	minority	Above poverty	0.4	159
Census Tract 577; Queens County; New York	non-minority	Above poverty	0.3	146
Census Tract 57; Queens County; New York	non-minority	At or Below poverty	0.2	68
Census Tract 580; Queens County; New York	minority	Above poverty	-0.4	25
Census Tract 581; Queens County; New York	non-minority	Above poverty	0.0	40
Census Tract 582; Queens County; New York	minority	Above poverty	-1.2	90
Census Tract 583; Queens County; New York	non-minority	Above poverty	-0.2	120
Census Tract 585; Queens County; New York	non-minority	Above poverty	-0.7	98
Census Tract 587; Queens County; New York	non-minority	Above poverty	0.0	210
Census Tract 589; Queens County; New York	non-minority	At or Below poverty	-0.2	135
Census Tract 58; Queens County; New York	minority	Above poverty	-0.3	31
Census Tract 590; Queens County; New York	minority	At or Below poverty	-0.3	66
Census Tract 592; Queens County; New York	minority	Above poverty	-2.2	65
Census Tract 593; Queens County; New York	non-minority	At or Below poverty	-0.6	116
Census Tract 595.01; Queens County; New York	non-minority	At or Below poverty	-1.1	287
Census Tract 598; Queens County; New York	minority	Above poverty	-0.8	53
Census Tract 599; Queens County; New York	non-minority	At or Below poverty	-0.7	85
Census Tract 59; Queens County; New York	non-minority	Above poverty	0.1	16
Census Tract 600; Queens County; New York	minority	Above poverty	-0.8	72
Census Tract 601; Queens County; New York	non-minority	Above poverty	-0.4	18
Census Tract 603; Queens County; New York	non-minority	Above poverty	-1.0	190
Census Tract 608; Queens County; New York	minority	Above poverty	-1.3	115
Census Tract 610; Queens County; New York	minority	Above poverty	-1.0	20

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 612; Queens County; New York	minority	Above poverty	-1.2	25
Census Tract 613.01; Queens County; New York	non-minority	At or Below poverty	-0.8	380
Census Tract 614; Queens County; New York	minority	Above poverty	-1.6	53
Census Tract 616.01; Queens County; New York	minority	Above poverty	-1.3	36
Census Tract 616.02; Queens County; New York	minority	Above poverty	-0.2	15
Census Tract 618; Queens County; New York	minority	Above poverty	-1.1	103
Census Tract 619; Queens County; New York	non-minority	At or Below poverty	-2.4	19
Census Tract 61; Queens County; New York	non-minority	Above poverty	-0.1	94
Census Tract 62.01; Queens County; New York	non-minority	Above poverty	-1.0	216
Census Tract 62.02; Queens County; New York	non-minority	Above poverty	-1.3	18
Census Tract 621; Queens County; New York	non-minority	Above poverty	-0.3	42
Census Tract 622; Queens County; New York	minority	Above poverty	-1.1	104
Census Tract 623; Queens County; New York	non-minority	At or Below poverty	0.0	114
Census Tract 625; Queens County; New York	non-minority	Above poverty	-0.2	92
Census Tract 626; Queens County; New York	minority	Above poverty	0.3	182
Census Tract 627; Queens County; New York	non-minority	Above poverty	0.2	54
Census Tract 629; Queens County; New York	non-minority	Above poverty	0.1	101
Census Tract 630; Queens County; New York	minority	Above poverty	0.7	3
Census Tract 632; Queens County; New York	minority	Above poverty	-0.7	136
Census Tract 633.01; Queens County; New York	non-minority	Above poverty	-0.3	53
Census Tract 633.02; Queens County; New York	non-minority	Above poverty	-0.2	24
Census Tract 635; Queens County; New York	non-minority	Above poverty	-0.4	153
Census Tract 637; Queens County; New York	non-minority	Above poverty	-0.1	75
Census Tract 638; Queens County; New York	minority	Above poverty	-0.1	54
Census Tract 639; Queens County; New York	non-minority	Above poverty	-0.1	100
Census Tract 63; Queens County; New York	non-minority	Above poverty	-0.2	108
Census Tract 645; Queens County; New York	non-minority	At or Below poverty	-0.3	33
Census Tract 65.01; Queens County; New York	non-minority	At or Below poverty	-0.1	18
Census Tract 65.02; Queens County; New York	non-minority	Above poverty	-0.2	22
Census Tract 654.01; Queens County; New York	minority	Above poverty	-1.3	145
Census Tract 656; Queens County; New York	minority	Above poverty	-1.3	79
Census Tract 657.02; Queens County; New York	non-minority	Above poverty	-0.5	70
Census Tract 657.03; Queens County; New York	non-minority	Above poverty	-1.1	36
Census Tract 659; Queens County; New York	non-minority	Above poverty	-1.0	61
Census Tract 660; Queens County; New York	minority	Above poverty	-4.2	76
Census Tract 663.01; Queens County; New York	non-minority	Above poverty	-0.4	88
Census Tract 664.01; Queens County; New York	minority	Above poverty	-1.5	78
Census Tract 664.02; Queens County; New York	minority	Above poverty	-3.7	57
Census Tract 664.03; Queens County; New York	minority	At or Below poverty	-1.3	0
Census Tract 665.01; Queens County; New York	non-minority	Above poverty	-0.7	102
Census Tract 667.01; Queens County; New York	non-minority	Above poverty	-0.4	22
Census Tract 669; Queens County; New York	non-minority	Above poverty	-0.7	106
Census Tract 671; Queens County; New York	non-minority	Above poverty	-1.0	219
Census Tract 677; Queens County; New York	non-minority	Above poverty	-0.4	66
Census Tract 679; Queens County; New York	non-minority	Above poverty	0.0	157
Census Tract 680; Queens County; New York	minority	Above poverty	-5.0	49
Census Tract 682; Queens County; New York	minority	Above poverty	-3.0	59
Census Tract 683; Queens County; New York	minority	Above poverty	-2.6	653
Census Tract 687; Queens County; New York	non-minority	At or Below poverty	-0.1	24
Census Tract 690; Queens County; New York	minority	Above poverty	-3.0	30

