



September 6, 2011

Honorable Daniel L. Squadron
401 Broadway, Suite 1901
New York, NY 10013

Re: **L** and **F** Service

Dear Senator Squadron:

This is in response to your letter of July 1, 2011, requesting that MTA New York City Transit undertake a comprehensive review of Canarsie **L** Line performance, similar to the 2009 **F** Line review. In addition, you asked us to adjust weekend **F** and **L** schedules due to high ridership on weekends on the Lower East Side and in Brooklyn.

Unlike the situation with the **F** Line 2 years ago, in which NYCT had not undertaken a comprehensive analysis of that line for several years, the **L** Line is one of the most studied lines at NYCT. This is for two reasons:

- (1) Significant ridership growth on the Canarsie line starting in the late 1990's.
- (2) The pilot installation of NYCT's new standard for signal systems, Communications-Based Train Control (CBTC), on the **L** line.

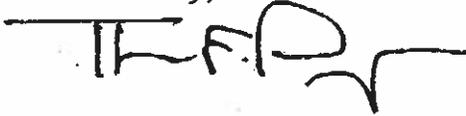
As a result, a new, comprehensive review of **L** Line performance is not necessary; instead, in the attached summary, we will share with you some of our ongoing work regarding **L** operation and service, as well as address your concerns about weekend schedules on the **F** and **L**.

In terms of next steps, we are looking at the possibility of increasing rush hour **L** service next year, after CBTC has been cut over into its final configuration later this year. We are also looking into the possibility of adding weekend service on the **L**; however, for reasons we explain in the attached summary, we do not anticipate any increase in weekend service on the **F** in the near future.

Honorable Daniel Squadron
September 6, 2011
Page 2

If you have any questions, please call Lois Tandler, Vice President, Government and Community Relations, at (646) 252-2660.

Sincerely,

A handwritten signature in black ink, appearing to read 'TFP', with a horizontal line extending to the left and a flourish at the end.

Thomas F. Prendergast
President

Enclosure

cc: C. Bianco
P. Cafiero
L. Tandler
H. Ring

September 6, 2011

Ⓛ and ⓕ Issues Summary

This document summarizes recent and ongoing analytical work regarding Ⓛ service, as well as addresses weekend and late night ridership issues for the Ⓛ and ⓕ lines in the East Village, Lower East Side, and Brooklyn.

Ⓛ Ridership

Canarsie Line ridership has grown considerably over the past several years, exceeding growth on the subway system as a whole. Since 1998, average weekday Ⓛ ridership has grown by 93%, while average weekend Ⓛ ridership (Saturday and Sunday combined) has grown by 141%. In comparison, over the same period, systemwide average weekday and average weekend ridership grew by 30% and 53% respectively.

In response to this growth in ridership, NYCT has added service on the Ⓛ on both weekdays and weekends, as shown in the following table. The following table shows year-by-year average weekday and average two-day weekend Ⓛ ridership and service levels from 1998 through 2010.

Ⓛ Canarsie Line Ridership and Service Levels -- 1998 -- 2010

Year	Number of Trips Scheduled* and Ridership [†]						
	Average Weekday			Average Saturday		Average Sunday	
	Daily Trips	Peak TPH [‡]	Ridership	Daily Trips	Ridership	Daily Trips	Ridership
1998	292	12	68,104	244	40,742	212	29,927
1999	292	13	75,552	244	46,772	212	34,011
2000	348	15	83,411	274	51,092	226	38,421
2001	382	15	90,618	350	55,528	258	41,876
2002	384	15	95,317	350	59,186	258	45,079
2003	384	15	94,634	350	50,425	258	38,610
2004	400	15	97,057	350	56,272	258	43,415
2005	400	15	100,852	350	51,657	258	40,471
2006	400	15	103,944	350	51,023	258	39,511
2007	444	17	112,606	410	70,490	328	53,509
2008	452	17	122,175	410	80,916	326	62,704
2009	452	17	124,101	410	79,021	326	62,660
2010**	444	17	131,637	386	95,280	322	74,972
% Change 1998-2010	52%	42%	93%	58%	134%	52%	151%

* Daily Trips refers to the number of one way trips in the base timetable in effect at the end of the year.

† Ridership is measured by turnstile registrations (station entries), excluding transfer stations.

‡ Peak TPH refers to the "trains per hour" scheduled to operate in the peak direction during the peak hour.

** The decline in the number of trips in 2010 reflects revised off-peak loading guidelines, per the 2010 service reductions.

