

***New York City Transit Riders Council
Bus Stop Signage Survey***

DESTINATION: UNKNOWN



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On the cover: A bare signpost on Broadway, near the corner of Isham Street, in upper Manhattan. Missing are route and destination panels for the southbound M100, Bx7, and Bx20 buses.

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The New York City Transit Riders Council was created by the New York State Legislature in 1981 to represent the interests of bus and subway riders. The fifteen volunteer members are users of the transit system and are appointed by the Governor, upon the recommendation of the Mayor (five members), the Public Advocate (five members), and the Borough Presidents (one member each). For more information on the Council, please visit our website: www.pcac.org.

Executive Summary

Over the past two years, New York City Transit (NYC Transit) and the New York City Department of Transportation (NYCDOT) have embarked upon a joint, federally funded program to make city bus stop signage more useful to the riding public. Redesigned signs containing expanded travel information have been installed at all 2,175 bus stops in Manhattan, and at 400 selected locations distributed across the Bronx, Brooklyn, Queens, and Staten Island. Beginning in January 1999, installation will continue in Brooklyn and Staten Island.

The New York City Transit Riders Council (TRC) considers this effort commendable, and believes the design of the new signposts to be a marked improvement over the old. The signposts are easy to identify, and the information contained on them is more readable than the older design allowed. However, the information contained on the signposts in many instances remains inadequate.

In response to numerous errors identified on the new signs by TRC members and staff, and complaints received by the TRC from members of the public, the Council undertook a random survey of 286 of these signs.

The survey found widespread inaccuracies, some of which are statistically significant, in destination information, Guide-A-Ride listings, and panel color-coding for Limited routes. The study also found a total lack of Hours-of-Operation information for NYC Transit Express bus routes, and several instances of incorrectly sited signposts.

Problems with Destination Information

Five percent of the destination panels which should have been installed on the new signposts were missing citywide, including more than one out of every ten destination panels at stops outside of Manhattan. In Brooklyn, more than one in five destination panels were missing.

Of the destinations listed on the installed panels, 65 percent were given as neighborhoods, and not as street intersections, even though destinations are generally given as street intersections on the electronic front and side panels of NYC Transit buses. When destinations are given as neighborhoods, customers cannot accurately judge where a route will take them--such as far enough to make a connection to an intersecting route on a specific street or avenue.

Even worse, customers boarding a route at a stop located within the neighborhood given as the route's destination have no way at all to determine how much farther the route extends. Twelve percent of the destination panels surveyed listed the neighborhoods in which they were located as destinations.

Furthermore, destination panels for several Manhattan routes systemically listed neighborhoods in which these routes do not terminate or, in some instances, through which these routes do not pass at all.

Problems with Guide-A-Ride Information

Significantly, forty percent of stops citywide contained inaccurate Guide-A-Rides or lacked Guide-A-Rides entirely. This is problematic, because NYC Transit has informed the TRC that customers can supplement the information they find on the new signposts with Guide-A-Ride information. Guide-A-Ride inaccuracies frequently included listing map and schedule information for the opposite direction of travel.

Problems with Panel Color-Coding for Limited Route Service

In Manhattan, the borough with the most concentrated Limited route service, a significant 14 percent of Limited service route panels were incorrectly color-coded. Routes which offer Limited service in most cases also offer Local service. NYC Transit guidelines state that, on routes with Limited service, blue Local panels be installed at Local stops, and purple Limited panels be installed at Limited stops. However, we found many purple Limited route panels installed at Local-only stops where blue panels should be expected, especially along the M5 route in Manhattan.

Moreover, the guidelines NYC Transit currently uses to color-code Limited service route panels are unhelpful. Most routes with Limited service have segments where both Locals and Limiteds make all stops, and all Locals stop at Limited stops. Yet, even when a route's panels are color-coded correctly, there is still no way for customers to discern this information from the signs.

Problems with Hours-of-Operation Provision for Express Route Service

It is not the policy of NYC Transit to list Hours-of-Operation information for its Express routes on destination panels. We found no hours listed for any of the NYC Transit Express routes in the survey. However, some NYC Transit Express routes operate weekdays only, or rush hours only, and many routes serve different stops during peak hours than during off-peak hours. Without hours of operation listed on the destination panels, there is no way to discern when Express routes will serve many stops. This is also a problem with Limited service. Some Limited routes operate weekdays only, or during specific hours, but in no cases are these hours of operation listed on destination panels.

Again, NYC Transit suggests customers look to Guide-A-Rides for this information, but, as we report above, inaccurate or missing Guide-A-Rides were identified at almost half of the stops we surveyed.

NYCDOT-licensed private bus operators also provide Express route service, and their routes share the same new signposts. Unlike the NYC Transit routes, we found that a significant 53 percent of contract carrier Express route destination panels in Manhattan clearly listed both Hours-of-Operation and destination information.

Siting and State of Repair Problems

It is the responsibility of NYCDOT to install and repair the new signposts. In Manhattan and Brooklyn, especially, we found several signposts installed by NYCDOT in incorrect or inadequate locations. In two instances, signposts were installed 75 to 100 feet away from customer shelters where customers actually board. In Manhattan, Brooklyn, and Queens, we found several bare signposts with no route or destination panels at all. In addition, a significant three percent of

signposts citywide, and nine percent of Staten Island signposts were installed too close to trees. Much installation work occurred during the winter of 1996-1997 when trees were not in bloom. During the summer of the survey, however, these signs were in some cases entirely obscured by leaves.

Most surprising, we found several signposts installed by NYCDOT in locations which obscured other street signage including street signs, emergency information signs, and, in one instance, a traffic signal.

Further, although NYC Transit forwards most repair and correction requests to NYCDOT within 24 to 48 hours, NYCDOT policy allows up to 25 business days for repairs to be completed. While Manhattan signposts generally receive repairs within a week to ten days, according to NYC Transit, the NYCDOT lag time in the other boroughs is closer to five weeks.

Recommendations

As a result of these findings, we recommend that **NYC Transit** do the following:

- Review signposts citywide to ensure that they are installed in their correct locations, that they are neither obstructed by trees or other street signage, nor themselves obstruct other street signage, and that they contain accurate route and destination information panels.
- Better ensure the accuracy of all information before it is provided to NYCDOT for installation, and regularly inspect signposts after installation for correct siting, accuracy of installed panels, and state of repair.
- Expand the information currently contained on destination panels to also list the information contained on the electronic front and side panels of buses. This includes: the street intersection of the final stop and, if space permits, the main street via which the route operates.
- At the last stop of a route, indicate on the destination panel that it is the final stop so that customers will not wait to board. In those instances where the final stop in one direction also serves as the first boarding point for customers travelling in the return direction, the destination panel should list the return destination to avoid customer confusion.
- Correct the systemic inaccuracies contained on destination panels in Manhattan to reflect the actual neighborhoods in which routes terminate.
- Speed the installation of accurate Guide-A-Rides at all stops citywide. Install multiple Guide-A-Rides at a given stop if necessary to ensure that all routes are represented by a map and a schedule.
- Revise the policy which governs the installation and color-coding of Limited service route panels to ensure that Local and Limited service along the same route is represented by separate route panels at stops where both types of service operate.

- Provide Hours-of-Operation information on the destination panels of Limited and Express routes.

We further recommend that **NYCDOT** do the following:

- Ensure the accuracy and adequacy of signpost and route panel installations.
- Reduce the lag time for signpost corrections and repairs in the outer boroughs.

Methodology

A sample of 286 bus stop signs was randomly selected from a total of 2,575 new signs installed across the five boroughs. The list of signs surveyed appears in Appendix A.