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 693; Queens County; New York	non-minority	At or Below poverty	-0.6	280
Census Tract 694; Queens County; New York	minority	Above poverty	-5.1	147
Census Tract 695; Queens County; New York	non-minority	Above poverty	-0.4	205
Census Tract 697.01; Queens County; New York	non-minority	Above poverty	-0.3	19
Census Tract 697.02; Queens County; New York	non-minority	Above poverty	-0.2	24
Census Tract 69; Queens County; New York	non-minority	At or Below poverty	-0.7	32
Census Tract 6; Queens County; New York	minority	At or Below poverty	0.1	21
Census Tract 7.01; Queens County; New York	non-minority	Above poverty	-0.2	75
Census Tract 7.02; Queens County; New York	non-minority	Above poverty	-0.1	53
Census Tract 703; Queens County; New York	non-minority	Above poverty	-0.6	254
Census Tract 709; Queens County; New York	non-minority	Above poverty	0.2	11
Census Tract 711; Queens County; New York	non-minority	Above poverty	-0.6	194
Census Tract 713.03; Queens County; New York	non-minority	Above poverty	-0.2	191
Census Tract 713.05; Queens County; New York	non-minority	Above poverty	-0.5	13
Census Tract 713.06; Queens County; New York	non-minority	At or Below poverty	0.0	22
Census Tract 717.01; Queens County; New York	non-minority	At or Below poverty	-0.4	89
Census Tract 717.02; Queens County; New York	non-minority	Above poverty	-1.9	124
Census Tract 719; Queens County; New York	non-minority	At or Below poverty	-0.7	124
Census Tract 71; Queens County; New York	non-minority	At or Below poverty	-0.2	14
Census Tract 723; Queens County; New York	non-minority	Above poverty	-0.2	13
Census Tract 729; Queens County; New York	non-minority	Above poverty	-1.1	100
Census Tract 731; Queens County; New York	non-minority	Above poverty	-1.3	46
Census Tract 737; Queens County; New York	non-minority	Above poverty	-0.3	54
Census Tract 739; Queens County; New York	non-minority	At or Below poverty	-0.9	273
Census Tract 73; Queens County; New York	non-minority	Above poverty	-0.4	44
Census Tract 741; Queens County; New York	non-minority	Above poverty	-0.2	95
Census Tract 743; Queens County; New York	non-minority	Above poverty	0.1	165
Census Tract 745; Queens County; New York	non-minority	At or Below poverty	-0.8	293
Census Tract 757.01; Queens County; New York	non-minority	Above poverty	-0.7	169
Census Tract 757.02; Queens County; New York	non-minority	Above poverty	-0.4	39
Census Tract 769.01; Queens County; New York	non-minority	Above poverty	-0.3	46
Census Tract 769.02; Queens County; New York	non-minority	Above poverty	0.0	4
Census Tract 773; Queens County; New York	non-minority	At or Below poverty	-0.4	143
Census Tract 775; Queens County; New York	non-minority	Above poverty	-0.6	15
Census Tract 779.02; Queens County; New York	non-minority	At or Below poverty	0.3	181
Census Tract 779.03; Queens County; New York	non-minority	Above poverty	0.9	228
Census Tract 779.04; Queens County; New York	non-minority	Above poverty	0.2	512
Census Tract 779.05; Queens County; New York	non-minority	Above poverty	0.1	181
Census Tract 779.06; Queens County; New York	non-minority	Above poverty	-1.3	108
Census Tract 779.07; Queens County; New York	non-minority	Above poverty	-0.3	72
Census Tract 779.08; Queens County; New York	minority	At or Below poverty	-0.8	40
Census Tract 77; Queens County; New York	non-minority	At or Below poverty	-0.3	224
Census Tract 788; Queens County; New York	minority	Above poverty	-0.9	46
Census Tract 790; Queens County; New York	minority	At or Below poverty	-1.4	57
Census Tract 792; Queens County; New York	minority	Above poverty	-2.0	49
Census Tract 797.01; Queens County; New York	minority	At or Below poverty	-1.1	790
Census Tract 797.02; Queens County; New York	minority	At or Below poverty	-0.5	14
Census Tract 799; Queens County; New York	minority	At or Below poverty	0.7	303
Census Tract 79; Queens County; New York	non-minority	Above poverty	-0.5	128
Census Tract 803.01; Queens County; New York	minority	Above poverty	-1.3	471