Sources: Subway Timetables, NYCT Div. of Operations Planning; Turnstile Registrations, NYCT OMB

Since 1998, NYCT has increased Ⓛ peak hour service levels by more than 40% from 12 to 17 trains per hour in the peak direction. Seventeen trains per hour is the current maximum practical capacity of the Canarsie line, because the Communications-Based Train Control (CBTC) system installed on that line is not yet in its final configuration, as discussed below.

In response to growth during the shoulder periods on either side of the peak hour, we have also added service and are continuing to do so. In December 2011, we will add one more late morning shoulder roundtrip between 9:00 and 9:30 a.m., which will bring passenger loads on trains to Manhattan from 101% of the rush hour guideline to 89%.

Overall, weekday service is up over 50% since 1998, while service on Saturdays and Sundays is up 58% and 52%, respectively. Increases in service levels are less than the increases in ridership, because, during most off-peak periods, there was room onboard 7 trains able to absorb some of the ridership growth before NYCT's loading guidelines required scheduling additional service.

Changes in service frequencies are based on NYCT loading guidelines.¹ To determine the frequency of service, NYCT undertakes traffic checks at the peak load points. For the 7 line, the rush hour peak load points are Bedford Avenue and 1st Avenue heading towards Manhattan in the morning and 3rd Avenue and 1st Avenue heading towards Canarsie in the afternoon.

Morning Manhattan-bound 7 ridership through the peak load points has increased significantly in recent years. The table below shows 7 average ridership compared to the NYCT peak load guideline of 1,160 riders per train on the 7 during the morning peak hour since 1998. Despite increases in rush hour service, ridership continues to exceed NYCT's passenger loading guideline in the morning peak hour, after dipping in 2009 as result of the recession. (As noted above, more morning rush hour service cannot yet be scheduled until after CBTC is in its final configuration.) Afternoon peak hour 7 service has also increased significantly, but remains within NYCT's loading guidelines.

Manhattan-bound 7 AM Peak Hour Average Passenger Loads

Year	Peak Load Point*	Scheduled Trains per Hour	Riders	Percent of Guideline
1998	Bedford Av	12	16,004	115%
1999	Bedford Av	13	15,948	106%
2000	Bedford Av	13	20,174	134%
2001	Bedford Av	15	19,317	111%
2002	Bedford Av	15	17,429	100%
2003	Bedford Av	15	18,266	105%
2004	Bedford Av	15	18,314	105%
2005	Bedford Av	15	17,879	103%
2006	1 Av	15	18,258	105%
2007	1 Av	15	19,497	112%
2008	1 Av	17	19,739	100%
2009	1 Av	17	17,402	88%
2010	Bedford Av	17	22,912	116%

* Traffic checks show that the peak load point station has varied from year to year; both Bedford Av and 1 Av are peak load points on the Manhattan-bound 7. Passenger loads on trains passing both stations are similar.

Source: NYCT Operations Planning

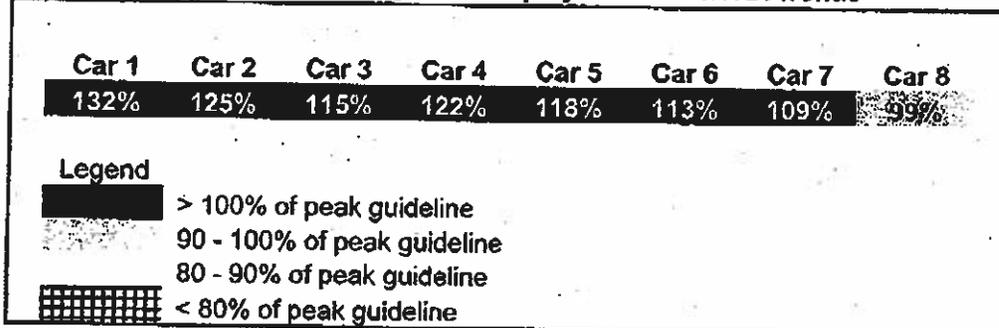
¹ During rush hours, the maximum guideline load is based on all seats filled and three square feet per standing passenger, or an average of 1,160 riders per train on an 8-car 7 train, when feasible. Off-peak, the guideline load of 25% more than a seated load is 430 passengers per 8-car 7 train, on average. When ridership is below the maximum guideline load, NYCT guidelines generally require policy headways with trains scheduled every 10 minutes weekdays, every 12 minutes evenings and weekends, and every 20 minutes overnight seven days a week. Schedules based on these guidelines are subject to various constraints, including fleet availability, maximum capacities of signal systems, and restrictions to accommodate off-peak maintenance and construction work.