Since at the time of the survey new signs were completely installed only within the borough of Manhattan, the other boroughs of the city were sampled separately. In order to improve statistical accuracy, larger sample sizes were chosen for the remaining boroughs. Signs in the Bronx, Brooklyn, Queens, and Staten Island were sampled as a group, and the number of signs selected in each of these boroughs was proportional to the number of new signs installed in the borough. Sample sizes for all boroughs are described below:

Manhattan:

	Number of New Signs (%)	Number of Signs in Sample (%)
	2,175 (100.0%)	218 (10.0%)

Other Boroughs, Grouped:

	Number of New Signs (%)	Number of Signs in Sample (%)
	400 (100.0%)	68 (17.0%)

Other Boroughs, By Borough:

	Number of New Signs (%)¹	Number of Signs in Sample (%)
The Bronx	75 (18.8%)	13 (19.1%)
Brooklyn	167 (41.8%)	28 (41.2%)
Queens	93 (23.3%)	16 (23.5%)
Staten Island	65 (16.3%)	11 (16.2%)
Total	400 (100.0%)	68 (100.0%)

Each bus stop sign was evaluated for the accuracy and in some cases adequacy of fifteen criteria, including (but not limited to) state of repair, route and destination information, and panel color coding.

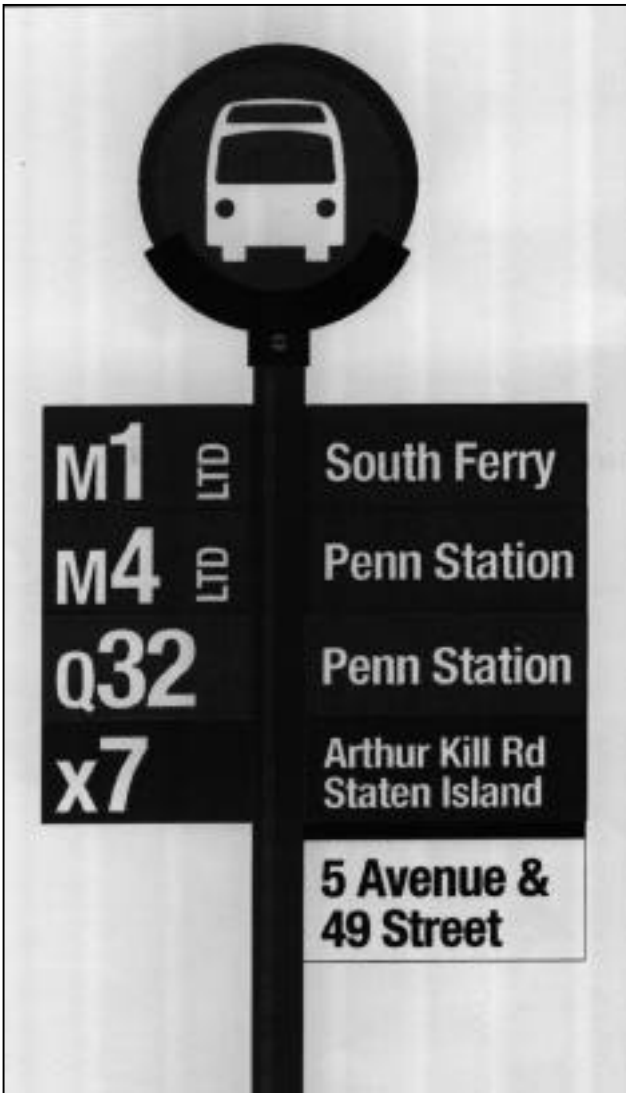
Results were tabulated and analyzed for statistical significance. A confidence level of 95 percent was used for this purpose. This means that results found to be statistically significant can be expected to represent the total population of signposts or signage panels installed within a given area with 95 percent certainty, within a certain margin of error. These margins of error are reported in Appendix B. Significant results are identified in the body of the report.

The survey was performed by TRC members and staff between June and September, 1998. The survey form appears in Appendix C.

¹ Figures do not add to an even 100 percent due to rounding.

Why We Did the Survey

In 1994, New York City Transit (NYC Transit) and the New York City Department of Transportation (NYCDOT) received separate federal grants totaling \$1.5 million to overhaul city bus stop signage. Because NYCDOT is legally responsible for all street signage within New York City, the two agencies merged their efforts and embarked on a comprehensive redesign of bus stop signage. NYC Transit sought a design which would allow the agency to communicate more route and destination information than the older signage design allowed.



New Bus Stop Signage (NYC Transit & NYCDOT).

The new signage, at left, is easily distinguishable from other street signage. Color-coded route and destination panels are affixed atop an 18-foot-tall flexible, green post, topped with a blue and white roundel. Over the past two years, this new signage has been installed at all 2,175 bus stops in Manhattan, as well as at 400 bus stops distributed across the Bronx, Brooklyn, Queens, and Staten Island. In January 1999, installation will continue in Brooklyn and Staten Island.

The New York City Transit Riders Council (TRC) considers this a commendable effort. The new signage is easier to identify and more readable than the older design. However, since installation began, TRC members and staff have observed that some of the travel information contained on the signs is either inaccurate or too imprecise to be useful. The TRC has also received numerous complaints from the public about the signs.

Therefore, we decided to investigate these signs for ourselves, with a field survey, much like the one we performed in 1997 for subway signage.²

² Foster, Alan H. (1997, July 29). *Subway Signage Survey*. New York City Transit Riders Council: New York.

What We Looked For at the Bus Stops

We judged the accuracy and usefulness of fifteen criteria for each of the bus stop signs in the survey. As a baseline for comparison, under the best of circumstances the TRC expected to find the following at each stop:

Siting and State of Repair:

- A signpost installed in its correct location, in a good state of repair, containing a correct location panel.
- Preferably, a signpost located so that it neither obscures other street signs or signals, nor is obscured by them.

Route Information:

- Route panels which accurately display all routes serving the stop.

Destination Information:

- Destination panels which accurately display route termini for all routes.
- Preferably, destinations listed as street intersections or points of interest, not as neighborhoods.

Other Relevant Information:

- An accurate Guide-A-Ride or Guide-A-Rides installed on the signpost containing at least a map for each route serving the stop, and preferably also containing schedules for each route.
- Correct color-coding of route panels for routes which offer Limited and Express service.
- Preferably, Hours-of-Operation information listed for Limited and Express routes.

Findings

Findings have been divided into four categories: Siting and State of Repair; Route Information; Destination Information; and Other Relevant Information. In the accompanying tables, results that are statistically significant have been underlined.³ Examples of problem signage follow each section.

Siting and State of Repair

Of the 218 signposts surveyed in Manhattan, 7 percent were judged to be in a poor state of repair. Most of these signposts were found to be leaning due to vehicle collisions, or to be bare, missing all signage. In addition, 2 percent of the signposts were installed in incorrect locations, and 1 percent were missing entirely.

Of the 68 signposts surveyed in the other boroughs, 4 percent were judged to be in a poor state of repair, 9 percent were missing location panels, and 3 percent were missing all signage. The worst performing signposts were in Brooklyn, where a statistically significant 18 percent of signposts were missing location panels, 4 percent were in a poor state of repair, 4 percent were installed in wrong locations, and 4 percent bare.

We also found that 2 percent of Manhattan signposts contained incorrect location panels. All of the incorrect panels were located along the west side of Fifth Avenue in Manhattan next to Central Park. The panels listed west street locations--Fifth Avenue and West 86th Street, for example. Although Fifth Avenue divides Manhattan into east and west addresses, all of these stops are definitively located on the Upper East Side. Further, almost all cross streets end on the eastern side of Fifth Avenue and do not cross it. Those roadways which do cross the avenue to continue through Central Park are termed transverses, not streets, and do not contain east or west in their names, i.e. 86th Street Transverse.

Number of Signposts with Siting and State of Repair Problems in Manhattan (%)

Problem	Manhattan
Total Signposts	218 (100%)
Missing	2 (1%)
In Wrong Location	4 (2%)
In Poor State of Repair	15 (7%)
Incorrect Location Panel	5 (2%)
Missing Location Panel	6 (3%)
Bare (Missing All Signage)	4 (2%)

³ For more information, please see **Methodology**.