# NETWORK LEVEL IMPROVEMENTS

Geographic Area Name	Minority or Non-Minority	Poverty Line	Weighted Time difference (Minutes)	Passengers
Census Tract 803.02; Queens County; New York	minority	Above poverty	-1.0	300
Census Tract 809; Queens County; New York	non-minority	At or Below poverty	-0.3	670
Census Tract 814; Queens County; New York	minority	Above poverty	-0.7	15
Census Tract 818; Queens County; New York	minority	Above poverty	-0.8	121
Census Tract 81; Queens County; New York	non-minority	Above poverty	-0.4	45
Census Tract 837; Queens County; New York	minority	At or Below poverty	-1.2	319
Census Tract 838; Queens County; New York	minority	At or Below poverty	-0.9	163
Census Tract 83; Queens County; New York	non-minority	Above poverty	-1.6	632
Census Tract 840; Queens County; New York	minority	Above poverty	-0.5	80
Census Tract 845; Queens County; New York	minority	At or Below poverty	-2.8	663
Census Tract 846.01; Queens County; New York	minority	Above poverty	-0.3	24
Census Tract 846.02; Queens County; New York	minority	Above poverty	-0.4	43
Census Tract 849.01; Queens County; New York	minority	At or Below poverty	-1.5	32
Census Tract 849.02; Queens County; New York	minority	At or Below poverty	0.0	1
Census Tract 853; Queens County; New York	minority	At or Below poverty	-4.7	776
Census Tract 855; Queens County; New York	minority	At or Below poverty	-0.7	114
Census Tract 857; Queens County; New York	minority	At or Below poverty	-1.3	180
Census Tract 859; Queens County; New York	minority	At or Below poverty	-0.5	5
Census Tract 861; Queens County; New York	minority	At or Below poverty	-2.3	195
Census Tract 863; Queens County; New York	minority	At or Below poverty	-0.5	158
Census Tract 864; Queens County; New York	minority	Above poverty	-0.4	51
Census Tract 865; Queens County; New York	minority	At or Below poverty	-4.3	148
Census Tract 869; Queens County; New York	minority	At or Below poverty	-0.5	101
Census Tract 86; Queens County; New York	non-minority	At or Below poverty	-0.9	387
Census Tract 871; Queens County; New York	minority	At or Below poverty	-2.7	1,103
Census Tract 87; Queens County; New York	minority	At or Below poverty	-1.9	130
Census Tract 884; Queens County; New York	non-minority	Above poverty	-0.1	116
Census Tract 889.02; Queens County; New York	minority	At or Below poverty	-0.9	708
Census Tract 889.03; Queens County; New York	minority	At or Below poverty	-0.8	653
Census Tract 88; Queens County; New York	non-minority	Above poverty	-0.7	273
Census Tract 892.01; Queens County; New York	non-minority	Above poverty	-0.4	151
Census Tract 8; Queens County; New York	minority	Above poverty	-0.1	17
Census Tract 907; Queens County; New York	minority	Above poverty	-0.3	242
Census Tract 919; Queens County; New York	minority	Above poverty	0.5	237
Census Tract 91; Queens County; New York	non-minority	Above poverty	-0.1	6
Census Tract 922; Queens County; New York	non-minority	Above poverty	0.1	15
Census Tract 925; Queens County; New York	minority	At or Below poverty	0.4	641
Census Tract 928; Queens County; New York	non-minority	Above poverty	-0.5	21
Census Tract 929; Queens County; New York	minority	Above poverty	-0.8	244
Census Tract 934.01; Queens County; New York	non-minority	Above poverty	0.0	18
Census Tract 934.02; Queens County; New York	non-minority	Above poverty	-0.4	90
Census Tract 938; Queens County; New York	non-minority	At or Below poverty	-0.7	201
Census Tract 939; Queens County; New York	minority	Above poverty	-2.9	390
Census Tract 942.01; Queens County; New York	non-minority	At or Below poverty	-0.6	148
Census Tract 942.02; Queens County; New York	minority	At or Below poverty	-0.4	94
Census Tract 942.03; Queens County; New York	non-minority	Above poverty	-0.4	185
Census Tract 945; Queens County; New York	non-minority	Above poverty	-0.4	43
Census Tract 947; Queens County; New York	minority	At or Below poverty	-2.9	106
Census Tract 94; Queens County; New York	minority	At or Below poverty	-0.3	122
Census Tract 954; Queens County; New York	minority	At or Below poverty	-0.6	161
Census Tract 95; Queens County; New York	non-minority	Above poverty	0.0	126
Census Tract 964; Queens County; New York	minority	Above poverty	-0.8	163
Census Tract 96; Queens County; New York	minority	Above poverty	-0.5	32
Census Tract 972.02; Queens County; New York	minority	At or Below poverty	-0.1	15
Census Tract 972.04; Queens County; New York	minority	Above poverty	-1.5	212
Census Tract 97; Queens County; New York	non-minority	Above poverty	0.0	37
Census Tract 981; Queens County; New York	non-minority	Above poverty	-0.7	31
Census Tract 987; Queens County; New York	non-minority	Above poverty	-1.0	61
Census Tract 98; Queens County; New York	minority	At or Below poverty	-1.4	200
Census Tract 991; Queens County; New York	non-minority	Above poverty	0.3	81
Census Tract 992; Queens County; New York	minority	At or Below poverty	-0.6	158
Census Tract 997.01; Queens County; New York	non-minority	Above poverty	-2.7	22
Census Tract 997.03; Queens County; New York	non-minority	Above poverty	-1.3	24
Census Tract 997.04; Queens County; New York	non-minority	Above poverty	-2.5	120
Census Tract 997.05; Queens County; New York	non-minority	At or Below poverty	-0.8	19
Census Tract 998.01; Queens County; New York	minority	At or Below poverty	0.0	150
Census Tract 998.02; Queens County; New York	minority	At or Below poverty	-1.1	125