Uneven loading on some trains contributes to crowding and irregular service during the morning peak. Currently, five Manhattan-bound trains originate from Myrtle-Wyckoff Avs rather than Canarsie during the morning peak hour, a schedule that allows the operation of additional trips on the inner portion of the Canarsie Line with the limited number of available cars. Starting these trains at Myrtle-Wyckoff Avs during the morning rush hour creates the potential for uneven passenger loading, but doing so also gives riders at the peak load points at Bedford Av and 1 Av an opportunity to board a few less crowded trains.

Trains starting at Myrtle-Wyckoff Avs carry an average of 70% of the peak guideline load at Bedford Av, which is lower than the overall 2010 peak hour average of 116% of guideline (that is, 16% more than the guideline load). Starting these trains at Myrtle-Wyckoff Avs, while providing more frequent service for riders between Myrtle-Wyckoff Avs and 8 Av, creates uneven morning rush hour service for riders at stations between Canarsie and Myrtle-Wyckoff Avs, which results in more crowding on trains starting from Canarsie. This suggests that crowding may be reduced on the **L** overall during rush hours by starting all trains at Canarsie, and NYCT will examine this issue in the coming months to determine whether we should change the strategy of starting some trains at Myrtle-Wyckoff Avs.

Similar to the findings of the **F** study in 2009, morning peak hour **L** loading also varies by car. Morning peak load data show that, generally, there is slightly less crowding in the rear, as the following diagram indicates.

Manhattan-bound Peak Hour **L Ridership by Car – Bedford Avenue**



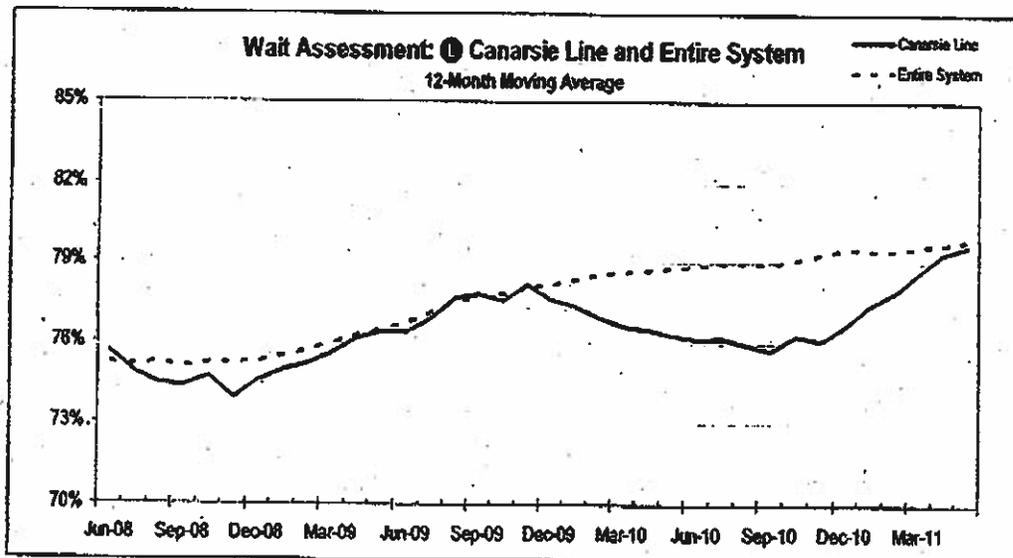
Source: NYCT Operations Planning

The weekday load data show that peak hour **L** trains continue to carry loads above guidelines, despite the increase in peak service to 17 trains per hour in late 2007. Until the CBTC system is cut over to its final configuration (as discussed below), 17 trains per hour is the maximum frequency we can operate on the Canarsie Line. However, once CBTC is in its final configuration, we anticipate being able to increase peak-hour **L** service to approximately 20 trains per hour in the morning peak hour in order to bring loads within guidelines, contingent upon the availability of trains, as well as on funding.

Line Performance

By most statistical performance measures, the Line matches, and sometimes out-performs, the rest of the subway system. This overall consistency comes in spite of the large ridership increase and the complicated transition to CBTC. The consistency can be attributed, in part, to an operational advantage of the Line – unlike most subway lines, it does not share tracks with other lines and, as a consequence, is operationally unaffected by delays that may occur on another line.

Wait Assessment measures the percentage of trains that arrive at stations within 25% of the scheduled wait time. It measures the evenness of service, a vital aspect of the customer experience. Wait Assessment is evaluated at key stations along the Line, using statistical sampling. While Wait Assessment has improved over the last three years overall, it did decline in late 2009 and 2010 before climbing back up in late 2010 and 2011. Based on a 12-month rolling average, roughly 80% of Line trips arrive at or close to the scheduled headway, largely in line with the rest of the system. Nevertheless, there is room for improvement in Wait Assessment, since uneven intervals between trains can lead to uneven passenger loads.