Number of Signposts with Siting and State of Repair Problems Outside Manhattan (%)

Problem	Bronx	Brooklyn	Queens	Staten Island	All Outer Boroughs
Total Signposts	13 (100%)	28 (100%)	16 (100%)	11 (100%)	68 (100%)
Missing	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
In Wrong Location	0 (0%)	1 (4%)	0 (0%)	0 (0%)	1 (1%)
In Poor State of Repair	0 (0%)	1 (4%)	1 (6%)	1 (9%)	<u>3 (4%)</u>
Incorrect Location Panel	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Missing Location Panel	0 (0%)	<u>5 (18%)</u>	1 (6%)	0 (0%)	<u>6 (9%)</u>
Bare (Missing All Signage)	0 (0%)	1 (4%)	1 (6%)	0 (0%)	<u>2 (3%)</u>

Examples of Siting and State-of-Repair Problems



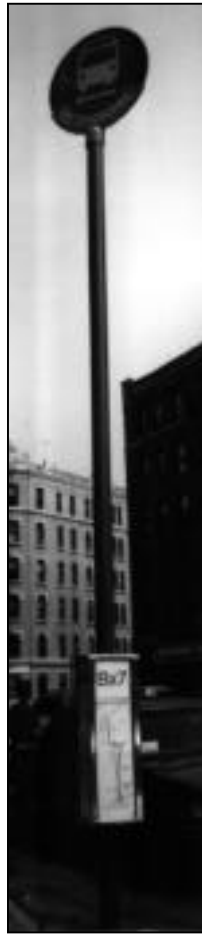
In the far left corner of this photo, the Q24 bus can be seen stopping at its correct stopping location at **Van Sinderen Avenue and Fulton Street in Brooklyn**. In the far right corner of the same photo, its new bus stop sign has been installed one-hundred feet out of place. When we visited this location, we were told by an NYC Transit employee that customers frequently wait at this incorrect location and miss the bus.

In the photo at right, one can also see that destination panels for both eastbound and westbound Q24 service have been installed. However, westbound service does not stop here.



In the photo below, passengers wait at the bus shelter on **Sixth Avenue mid-block between 17th and 18th Streets in Manhattan**. The bus stop sign, however, has been installed near the corner of 18th Street, between the two trees in the far left corner of the photo. Because of its placement, the sign is not visible from the shelter.





The signposts above left (**Fulton Street and New York Avenue in Brooklyn**) and center (**Broadway and West 228th Street in Manhattan**) are bare. They have been installed without any signage, although they do contain Guide-A-Rides.

The signpost above right, at the corner of **Madison and Market Streets in Manhattan**, has obviously been damaged by a vehicle collision and is in need of repair.

The temporary stop sign at left was found at **Twelfth Avenue near West 42nd Street in Manhattan**, the western terminal for the M42 and M50 routes. The new signpost was removed due to construction. This sign is not clearly visible to pedestrians, has part of a message showing which is not intended for this location (“Bus Stop Temporarily Relocated to York Avenue...”) and does not list the routes which serve the stop. As a result, the many tourists who utilize the M42 and M50 routes to access waterfront attractions have difficulty finding the stop for their return trips.

Route Information

The signposts performed well in the presentation of route information. Citywide, 3 percent of route panels were missing at the stops surveyed, and less than 1 percent were inaccurate. These results are reflected in our findings for Manhattan, where we found 3 percent of route panels missing, and only 1 percent of route panels inaccurate.

In the other boroughs, results were similar. However, Queens and Staten Island exhibited a higher percentage of missing route panels. In Queens, 6 percent were missing. In Staten Island, 7 percent were missing.

Number of Inadequate Route Panels in Manhattan and Citywide (%)

Problem	Manhattan	Citywide
Total Route Panels⁴	373 (100%)	525 (100%)
Missing	12 (3%)	17 (3%)
Inaccurate	2 (1%)	2 (<1%)

Number of Inadequate Route Panels Outside Manhattan (%)

Problem	Bronx	Brooklyn	Queens	Staten Island	All Outer Boroughs
Total Route Panels	40 (100%)	51 (100%)	31 (100%)	30 (100%)	152 (100%)
Missing	0 (0%)	1 (2%)	2 (6%)	2 (7%)	5 (3%)
Inaccurate	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Although relatively low percentages of route panels were found to be missing or inaccurate, these deficient panels were widely distributed across the signposts in the survey. Of all Manhattan signposts surveyed, 4 percent were found to be missing route panels.

Of the signposts surveyed in the other boroughs, 4 percent were found to be missing route panels. By borough, route panels were missing on 4 percent of Brooklyn signposts, 6 percent of Queens signposts, and 9 percent of Staten Island signposts.

Number of Signposts with Inadequate Route Panels in Manhattan (%)

Problem	Manhattan
Total Signposts	218 (100%)
Route Panel Missing	9 (4%)
Route Panel Inaccurate	2 (1%)

⁴ This figure represents the total number of route panels which should be installed on the signposts, as calculated from the NYC Transit/NYCDOT master list of new bus stops.

Number of Signposts with Inadequate Route Panels Outside Manhattan (%)

Problem	Bronx	Brooklyn	Queens	Staten Island	All Outer Boroughs
Total Signposts	13 (100%)	28 (100%)	16 (100%)	11 (100%)	68 (100%)
Route Panel Missing	0 (0%)	1 (4%)	1 (6%)	1 (9%)	<u>3 (4%)</u>
Route Panel Inaccurate	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Because route panel deficiencies were frequently associated with other problems, such as bare or missing signposts, examples can be found in the previous section, **Siting and State of Repair Problems**.

Destination Information

The new signposts were designed primarily to allow destination information to be included on them. However, this is the category in which signposts performed the worst. Of all destination panels citywide, 3 percent were inaccurate and a significant 5 percent were missing. Broken down by borough, the problems are more pronounced. All of the inaccurate destination panels citywide occurred in Manhattan, where 4 percent of destination panels contained wrong information. Most of these inaccuracies appeared to exhibit a systemic lack of knowledge about the locations and borders of Manhattan neighborhoods (please see the accompanying examples). No inaccuracies were found in the other boroughs.

However, the other boroughs exhibited higher percentages of missing destination panels. While 3 percent of destination panels were missing in Manhattan, 5 percent were missing in the Bronx, 6 percent were missing in Queens, and a significant 22 percent were missing in Brooklyn.

Destination panels were also analyzed for the type of destination information included. NYC Transit bus maps, as well as the electronic front and side panels of NYC Transit buses, list destinations as street intersections and also list the main thoroughfares on which routes operate. However, destinations have been listed either as points of interest or as neighborhoods on the new signposts.

While the TRC finds points of interest to be acceptable destination information, we consider listing neighborhoods as destinations to be neither adequate nor useful. A destination listed as a neighborhood does not provide customers with adequate information to make route selection choices without the aid of a map. Further, when a bus stop is located within the same neighborhood given as a destination, customers have no way of determining from the signage how much farther a route travels before the final stop is reached, or even whether they are futilely waiting to board at the final stop of the route.

Number of Inadequate Destination Panels in Manhattan and Citywide (%)

Problem	Manhattan	Citywide
Total Destination Panels⁵	373 (100%)	525 (100%)
Missing	13 (3%)	<u>28 (5%)</u>
Inaccurate	14 (4%)	14 (3%)
Destination Given as		
-Point of Interest	115 (31%)	154 (29%)
-Neighborhood	245 (66%)	343 (65%)
-Same Neighborhood		
in Which Stop is Located	32 (9%)	61 (12%)

⁵ This figure represents the total number of destination panels which should be installed on the signposts, as calculated from the NYC Transit/NYCDOT master list of new bus stops.