# NETWORK LEVEL IMPROVEMENTS

	Total Travel Time Difference (Minutes)		Total cost per trip	
	Non-Minority	Minority	Non-Minority	Minority
Average Travel Time Change	-0.95	-1.53	0	0
Variance	0.85	1.59	0	0
<p>Total Travel Time : Using a two-tailed test of hypothesis with a 5% error (95% confidence), the resulting t-statistic for the Minority and Non-Minority comparison = -4.35. The t-critical values are <math>\pm 1.96</math>. Since the statistic is -4.35 which is less than -1.96, it is concluded that there is a difference in the travel time changes experienced by the Minority and the Non-Minority riders in the proposed service area. However, this is only a statistical inequity. As both minority and non-minority riders experience improved travel time, there is no inequity.</p>				
<p>Total Cost per Trip : The average difference in total cost per trip between Minority and non-Minority riders is the same (unchanged) and hence no t-test can be performed</p>				
	Total Travel Time Difference (Minutes)		Total cost per trip	
	Non-poverty	Poverty	Non-poverty	Poverty
Average Travel Time Change	-1.52	-1.16	0	0
Variance	1.62	0.96	0	0
<p>Total Travel Time : Using a two-tailed test of hypothesis with a 5% error (95% confidence), the resulting t-statistic for the Below or at Poverty and Above Poverty comparison = 1.52. The t-critical values are <math>\pm 1.96</math>. Since <math>1.52 &gt; -1.96</math> and <math>&lt; +1.96</math>, therefore we conclude that there is no significant difference in the travel time change between Below or at Poverty and Above Poverty riders in the proposed service area.</p>				
<p>Total Cost per Trip : The average difference in total cost per trip between Poverty and non-Poverty riders is the same (unchanged) and hence no t-test can be performed</p>				

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## NYC Transit and MTA Bus Company Title VI Analysis Queens Bus Network Redesign Proposal

### ADDENDUM – 1

Route Network Change Analysis (Motor Bus)

**Mode:** Motor Bus

The following Maps and Structural Changes are attached as addendum:

- Route Network profile Maps of the proposed routes with Structural changes.
- Route Network proposed summary along with proposed frequencies and hours of operations
- Demographic map showing Minority and non-Minority tracts of the proposed routes with Structural changes.
- Demographic map showing Above Poverty and At or Below Poverty tracts of the proposed routes with Structural changes.

Purpose of Network Redesign

- To simplify Queens Interconnected Route Network.
  - Routes that work together to connect riders to their destinations are far more efficient than one meandering route that serves as a one-seat ride to the same destinations.
  - Interconnected routes provide faster travel times and enable increased frequency. This increased frequency also makes transferring easier, expanding riders' access to destinations within the Queens and in other boroughs.
-