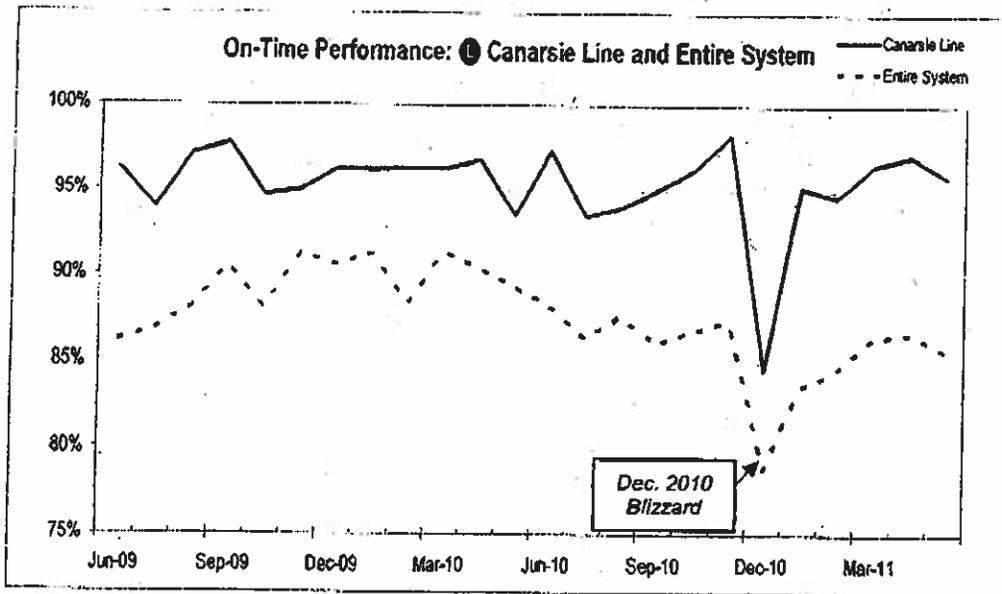


Source: NYCT Division of Operations Planning

Terminal On Time Performance (OTP) measures how many trains arrive at their terminals within five minutes of their scheduled arrival times.² Because OTP only measures arrivals at the final destination, it does not directly reflect customer experience as much as Wait Assessment. OTP does, however, provide a useful measure of operational efficiency. With a terminal On-Time Performance of roughly 95%, the Line has consistently out-performed other lines.

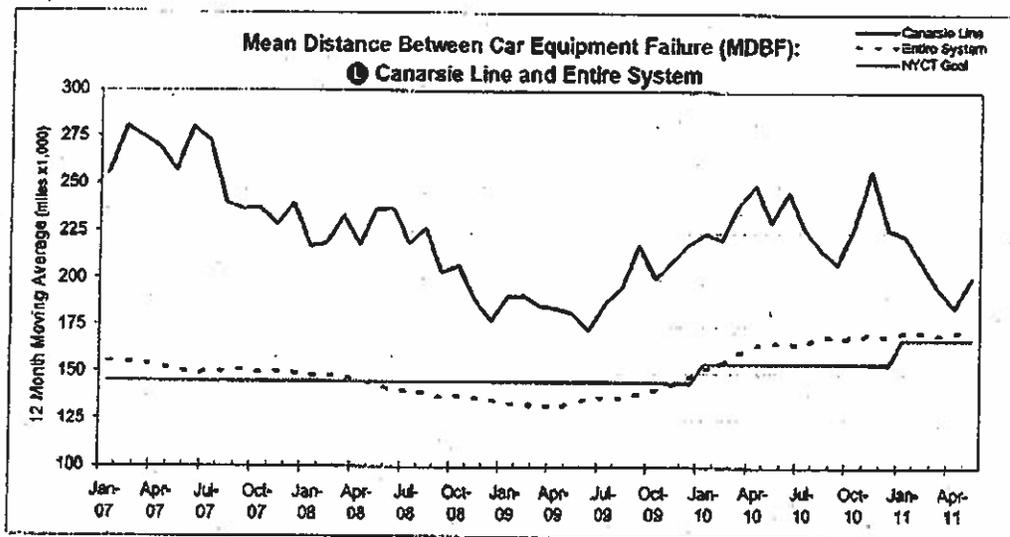
That Wait Assessment at 80% lags OTP at 95% is a function, in part, of the high frequency of service scheduled on the Line. With trains scheduled 4 to 6 minutes apart for most of the day, intervals need to be within 1 to 1½ minutes of the scheduled interval to meet the Wait Assessment goal of arriving within 25% of the scheduled interval, but can be up to 5 minutes late and still be recorded as on-time per OTP. There is still room to improve evenness of service.