Citywide, 65 percent of destination panels listed only neighborhoods, and 12 percent of destination panels were found in the neighborhood listed on the panels. These percentages are highest in Brooklyn and Queens. In Brooklyn, 71 percent of destination panels listed neighborhoods and 24 percent were located within the neighborhoods they listed. In Queens, 84 percent of destination panels listed neighborhoods, and 39 percent were located in the neighborhoods they listed.

Number of Inadequate Destination Panels Outside Manhattan (%)

Problem	Bronx	Brooklyn	Queens	Staten Island	All Outer Boroughs
Total Destination Panels	40 (100%)	51 (100%)	31 (100%)	30 (100%)	152 (100%)
Missing	2 (5%)	<u>11 (22%)</u>	2 (6%)	0 (0%)	<u>15 (10%)</u>
Inaccurate	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Destination Given as					
-Point of Interest	15 (38%)	4 (8%)	3 (10%)	17 (57%)	39 (26%)
-Neighborhood	23 (58%)	36 (71%)	26 (84%)	13 (43%)	98 (64%)
-Same Neighborhood in Which Stop is Located	4 (10%)	12 (24%)	12 (39%)	1 (3%)	29 (19%)

These route panel deficiencies were widely distributed across the signposts in the survey. Of Manhattan signposts, 4 percent were missing at least one destination panel, 5 percent contained inaccurate destination panels, 73 percent contained at least one panel listing a neighborhood destination, and 12 percent were located in neighborhoods listed on destination panels.

Number of Signposts with Inadequate Destination Panels in Manhattan (%)

Problem	Manhattan
Total Signposts	218 (100%)
Destination Panel Missing	9 (4%)
Destination Panel Inaccurate	11 (5%)
Destination Given as	
-Point of Interest	86 (39%)
-Neighborhood	160 (73%)
-Same Neighborhood in Which Stop is Located	27 (12%)

These percentages rise in the other boroughs, where 12 percent of signposts were missing at least one destination panel. Most of these missing panels occurred in Brooklyn, where a significant 21 percent of signposts were missing at least one destination panel. The highest percentages of signposts containing panels listing neighborhood destinations were found in the Bronx and Queens. In Queens, 94 percent of signposts contained panels listing neighborhood destinations. In the Bronx, 100 percent of signposts contained such panels. Queens and Brooklyn accounted for the

highest percentages of signposts located in neighborhoods listed on destination panels, 44 percent and 29 percent, respectively.

Number of Signposts with Inadequate Destination Panels Outside Manhattan (%)

Problem	Bronx	Brooklyn	Queens	Staten Island	All Outer Boroughs
Total Signposts	13 (100%)	28 (100%)	16 (100%)	11 (100%)	68 (100%)
Destination Panel Missing	2 (8%)	<u>6 (21%)</u>	1 (6%)	0 (0%)	<u>8 (12%)</u>
Destination Panel Inaccurate	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Destination Given as					
-Point of Interest	8 (62%)	4 (14%)	2 (13%)	9 (82%)	23 (34%)
-Neighborhood	13 (100%)	21 (75%)	15 (94%)	9 (82%)	58 (85%)
-Same Neighborhood in Which Stop is Located	2 (15%)	8 (29%)	7 (44%)	1 (9%)	18 (26%)

Examples of Inadequate Destination Panel Information



The above signs, located on **Manhattan's Upper West Side**, list Yorkville as the destination for the eastbound M66 and M72 routes. However, Yorkville, a neighborhood on the Upper East Side, begins at 79th Street, one-quarter mile north of the M72 and fully one-half mile north of the M66. These destination signs should read, simply, Upper East Side. Furthermore, the M66 serves the same Upper East Side hospitals as does the M72.

The sign below left lists West Side as the westbound destination for the M96. The correct destination is Upper West Side.

The sign below right lists Upper East Side as the eastbound destination for the M106 bus, which runs along East 106th Street. However, east of Central Park this bus runs entirely in Harlem.



Unlike the Upper West Side, which extends north to 110th Street, the Upper East Side definitively ends at 96th Street.



These three **Manhattan** signs confuse the neighborhoods of Chelsea and the West Village with each other. However, they are different neighborhoods, separated by West 14th Street. Of the routes listed, *none* terminate in Chelsea, and only one, the M11, passes through the neighborhood.

Furthermore, one of these routes, the M21, does not terminate in either neighborhood. The M21 serves Houston Street, at the southern border of Greenwich Village. However it terminates on Spring Street, in SoHo.

The correct destination panels should read: M8-West Village; M11-West Village; and M21-SoHo.



The **Staten Island** signpost, above left, lists, simply, Manhattan, as the destination of the X17 Express route. However, all Express routes terminate in Manhattan. It would be more useful for customers if this sign listed where in Manhattan this route terminates. In fact, all of the destination panels in this section of examples would be more helpful to customers if they included final street destination information.

The **Manhattan** signpost, above right, lists West Side as the destination of the westbound M86. The correct destination should read Upper West Side. But the signpost is located on the Upper West Side. It would be more helpful for a street destination to be listed.

There is no reason for a signpost in **Manhattan**, above, to include Manhattan on its destination panel. City Hall by itself would suffice.

The signpost at **Seventh Avenue and West 34th Street in Manhattan**, at right, has its destination panels reversed. The M16 serves the Port Authority Bus Terminal. The M34 serves the Javits Center. Further, neither bus serves the 42nd Street Pier.



The signposts in **Downtown Brooklyn**, at left, **Riverdale**, below left, and **Inwood**, below right, list the very neighborhoods in which they are located as destinations on some routes. Customers boarding at these stops know the end of the route is near. But they cannot tell how near. Any of these stops may be the last stop, or the first of many in some large neighborhoods. Such destination panels should list terminal street intersections, and should clearly indicate when they are located at the last stop of a route.



Other Relevant Information

The TRC has been informed by NYC Transit that customers can turn to Guide-A-Ride canisters to find route and destination information which does not appear on the signposts, such as terminal stop street intersections, main thoroughfares on which routes operate, and hours of operation for Limited and Express routes. However, we found that almost half of all signposts in the survey either contained inaccurate Guide-A-Rides, or lacked Guide-A-Rides entirely. Of the inaccurate Guide-A-Rides we found, many contained information for the opposite direction of travel.

NYC Transit policy dictates the installation of a single Guide-A-Ride canister at each stop. Because a Guide-A-Ride canister has only four panels, when more than two routes serve a stop, not all routes can be represented on the Guide-A-Ride by both map and schedule panels. In these instances, information for less heavily used routes becomes limited to a map panel. At stops served by more than four routes, information for less-used routes is left off the Guide-A-Ride entirely.

However, we found isolated examples of signposts serving multiple routes which contained more than one Guide-A-Ride. Therefore, we judged a signpost to contain an accurate Guide-A-Ride only if each route serving the stop was represented by at least a map panel, even if doing so would necessitate *two* Guide-A-Ride canisters. Ideally, however, the use of multiple Guide-A-Rides should allow both map and schedule panels for all routes.

Number of Signposts with Guide-A-Ride and Obstruction Problems In Manhattan (%)

Problem	Manhattan
Total Signposts	218 (100%)
-Missing or Inaccurate Guide-A-Ride	<u>87 (40%)</u>
-Obstructed by Other Signage or Trees or Obstructing Other Signage	9 (4%)

We found that both 40 percent of Manhattan signposts and 40 percent of signposts in the other boroughs did not contain accurate Guide-A-Rides. This percentage was highest in Brooklyn, where a significant 46 percent of signposts contained an inaccurate Guide-A-Ride, or lacked one entirely.

We also found that 4 percent of Manhattan and Brooklyn signposts and 6 percent of Queens signposts were sited too close to trees or other street signage. NYCDOT performed much of the installation work on the new signposts during winter, when adjacent trees were bare. However, during summer, we found several signposts partially or entirely obscured by the leaves of nearby trees. In some instances, we found signposts installed within two or three feet of trees.