² The schedule used for OTP is the schedule that is in effect, either the permanent schedule or a "supplement" timetable prepared for construction work or a special event. Trains that skip any scheduled station stop are not counted as on time.



Source: NYCT Department of Subways

Mean Distance Between Failures (MDBF) measures the effectiveness of car maintenance. Over the past 4½ years, MDBF on the **Canarsie Line** has consistently exceeded the NYCT goal, as well as outperformed the rest of the system. Although the trend since 2007 has been downward, cars on the **Canarsie Line** still on average run over 200,000 miles between failures.



Source: NYCT Department of Subways

These operating metrics do not demonstrate any particularly glaring performance problems on the **Canarsie Line**, and we anticipate that these metrics will improve after the cutover to final CBTC configuration later in 2011. As discussed below, CBTC includes functions designed to improve the evenness of service, which, when implemented, should lead to improvements in Wait Assessment.

Communications-Based Train Control on the 7

As noted above, the 7 is the first line in the subway system to receive NYCT's new signal standard, Communications-Based Train Control. CBTC on the 7 is replacing signals originally installed in the 1910's through the 1930's that provided a practical capacity of 20 trains per hour. During the course of the CBTC project, some of the original signals had to be removed, temporarily reducing the effective capacity of the line to 17 trains per hour, as discussed below.

CBTC is based on continuous radio communication between zone controllers (computers in control rooms along the 7 Line) with computers onboard the trains. The zone controllers keep track of where all the trains are and tell the trains how far they can go, while the onboard computers calculate how fast the trains can go and tell the zone controllers where the trains are at all times. With Automatic Train Operation (ATO), the onboard computers can also run trains from station to station under the direct oversight of train operators, similar to long-standing operations at many other transit systems, including BART in San Francisco and on many lines of the London Underground and Paris Métro. Train operators can also run the trains manually, following signals displayed on screens in the operating cabs. CBTC, in its final configuration with ATO, will allow trains to operate more closely together and thereby increase capacity on the 7 line.

The installation on the 7 was designed as a pilot program, to demonstrate CBTC's effectiveness and to identify necessary design changes before implementing CBTC elsewhere. (We are now installing CBTC on a second line, the 7 Flushing Line.) The 7 was selected in the mid-1990's as the first line to receive CBTC because it does not share track with any other line. At the time it was selected, Canarsie Line ridership was lower than it is today, with less service.

Due to the complexity of rolling out a new signal technology, the program to install CBTC has taken longer than originally planned, as NYCT and its contractor, Siemens, worked through technical issues. This has been well documented elsewhere, and this report is not intended to provide a complete history of the CBTC program. Suffice it to say, we did not achieve substantial completion of the CBTC system, originally scheduled for 2004, until the end of 2006, and even then the system was not in its final configuration, because much of the old signal system remained in service in parallel with the new CBTC system.

Complicating matters has been the meteoric rise in ridership on the 7, to the point where the 212 cars originally equipped with CBTC were insufficient to provide full rush hour service. NYCT therefore decided to delay finalizing the CBTC system until we could purchase and install CBTC equipment on additional cars. Since late 2006 we have relied on a hybrid signal system that allowed the operation of a mix of CBTC-equipped and conventional, unequipped trains on the 7. This hybrid system is what currently limits 7 line capacity to 17 trains per hour.

We now have a large enough fleet of CBTC-equipped trains to cover all 7 service at all times. We have begun cutting over the CBTC system into its final configuration, a complicated process that requires several weekend-long shutdowns of different segments of the Canarsie Line. The cut-over process is scheduled to be completed later this year.

Putting CBTC into its final configuration will lift the current 17 train-per-hour capacity constraint. This does not mean, however, that we will immediately increase service on the line. Instead, we will monitor the CBTC system closely for several months to make certain it performs to expectations. At the same time, we will evaluate operating statistics under CBTC, to adjust

running times as necessary and to calculate the maximum practical capacity of the line in daily operation under the final configuration of CBTC. While the theoretical maximum capacity of the **L** line under CBTC is estimated to be 26 trains per hour, we still must rigorously test the line's maximum capacity in its final CBTC configuration to determine its maximum practical capacity. Nevertheless, we expect that the maximum practical capacity under CBTC will be higher than the approximately 20 trains per hour needed to address the immediate crowding issues during the rush hours and bring the **L** to within rush hour guidelines. Thus, CBTC will provide room for long-term growth.