We were even more surprised to find that NYCDOT had installed some signposts in locations which obscured other street signage including street signs, emergency information signs, and, in

one case, a traffic signal. In each of these instances, when viewed from the opposite side, the bus stop signposts were themselves obscured by the signage next to which they were too closely installed.

Number of Signposts with Guide-A-Ride and Obstruction Problems Outside Manhattan (%)

Problem	Bronx	Brooklyn	Queens	Staten Island	All Outer Boroughs
Total Signposts	13 (100%)	28 (100%)	16 (100%)	11 (100%)	68 (100%)
-Missing or Inaccurate Guide-A-Ride	<u>5 (38%)</u>	<u>13 (46%)</u>	<u>5 (31%)</u>	<u>4 (36%)</u>	<u>27 (40%)</u>
-Obstructed by Other Signage or Trees or Obstructing Other Signage	0 (0%)	1 (4%)	1 (6%)	0 (0%)	<u>2 (3%)</u>

According to NYC Transit policy, stops along routes which contain Local and Limited service should contain blue Local route signs at Local stops and purple Limited route signs at Limited stops. Under these guidelines, we found 14 percent of route panels along routes with Limited service to be inaccurately color coded. In some instances, we found only purple Limited signs installed at Local stops. In others, we found only blue Local signs installed at Limited stops.

However, the TRC finds the current color-coding policy to be inadequate. Most routes with Limited service contain a segment where both Locals and Limiteds make all stops. Further, Locals stop at all Limited stops. The current color-coding policy gives no indication to customers that either of these service patterns occurs.

Number of Incorrectly Color-Coded Limited Route Panels (%) ⁶

Problem	Brooklyn	Manhattan
Total Limited Route Panels	3 (100%)	86 (100%)
Incorrectly Color-Coded	0 (0%)	12 (14%)

The TRC has also been informed by NYC Transit that Hours-of-Operation information need not be included on destination panels for Limited or Express routes, again because customers can turn to Guide-A-Rides for this information. However, as we report above, two out of five signposts citywide do not contain accurate Guide-A-Rides.

Limited and Express routes operate only during certain hours, and, in the case of some Express routes, travel along different streets serving different stops during off-peak hours. Thus, it is essential to include Hours-of-Operation information on the signs. We did not find, nor did we expect to find, any such information on destination panels for NYC Transit Express routes.

⁶ Note that no Limited routes appeared in the survey from the Bronx, Queens, or Staten Island.

However, we were surprised to find Hours-of-Operation information listed legibly on a significant 53 percent of the destination panels for NYCDOT contract carrier Express routes which served some of the new signposts in the survey.

Number of NYC Transit Express Route Destination Panels Listing Hours-of-Operation Information (%)⁷

Problem	Manhattan	Staten Island
Total NYC Transit Express Route Destination Panels	7 (100%)	3 (100%)
Listing Hours of Operation	0 (0%)	0 (0%)

Number of NYCDOT Contract Carrier Express Route Destination Panels Listing Hours-of-Operation Information (%)⁸

Problem	Manhattan
Total NYCDOT Contract Carrier Express Route Destination Panels	15 (100%)
Listing Hours of Operation	<u>8 (53%)</u>

⁷ It is not the policy of NYC Transit to list Hours-of-Operation information on Express route destination panels. These findings are reported here for comparison with NYCDOT contract carrier figures. Note that no NYC Transit Express routes appeared in the survey from the Bronx, Brooklyn, or Queens.

⁸ Note that no NYCDOT contract carrier Express routes appeared in the survey from the Bronx, Brooklyn, Queens, or Staten Island.

Examples of Other Signage Deficiencies



Why does the woman at left appear confused? Perhaps because the bus stop at which she is standing contains an empty Guide-A-Ride canister (above). The signpost, at the corner of **Fifth Avenue and West 26th Street in Manhattan**, is also missing route and destination panels for the NYCDOT contract carrier BxM11.



The Guide-A-Ride schedule at left, from a signpost at **Decatur Street and Bushwick Avenue in Brooklyn** (right), is illegible due to graffiti.





The M5 sign on **Riverside Drive**, above left, is a Limited route sign, but all service on Riverside Drive is Local. Above right, all route information panels are missing from another M5 Riverside Drive signpost.

Following NYC Transit guidelines, the signpost at **Central Park South and Columbus Circle**, below left, lists only Limited service at this M5 route Limited stop, thus customers have no way to discern that M5 Local service is available here weekday evenings and weekends. Meanwhile, the signpost at **Second Avenue and East 42nd Street**, below right, incorrectly lists only Local M15 service at a Limited stop served by both types of service.





Both of these Express route signposts are in **Manhattan**. The signpost on the left lists NYC Transit Express routes and follows the NYCT policy of not including Hours-of-Operation information on destination panels. However, Express routes run only during certain hours, and some of them make different stops at different times of day. The more useful signpost on the right lists NYCDOT contract carrier Express routes and does contain Hours-of-Operation information.



The signpost at left, at the corner of **Broadway and Cortlandt Street in Manhattan**, is misplaced 15 feet from the actual bus stop location, on the other side of a telephone booth. Its Guide-A-Ride cannot be easily or safely read because the location of the signpost, wedged between telephone booth, streetlamp, and curb, obscures one side of the Guide-A-Ride and forces customers to stand in oncoming traffic to read another. The signpost also obscures the Broadway street sign.

The signpost at right, in the **86th Street Transverse in Central Park**, is blocking a traffic signal. Its destination is also incorrect. The westbound M86 goes to the Upper West Side.





The signposts at **Lexington Avenue and East 118th Street in Harlem**, above left, **Third Avenue and East 72nd Street on the Upper East Side**, above right, and **Jamaica Avenue and 147th Place in Jamaica, Queens**, below left, all block street signage, and are obstructed by this same signage from the opposite side.

The signpost below right is on **West 42nd Street near the corner of Ninth Avenue**. It was installed in winter too close to a tree. Now that the tree has bloomed, the signpost is all but invisible.



Conclusions and Recommendations

While the TRC supports the new bus stop signage program, we believe that the signposts have a long way to go before they can be truly useful to the riding public. As a result of our findings, we recommend that **NYC Transit** address the following concerns:

Immediate Inspection

Among the worst problems we found were signposts missing destination panels, containing incorrect panels or Guide-A-Rides, or installed in improper locations. NYC Transit should not overly rely on public complaints regarding the signposts to find out about problems. All currently installed signposts should be immediately inspected by NYC Transit to ensure accuracy and adequate placement, with necessary repair and correction requests forwarded to NYCDOT.

Oversight of Installation and Repair

Furthermore, NYC Transit should ensure the accuracy of signpost location and travel information before it is provided to NYCDOT. Immediately after installation, NYC Transit should inspect signposts to ensure they are correctly located and contain accurate information panels and Guide-A-Rides. Thereafter, NYC Transit should make periodic scheduled inspections to ensure the signposts remain in a good state of repair.

Location Panels

While most location panels we surveyed were correct, we did uncover systemic inaccuracies at signposts installed along Fifth Avenue next to Central Park, which listed west streets on their location panels. However, above 59th Street, the west side begins at Central Park West, not at Fifth Avenue. Further, the transverse roadways which cross the park between Fifth Avenue and Central Park West carry neither 'east' nor 'west' in their names. Therefore, these signposts should be amended to list either east streets or transverse roadways on their location panels, as necessary.

Destination Panels

As we explain, neighborhoods are insufficient destination information when listed by themselves. NYC Transit should expand the information currently contained on neighborhood destination panels to also list the information contained on the electronic front and side panels of buses. This information includes the street intersection of the final stop along a route and, if space permits, the main street via which the route operates.

Further, destination panels located at the last stop of a route should indicate that it is the final stop so that customers will not wait to board. In those instances where the final stop in one direction also serves as the first boarding point for customers travelling in the return direction, the destination panel should list the return destination to avoid customer confusion.