After CBTC has been cut over, we will also test, calibrate, and activate certain CBTC features that could not be used with the hybrid signal system, one of which is automatic headway regulation. Automatic headway regulation evaluates the spacing between trains and instructs trains to adjust operating speeds between stations, as well as lengthen or shorten the time spent in stations, as a means of keeping headways between trains more even. This should address the issues of unevenness that are reflected by the fact that the Wait Assessment statistics are lower than the OTP statistics.

Assuming everything remains on schedule, the earliest we can anticipate adjusting **L** line timetables and increasing the frequency of rush hour service would be when we change schedules in late spring or early summer of 2012. Any increase in peak hour service to approximately 20 trains per hour will be based on loads at peak load points, CBTC system performance, and fleet availability – but this analysis will not be undertaken until after the system has been cut over to its final configuration.

Weekend and Late Night Ridership on the **F** and **L**

As discussed earlier, ridership on weekends has grown significantly, and this has affected riders on the **F** in close-in Brooklyn and the Lower East Side, as well as riders on the **L** in the Lower East Side, Williamsburg, and Bushwick. Nevertheless, ridership on an average Saturday or Sunday is considerably less than ridership on an average weekday.

Systemwide, ridership on an average Saturday is less than 60% of average weekday ridership, while ridership on an average Sunday is only about 45%. During peak hours, weekend ridership is even lower; on Saturdays, morning peak hour ridership is generally less than 30% of weekday ridership. **F** line weekend ridership statistics at non-transfer stations from Church Avenue to 2nd Avenue are very similar to the systemwide averages, in terms of percentages. **L** line average weekend ridership statistics, however, show that average Saturday ridership is over 70% of average weekday ridership.

F and **L** Lines 2010 Turnstile Registrations* - Average Weekday vs. Average Weekend

	Average Weekday	Average Saturday	Average Sunday	Sat. % of Weekday	Sun. % of Weekday
F [†]	93,467	55,999	44,956	59.9%	48.1%
L	131,637	95,280	74,972	72.4%	57.0%
System	5,156,913	3,031,289	2,335,077	58.8%	45.3%

* Ridership is measured by turnstile registrations (station entries), excluding transfer stations.

[†] **F** line ridership between Church Av and 2 Av stations only.

Source: NYCT Office of Management and Budget

Late nights, particularly Saturday overnight into Sunday morning, are active periods for neighborhoods that also serve as entertainment districts, like parts of the East Village, Lower East Side, DUMBO, and Williamsburg, and this can translate into proportionally higher ridership at stations in these neighborhoods than elsewhere in the subway system. During late night hours, NYCT's policy headway on all lines is to run one train every 20 minutes, seven days a week. The 20-minute late-night policy headway, among other things, provides sufficient space between trains to accommodate some maintenance and construction work, as discussed below.

On the **L**, there are several stations in both Manhattan and close-in Brooklyn that attract a substantial ridership during the six hour overnight period from 11:00 p.m. on Saturday to 5:00 a.m. on Sunday. DeKalb Av, Graham Av, Bedford Av, 1 Av, and 3 Av all attract more than 1,000 riders, as measured by turnstile registrations, during that weekend overnight period. On the **F**, however, only the 2 Av station on the Lower East Side does so. (Ridership at transfer stations in the East Village, Greenwich Village, and Chelsea may also show the same, or similar, pattern, but it is not possible to precisely allocate ridership to various lines serving these stations.) At most **F** stations in close-in Brooklyn turnstile entries between 11pm Saturday and 5am Sunday are similar, proportionally, to systemwide ridership during those hours, although the volume of exiting riders at these stations may be higher.

From a ridership perspective, then, for the weekends as a whole, as well as for the overnight period, the issue of widespread ridership and the need for possible schedule adjustments is more focused on the **L** than the **F**. On the **F**, the 20-minute late night headway is sufficient to accommodate all late-night riders and is no different than that provided by other lines throughout the system; the 20-minute headway begins Brooklyn-bound leaving Broadway-Lafayette at approximately 12:50 a.m. on a Saturday overnight into Sunday. On the **L**, the 20-minute late night headway starts much later, in response to the more widespread late-night ridership on the **L** than on most other lines; the 20-minute headway begins Brooklyn-bound leaving Union Square at approximately 1:35 a.m. on a Saturday overnight into Sunday.