The agency should also correct the systemic inaccuracies we found on destination panels in Manhattan to reflect the correct neighborhoods which the following routes serve: M8; M11; M22; M66; M72; M86; M96; and M106.

Guide-A-Rides

Many of the stops we surveyed lacked Guide-A-Rides. Of the Guide-A-Rides we did find, many did not contain travel information for all routes serving the stops at which they were located. Others listed information for the opposite direction of travel.

NYC Transit should speed the provision of Guide-A-Rides for all stops, citywide. Further, Guide-A-Rides should contain both a map and a schedule for every route serving the stops at which they are located, even if this means installing multiple Guide-A-Rides. Space exists on the signposts to do so, and we found isolated examples of multiple Guide-A-Rides during the survey.

Route Panel Color-Coding for Limited Service

The current policy governing the signage at stops along routes with Limited service is unhelpful. Current signage gives customers no way to discern that, along the same route, Limiteds make all stops along Local-only portions of a route, or that Locals stop at all Limited stops, because, in both instances, only one route sign is installed.

NYC Transit should provide a separate route panel for Limited and Local service when both serve the same stop. Moreover, Hours-of-Operation information should appear on the destination panels of each (please see below).

Hours-of-Operation for Express and Limited Service

NYC Transit should revise its signage policy to include Hours-of-Operation information on the destination panels of Express and Limited Routes. Many of these routes operate only part-time and some serve different stops at different times of day. However, destination panels serving Express routes operated by NYCDOT-licensed private carriers which we surveyed easily listed destination and hours information on one panel. There is no reason NYC Transit cannot follow suit.

We further recommend that **NYCDOT** address the following concerns:

Installation

Many of the problems we found were not due to inaccurate information provided to NYCDOT by NYC Transit, but instead due to careless installation by NYCDOT. NYCDOT should redouble its efforts to ensure that the signposts it installs are correctly located, contain the travel information panels and Guide-A-Rides meant for them, and neither are obscured by trees or other street signage, nor obscure other street signage.

Repair

Although NYC Transit forwards repair and correction requests to NYCDOT within 24 to 48 hours, NYCDOT policy allows 25 business days for repairs to be completed. While NYCDOT averages a week to ten days to complete repairs in Manhattan, repairs in the other boroughs take closer to the full five weeks allotted. Given that installation will commence for the entire boroughs of Brooklyn and Staten Island in January 1999, we would like NYCDOT to ensure that, in the future, signposts in the outer boroughs receive the same prompt attention that Manhattan signposts currently receive.

Appendix A

List of Bus Stops Surveyed with Problems Found

Following is a list of the bus stops surveyed by the TRC, their locations, as provided by NYC Transit/NYCDOT, and the problems we found at each. Location information includes the primary or key route which serves each stop, the specific identification number of each stop along its key route, the direction of travel along the key route, the specific street intersection of the stop, and whether the stop is located midblock (M), or at the near (N) or far (F) corner of the intersection. Problems are each assigned a letter, given in the key, below.

KEY FOR PROBLEMS FOUND

- A Missing Signpost
- B Signpost in Wrong Location
- C Missing or Incorrect Location Panel
- D Signpost in Poor State of Repair
- E Route Panels Missing
- F Route Panels Inaccurate
- G Destination Panels Missing
- H Destination Panels Inaccurate
- I Destination Listed Same as Neighborhood in which Stop is Located
- J Incorrect Limited Route Panel Color-Coding
- K Inaccurate or Missing Guide-A-Ride
- L Obstruction Problem
- M Bare Signpost--All Panels Missing

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
14	NB	WHITE PLAINS RD	STORY AV	F	
25	NB	BROADWAY	W 228 ST	F	I
30	NB	WILLIAMSBRIDGE RD	EASTCHESTER RD	N	
10	NB	E FORDHAM RD	HOFFMAN ST	N	
11	NB	E FORDHAM RD	BATHGATE AV	F	G K
16	NB	E KINGSBRIDGE RD	MORRIS AV	F	K
17	NB	E KINGSBRIDGE RD	GRAND CONCOURSE	N	K
28	SB	SEDGWICK AV	STEVENSON PL	F	
38	NB	3 AV	E TREMONT AV	F	
16	EB	WEBSTER AV	NEREID AV	N	
9	WB	ASCH LOOP	BARTOW AV	F	I K
11	EB	E 167 ST	GRAND CONCOURSE	N	
5	NB	GRAND CONCOURSE	E 156 ST	F	
59	NB	70 ST	7 AV	N	C
69	NB	SHORE RD	71 ST	F	I
8	EB	AV R	NOSTRAND AV	N	C G
6	EB	STILLWELL AV	85 ST	F	K
41	EB	AV U	E 59 ST	F	K
5	EB	BAY PKWY	BATH AV	N	K
30	EB	BEDFORD AV	AV J	F	C G K
76	EB	ASHFORD ST	WORTMAN AV	F	I
3	WB	ASHFORD ST	LINDEN BLVD	F	
69	WB	BAY PKWY	65 ST	F	
4	NB	KINGS HWY	BEDFORD AV	N	C G K
8	WB	FLATBUSH AV	FLATLANDS AV	F	G
61	SB	LINDEN BLVD	EUCLID AV	F	I
4	SB	UTICA AV	EMPIRE BLVD	N	
44	NB	DECATUR ST	BUSHWICK AV	F	I K
36	EB	MARCY AV	METROPOLITAN AV	F	I K
17	WB	FULTON ST	NEW YORK AV	F	C D E G M
32	WB	FULTON ST	HUDSON AV	N	I K
12	WB	SHEEPSHEAD BAY RD	E 16 ST	F	G K
51	NB	FLATBUSH AV	PACIFIC ST	F	

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
5	SB	MANHATTAN AV	JAVA ST	F	
36	WB	FLATBUSH AV	ATLANTIC AV	F	
14	NB	CLASSON AV	GREENE AV	F	
38	NB	JAY ST	TILLARY ST	F	I K
22	NB	CONEY ISLAND AV	KINGS HWY	N	K
29	NB	CONEY ISLAND AV	AV J	F	
10	SB	CONEY ISLAND AV	CHURCH AV	F	
14	EB	VAN SINDEREN AV	FULTON ST BAY 3	N	B K
1	EB	ALLEN ST	DELANCEY ST	N	
9	WB	LAFAYETTE ST	LEONARD ST	F	I
9	EB	E 23 ST	2 AV	F	I K
13	EB	PARK ROW	BEEKMAN ST	N	K
34	WB	VESEY ST	CHURCH ST	M	K
46	WB	1 AV	E 57 ST	F	M
5	EB	W 155 ST	AMSTERDAM AV	F	
33	WB	W 155 ST	BROADWAY	N	K
20	SB	BROADWAY	W 218 ST	F	I K
23	SB	BROADWAY	W 212 ST	M	C D E G
34	SB	BROADWAY	W 181 ST	F	I
2	EB	W 207 ST	SHERMAN AV	F	H
1	SB	W 181 ST	BROADWAY	F	H K
31	SB	2 AV	E 126 ST	N	K
37	SB	W 125 ST	5 AV	F	
47	SB	W 125 ST	12 AV	N	K
6	NB	W 145 ST	ST NICHOLAS AV	N	
38	SB	W 145 ST	ADAM C POWELL BLVD	N	C D E G K M
5	EB	W 135 ST	5 AV	F	
17	WB	E 135 ST	MADISON AV	F	I
2	NB	3 AV	E 41 ST	N	K
5	NB	3 AV	E 64 ST	N	K
9	NB	3 AV	E 91 ST	F	L K
26	SB	LEXINGTON AV	E 42 ST	F	I K