As noted above, **L** ridership does not drop off as much on weekends as ridership does on other lines; on an average Saturday, the **L** carries more than 70% of the ridership of an average weekday. A closer look at the turnstile registrations shows that weekend ridership at stations in close-in Brooklyn nearer Manhattan (north of Myrtle Avenue) is heavier than ridership on the outer segment of the line (south of Myrtle Avenue). In fact, ridership on the outer segment follows systemwide averages fairly closely, in terms of the drop-off in weekend ridership. Weekend ridership nearer Manhattan, however, is stronger, particularly on Saturdays, when ridership is nearly 80% of the weekday average.

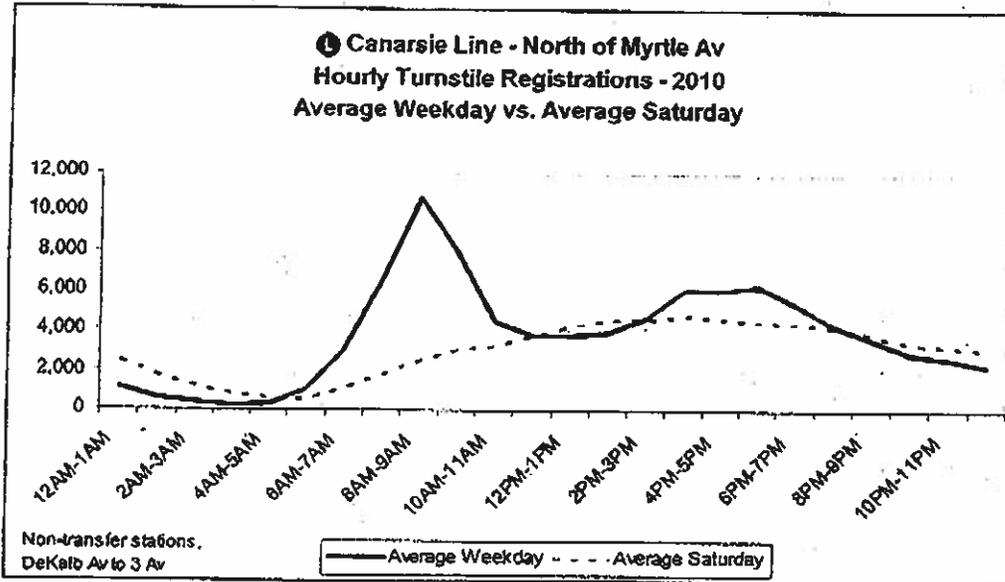
L Line 2010 Turnstile Registrations* - Weekday vs. Weekend

	Average Weekday	Average Saturday	Average Sunday	Sat. % of Weekday	Sun. % of Weekday
South Segment (south of Myrtle)	38,988	22,756	16,968	58.4%	43.5%
North Segment (north of Myrtle)	92,649	72,524	58,004	78.3%	62.6%
Total	131,637	95,280	74,972	72.4%	57.0%
System	5,156,913	3,031,289	2,335,077	58.8%	45.3%

* Ridership is measured by turnstile registrations (station entries), excluding transfer stations.

Source: NYCT Office of Management and Budget.

Although ① ridership on Saturdays on the segment nearer Manhattan is about 80% of the weekday level, ridership does not peak as much as it does on weekdays. The following graph compares weekday and Saturday turnstile registrations by hour for the segment of the ① from DeKalb Avenue to 3 Avenue. Saturday registrations lag weekday registrations by a considerable margin during the morning and afternoon peak periods, but are higher than weekdays middays, evenings, and midnights.



Source: NYCT Office of Management and Budget.

As the station registration data show, weekend ① ridership has increased significantly. In 2010 and 2011, Saturday and Sunday ridership through the maximum load point of Bedford Av (Manhattan-bound) are generally within NYCT's weekend guideline capacity on Saturdays, but exceed it for part of the day on Sundays. Weekend loads at 1 Av (Canarsie-bound) on average exceed NYCT's loading guideline during the afternoon and early evening hours.

Although ① ridership overall is lower on weekends than on weekdays, passenger loads exceed the off-peak guideline because NYCT has a lower guideline threshold during weekends and off-peak times than during the weekday rush hour. The following tables show Saturday and Sunday passenger loads at Bedford Av towards Manhattan and at 1 Av towards Canarsie.

2010 and 2011 Manhattan-bound Bedford Av Weekend ① Average Ridership

Time Period	Saturday			Sunday		
	Sched. Trains per Hour	Riders	Percent of Guideline	Sched. Trains per Hour	Riders	Percent of Guideline
7:00 - 7:59	9	2,893	74%	4	-	-
8:00 - 8:59	10	3,585	83%	5	1,910	88%
9:00 - 9:59	10	3,883	90%	6	2,875	111%
10:00 - 10:59	10	3,843	89%	7	-	-

Source: NYCT Operations Planning

2010 and 2011 Brooklyn-bound 1 Av Weekend Average Ridership

Time Period	Saturday			Sunday		
	Sched. Trains per Hour	Riders	Percent of Guideline	Sched. Trains per Hour	Riders	Percent of Guideline
14:00 - 14:59	10	4,327	100%	10	4,520	105%
15:00 - 15:59	12	5,373	104%	10	3,250	75%
16:00 - 16:59	12	6,608	127%	10	3,843	89%
17:00 - 17:59	12	7,023	135%	10	4,650	108%
18:00 - 18:59	12	5,210	101%	10	-	-
19:00 - 19:59	10	4,510	104%	10	-	-

Source: NYCT Operations Planning

Overall, there appears to be more of a ridership-based need to add some weekend service on the **L** than on the **F**, on both Saturdays and Sundays. Further study of weekend ridership on the **L** is underway; any potential changes in weekend schedules, however, would have to be coordinated with weekend construction, as discussed below.

Weekend Construction

Because ridership is lower on any given weekend day than on weekdays and because there is no weekend peak hour comparable to a weekday peak hour, NYCT undertakes much of its construction and maintenance work on weekends. Some construction and maintenance work also takes place on weekdays between the rush hours (10:00 a.m. to 3:00 p.m.), as well as late evenings and overnight. However, midday and late-night work is generally less productive than weekend work because of the limited time available to do the work. Weekend work from late Friday night through early Monday morning allows for about 53 hours of uninterrupted work, and NYCT intends to continue to concentrate work on weekends as much as possible.

Unlike the **L**, the **F** shares corridors with other routes over its entire length – not just the lines it is scheduled to share tracks with, but other routes with which it may end up sharing tracks because of construction work. The weekend **F** is normally scheduled to share tracks with the **G** in Brooklyn and the **E** in Queens. Depending upon construction plans, however, the **F** may also share tracks with the **A C D M** and **R**.

Because of a multitude of shared track scenarios, rarely a weekend goes by in which the **F** does not somehow share tracks with other routes to accommodate construction taking place either along the **F** line itself or along another line detoured to share tracks with the **F**. Even if there were sufficient ridership on the weekend **F** to warrant additional service (which, as discussed above, is not the case), it would not be possible to increase the level of weekend **F** service, because when it shares tracks with other services due to construction, it does so under the capacity constraints associated with construction work.

Since the **L** does not share tracks with any other route, weekend work on other routes does not directly affect **L** operations. Thus, there is more flexibility in scheduling **L** service on weekends – and as the ridership data indicate, there may be more of a need to add some service on weekends.

However, even if NYCT adds weekend service on the **L**, there will be times that service must be reduced or suspended to accommodate weekend construction work. Because the **L** only has two tracks, when construction work requires that a track be taken out of service, there is no physical

way for a train to bypass the work zone, and service must be suspended on the segment where the work is taking place.

Since the Canarsie Line only has a few intermediate stations with track switches where trains can reverse direction, sometimes the segments to be suspended can be fairly lengthy. For instance, there are no track switches between the Bedford Avenue interlocking, which is located between the Bedford Av and Lorimer St stations, and the Myrtle Av interlocking, which is located adjacent to the Myrtle-Wyckoff Avs station. Thus, any work taking place between those interlockings that requires the removal of a track from service necessarily leads to a full suspension in service to six stations.³

Part-time shutdowns on weekends – such as suspending operations during mornings, but keeping service operating at other times – would not yield adequate productivity, and would not be practical for track reconstruction or other structural jobs that require uninterrupted access to the tracks.

Next Steps

As this summary shows, continued ridership growth on the **L** weekdays and weekends translates into a need for additional service. However, this service cannot be added until CBTC has been cut over into its final configuration and its performance fully evaluated. The next steps, then, are:

- Complete the cut-over of CBTC – by the end of 2011.
- Evaluate system performance of CBTC in its final configuration – early 2012.
- Complete evaluation of **L** ridership on weekdays and weekends – early 2012.
- Develop timetables to add rush hour service, as well as service at other times and on weekends, as necessary – mid- to late 2012.

Unlike the **L**, the case for weekend service increases on the **F** is not as compelling, and the fact that the **F** shares tracks with other lines complicates weekend operations. Increases in weekend service are not possible on the **F**.

³ During such track closures, the stations that would not have any train service are Graham Av, Grand St, Montrose Av, Morgan Av, Jefferson St, and DeKalb Av.