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
1	NB	MADISON AV	E 37 ST	N	K
16	SB	5 AV	W 51 ST	N	K
18	SB	5 AV	W 26 ST	F	E G K
6	NB	6 AV	W BROADWAY	F	K
20	SB	5 AV	W 94 ST	F	C L K
24	SB	5 AV	W 62 ST	F	C K
25	SB	5 AV	W 55 ST	F	K
2	NB	MADISON AV	E 36 ST	F	D K
5	NB	MADISON AV	E 59 ST	F	K
6	NB	VESEY ST	BROADWAY	N	J
14	NB	LAFAYETTE ST	SPRING ST	N	
23	NB	UNION SQ E	E 15 ST	F	
31	NB	PARK AV S	E 31 ST	F	D
32	NB	PARK AV S	E 33 ST	N	
39	NB	MADISON AV	E 48 ST	N	D K
41	NB	MADISON AV	E 53 ST	N	D K
46	NB	MADISON AV	E 65 ST	F	L K
3	SB	LENOX AV	W 142 ST	F	
10	SB	5 AV	W 130 ST	F	
19	SB	5 AV	W 112 ST	F	
20	SB	5 AV	W 109 ST	C M	
25	SB	5 AV	W 98 ST	C F	K
38	SB	5 AV	W 66 ST	C F	
52	SB	PARK AV S	E 35 ST	F	
61	SB	BROADWAY	E 12 ST	F	K
64	SB	BROADWAY	WAVERLY PL	F	E I J K
77	SB	BROADWAY	FULTON ST	N	
78	SB	BROADWAY	CORTLANDT ST	N	L
80	SB	BROADWAY	RECTOR ST	N	
3	NB	E 9 ST	BROADWAY	F	J K
5	NB	UNIVERSITY PL	E 12 ST	F	
52	NB	ADAM C POWELL BLVD	W 116 ST	F	

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
58	NB	ADAM C POWELL BLVD	W 129 ST	F	L
59	NB	ADAM C POWELL BLVD	W 131 ST	F	
17	SB	ADAM C POWELL BLVD	W 142 ST	F	
32	SB	CENTRAL PARK N	LENOX AV	F	J K
62	NB	ST NICHOLAS AV	W 137 ST	N	
64	NB	ST NICHOLAS AV	W 141 ST	M	
84	NB	ST NICHOLAS AV	W 193 ST	N	I K
20	SB	ST NICHOLAS AV	W 145 ST	F	
28	SB	ST NICHOLAS AV	W 125 ST	F	
30	SB	MANHATTAN AV	W 122 ST	F	
70	NB	BROADWAY	W 167 ST	N	J
12	SB	FT WASHINGTON AV	W 172 ST	F	
21	SB	BROADWAY	W 152 ST	F	J
27	SB	BROADWAY	W 138 ST	F	
36	SB	BROADWAY	W 114 ST	F	K
37	SB	BROADWAY	W 112 ST	F	
2	NB	W HOUSTON ST	SULLIVAN ST	F	C D E G M
9	NB	6 AV	W 17 ST	F	B K L
21	NB	6 AV	W 49 ST	F	K
34	NB	W 72 ST	WEST END AV	F	
35	NB	RIVERSIDE DR	W 74 ST	F	J
36	NB	RIVERSIDE DR	W 77 ST	F	J
38	NB	RIVERSIDE DR	W 82 ST	F	
45	NB	RIVERSIDE DR	W 103 ST	N	B J
50	NB	RIVERSIDE DR	W 116 ST	F	J
51	NB	RIVERSIDE DR	W 119 ST	F	J
51	SB	CENTRAL PARK S	COLUMBUS CIRCLE	F	
8	SB	BROADWAY	W 43 ST	N	
14	SB	BROADWAY	W 28 ST	N	
2	NB	W 14 ST	5 AV	F	I

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
31	NB	AMSTERDAM AV	W 79 ST	F	
36	NB	AMSTERDAM AV	W 91 ST	F	
52	NB	W 116 ST	ADAM C POWELL BLVD	F	
7	SB	LENOX AV	W 132 ST	F	K
38	SB	COLUMBUS AV	W 69 ST	F	K
8	WB	E 9 ST	3 AV	N	H K
3	NB	VESEY ST	WEST ST	F	
9	NB	E BROADWAY	FORSYTH ST	N	K
13	NB	CLINTON ST	GRAND ST	N	K
4	SB	E 14 ST	2 AV	F	K
6	SB	E 14 ST	AV A	N	
18	SB	ESSEX ST	E BROADWAY	N	
22	SB	PARK ROW	WORTH ST	F	K
29	SB	WEST ST	VESEY ST	M	K
43	NB	CENTRAL PARK W	W 77 ST	F	
60	NB	FRED DOUGLAS BLVD	W 111 ST	F	I
61	NB	FRED DOUGLAS BLVD	W 113 ST	F	I
3	SB	FRED DOUGLAS BLVD	W 154 ST	F	
8	SB	FRED DOUGLAS BLVD	W 142 ST	F	
12	SB	FRED DOUGLAS BLVD	W 133 ST	F	
19	SB	FRED DOUGLAS BLVD	W 114 ST	F	K
21	SB	FRED DOUGLAS BLVD	CATHEDRAL PKWY	N	
32	SB	CENTRAL PARK W	W 86 ST	F	
33	SB	CENTRAL PARK W	W 84 ST	F	
34	SB	CENTRAL PARK W	W 81 ST	F	
47	SB	BROADWAY	W 55 ST	F	
50	SB	BROADWAY	W 47 ST	F	
70	SB	7 AV S	WAVERLY PL	F	K
45	NB	AMSTERDAM AV	W 114 ST	F	K
49	NB	AMSTERDAM AV	W 123 ST	F	
50	NB	AMSTERDAM AV	LA SALLE ST	F	
59	NB	RIVERSIDE DR	W 137 ST	F	J

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
18	SB	AMSTERDAM AV	W 114 ST	F	H
22	SB	COLUMBUS AV	W 108 ST	F	H
42	SB	9 AV	W 55 ST	F	H
50	SB	9 AV	W 35 ST	N	H
32	EB	E 14 ST	AV C	N	I
36	EB	AV D	E 8 ST	F	I
2	WB	AV C	E 11 ST	N	
4	WB	DELANCEY ST	COLUMBIA ST	N	
7	WB	AV D	E 5 ST	F	
40	WB	W 14 ST	9 AV	N	I K
4	NB	WORTH ST	CENTRE ST	F	K
6	NB	PETER MINUET PLAZA	SOUTH FERRY	N	K L
10	NB	WATER ST	FLETCHER ST	N	K
11	NB	PEARL ST	BEEKMAN ST	N	K
14	NB	ST JAMES PL	MADISON ST	F	K
17	NB	PIKE ST	DIVISION ST	N	K
18	NB	ALLEN ST	CANAL ST	F	K
19	NB	ALLEN ST	GRAND ST	F	K
21	NB	ALLEN ST	STANTON ST	F	K
25	NB	1 AV	ST MARKS PL	F	
3	SB	2 AV	E 122 ST	F	
6	SB	2 AV	E 113 ST	F	
19	SB	2 AV	E 82 ST	F	
27	SB	2 AV	E 64 ST	F	K
29	SB	2 AV	E 57 ST	F	
34	SB	2 AV	E 44 ST	F	
37	SB	2 AV	E 36 ST	F	K
38	SB	2 AV	E 34 ST	F	B K
43	SB	2 AV	E 20 ST	F	K
44	SB	2 AV	E 17 ST	F	K
51	SB	ALLEN ST	E HOUSTON ST	F	
62	SB	WATER ST	JOHN ST	F	K
16	WB	W 43 ST	8 AV	F	K L

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
17	NB	CONVENT AV	W 141 ST	N	
12	EB	E HOUSTON AV	MOTT ST	F	B L
21	EB	AV C	E 7 ST	F	D
24	EB	AV C	E 14 ST	N	I
19	WB	E HOUSTON AV	1 AV	N	H
7	EB	FRANKFORT ST	GOLD ST	F	I K
10	EB	MADISON ST	ST JAMES PL	F	I
13	EB	MADISON ST	MARKET ST	F	D I K
19	EB	MADISON ST	GOVERNEUR ST	F	I
5	EB	W 23 ST	8 AV	F	F
12	WB	W 23 ST	6 AV	F	K
15	EB	E 72 ST	2 AV	N	H K
13	WB	5 AV	W 58 ST	F	
16	NB	E 57 ST	SUTTON PL	N	I K
17	NB	SUTTON PL	SUTTON SQ	F	
24	NB	YORK AV	E 76 ST	F	
25	NB	YORK AV	E 79 ST	F	I K
2	SB	YORK AV	E 91 ST	F	K
13	SB	YORK AV	E 64 ST	F	
2	EB	JAVITS CTR INT RD	JAVITS CTR #2	M	
3	EB	W 34 ST	11 AV	N	
13	WB	W 34 ST	9 AV	N	G
14	WB	W 34 ST	DYER ST	F	
3	EB	12 AV	W 42 ST	N	
12	WB	W 42 ST	8 AV	F	K
13	WB	W 42 ST	9 AV	F	D E G K L M
15	WB	WEST END AV	W 61 ST	N	I
1	EB	BROADWAY	W 106 ST	F	
6	EB	W 65 ST	BROADWAY	F	H
7	WB	E 67 ST	MADISON AV	N	H
13	EB	E 79 ST	1 AV	F	I K L
5	EB	W 86 ST	CENTRAL PARK W	N	K

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
6	EB	W 86 ST TRANSVERSE	W 86 ST TRANSVERSE	N	
19	EB	YORK AV	YORK AV	F	I
13	WB	W 86 ST TRANSVERSE	W 86 ST TRANSVERSE	N	K
5	NB	3 AV	E 67 ST	F	
6	NB	3 AV	E 72 ST	F	
18	NB	AMSTERDAM AV	W 138 ST	F	
51	NB	BROADWAY	W 220 ST	F	
7	NB	3 AV	E 26 ST	F	
74	NB	AMSTERDAM AV	W 171 ST	F	
76	NB	AMSTERDAM AV	W 175 ST	F	
78	NB	AMSTERDAM AV	W 179 ST	F	
80	NB	AMSTERDAM AV	W 184 ST	F	I K
3	SB	AMSTERDAM AV	W 186 ST	N	
44	SB	LEXINGTON AV	E 118 ST	F	K
79	SB	LEXINGTON AV	E 77 ST	F	
104	SB	3 AV	E 14 ST	F	I
105	SB	3 AV	E 11 ST	F	I K
5	NB	BOWERY	HESTER ST	N	C D E G M
61	SB	PARK ROW	BEEKMAN ST	F	K
32	NB	BROADWAY	W 91 ST	F	
34	NB	BROADWAY	W 96 ST	F	
26	SB	BROADWAY	W 82 ST	F	
3	WB	E 106 ST	1 AV	F	
6	WB	E 106 ST	LEXINGTON AV	F	K
1	EB	12 AV	W 42 ST ISLAND	N	A C D E G K
2	EB	12 AV	W 43 ST	F	
3	WB	E 49 ST	2 AV	F	
4	WB	E 49 ST	3 AV	F	
33	SB	E 60 ST	3 AV	F	A C D E G J L
6	EB	E 57 ST	MADISON AV BAY 3	N	D K
5	EB	MADISON AV	E 38 ST	F	K

STOP #	DIRECTION	LOCATED ON	AT INTERSECTION OF	CORNER	PROBLEMS
9	SB	5 AV	W 27 ST	N	D J K
3	SB	BROADWAY	WARREN ST	N	JK
6	SB	BROADWAY	EXCHANGE ALLEY	F	JK
4	EB	MADISON AV	E 29 ST	N	JK
9	SB	67 AV	60 ST	N	
26	SB	CYPRESS AV	PALMETTO ST	F	
27	EB	94 ST	DITMARS BLVD	N	C D E G K M
7	EB	HILLSIDE AV	178 ST	N	I
36	WB	ARCHER AV	165 ST	N	I
19	WB	BELL BLVD	NORTHERN BLVD	N	I K
5	NB	UNION ST	33 AV	N	K
16	SB	PARSONS BLVD	WILLETS PT BLVD	N	I L
16	WB	LIBERTY AV	MERRICK BLVD	F	I
13	EB	23 AV	92 ST	F	
64	EB	JAMAICA AV	144 PL	N	I
65	EB	JAMAICA AV	147 PL	N	I
25	NB	FRANCIS LEWIS BLVD	HORACE HARDING EXP	N	K
20	NB	FRANCIS LEWIS BLVD	116 AV	F	
51	SB	SPRINGFIELD BLVD	S CONDUIT AV	F	
32	WB	BAISLEY BLVD	MERRILL ST	F	K
17	NB	ARTHUR KILL RD	GIFFORDS LANE	F	
11	SB	ARTHUR KILL RD	ANNADALE RD	N	
56	NB	WILLOWBROOK RD	COLLEGE AV	F	
66	NB	PORT RICHMOND AV	ALBION PL	N	
17	SB	WATCHOGUE RD	CRYSTAL RD	F	K
56	NB	RICHMOND AV	ROCKLAND AV	F	K
34	SB	YUKON AV	RICHMOND AV	F	D I K
10	WB	VICTORY BLVD	FOREST AV	F	E
67	NB	RICHMOND RD	MIDLAND AV	F	K L
27	SB	RICHMOND RD	TARGEE ST	N	
38	SB	HYLAN BLVD	BUEL AV	F	

Appendix B
Margins of Error

Statistically significant results are highlighted in the body of this report. These results represent conditions present in the total population of bus stops or signage panels installed in a given area with 95 percent accuracy, within a certain margin of error. The determination of a margin of error depends upon sample size. Some of the sample sizes in the survey were too small for any results to be significant--in these cases, margins of error exceeded 100%. In all other instances, results which were not found to be significant were those which were exceeded by their margins of error.¹ These margins of error are reported below.

Signpost Data

Manhattan	± 7%
Other Boroughs	± 1%
Bronx	±11%
Queens	±10%
Brooklyn	±18%
Staten Island	±12%

Route and Destination Panel Data

Citywide	± 4%
Manhattan	± 5%
Other Boroughs	± 8%
Bronx	±15%
Queens	±18%
Brooklyn	±14%
Staten Island	±19%

Limited Route Panel Data

Manhattan	±10%
Brooklyn	sample size too small

Express Route Destination Panel Data

Manhattan (NYC Transit)	±46%
Manhattan (NYCDOT private bus operators only)	±28%
Staten Island	sample size too small

¹ For example, if 10 percent of the signage panels in a given borough are found to be incorrect, but the margin of error associated with signage panels within the borough is 15 percent, the results cannot be said to be statistically significant.

Appendix C
Survey Form

TRC BUS STOP SIGNAGE SURVEY FORM ()

Please fill out all the information as it appears on the sign. If any information is missing from the sign, just leave that entry blank.

1. Enter the "PCAC CODE #" for this stop: _____

2. Enter the bus stop location exactly as it appears on the sign:

3. Is the sign in good repair (not leaning, defaced, missing, etc.)?

Circle one: Yes No

Comments (if any):

4. Please fill out one line of the chart below for each route listed on the sign:

<i>Routes Listed</i>	<i>Route Sign Color¹ Circle One:</i>	<i>Destination Exactly as Listed on Sign</i>	<i>Hours/Days of Operation (if Listed on Sign, NOT Guide-A-Ride)</i>
	B P G		
	B P G		
	B P G		
	B P G		
	B P G		

5. Is there a "Guide-A-Ride" present?

Circle one: Yes No

If 'Yes', what routes does it list? _____

¹ *Route Sign Colors: **Blue**, **Purple**, **Green**.*