

A New L Train for New Yorkers

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Photo: Nancy Borowick

The MTA is considering shutting down the L train tunnels under the East River for more than a year to repair the severe damage caused by Superstorm Sandy. That's grim news for the hundreds of thousands of New Yorkers who rely on the L and will have few easy alternatives to get to where they're going every day. Many of them will face longer and more arduous commutes.

It likely will come as little comfort that after the much-needed repairs, the tunnels will be safer but will otherwise look and feel the same as today. The MTA has done an excellent job so far keeping the system going and repairing tunnels that were inundated with salt water during Sandy. But what if the MTA took advantage of the major disruption to transform the L into a subway line that will meet the needs of our growing population and workforce?

The growth that has occurred along the L is nothing short of incredible. In 1985, the line carried 40,000 passengers on a good day. Today, it hauls more than 300,000 – that's as much as the entire subway system of some major cities. The line is bursting at

the seams: At the Bedford Avenue station in booming Williamsburg, annual ridership has surged 373% since 1995 to almost 10 million.

At its busiest, the L runs 20 trains an hour. The MTA has plans to nudge this up to 22 trains. That will provide a little relief, but still fall far short of what communities in Brooklyn and Manhattan need on this overcrowded line.

Yet we could be more ambitious. The L line is currently the only one in our system to operate with modern train-control technology. That means that the L line could run 30 trains or more an hour if the MTA took some additional steps during the shut-down, such as significantly boosting electrical power, buying new subway cars, increasing train storage capacity and rebuilding the 8th Avenue station in Manhattan.

The MTA is planning to build a few new station entrances, but more are needed. The MTA could also make the experience of riding the L safer and more comfortable by adding stairs, escalators and elevators, widening platforms, and installing glass



platform doors, as cities around the world are doing. This is disruptive work, so why not do it all at once and spare riders more inconvenience in the future? As a bonus, it's less costly to bundle these upgrades together than to spread them out over years. Since our subways run 24/7, doing things such as adding a station elevator can be a months-long process. With service suspended, it could be done in days.

Sandy dealt New York a terrible blow, and we're still years away from a full recovery. Let's make it worth the wait.

Closing the Tunnels - Options

There are several options that have been raised by the MTA and the public to facilitate repairs of the L train's tunnels under the East River:

OPTION #1: Close both tunnels under the East River for an 18-month period. During the duration of the closure service would be suspended between Brooklyn and Manhattan and all service would cease along 14th Street. Alternatives would be required to transport the hundreds of thousands of riders that rely on the L train daily.

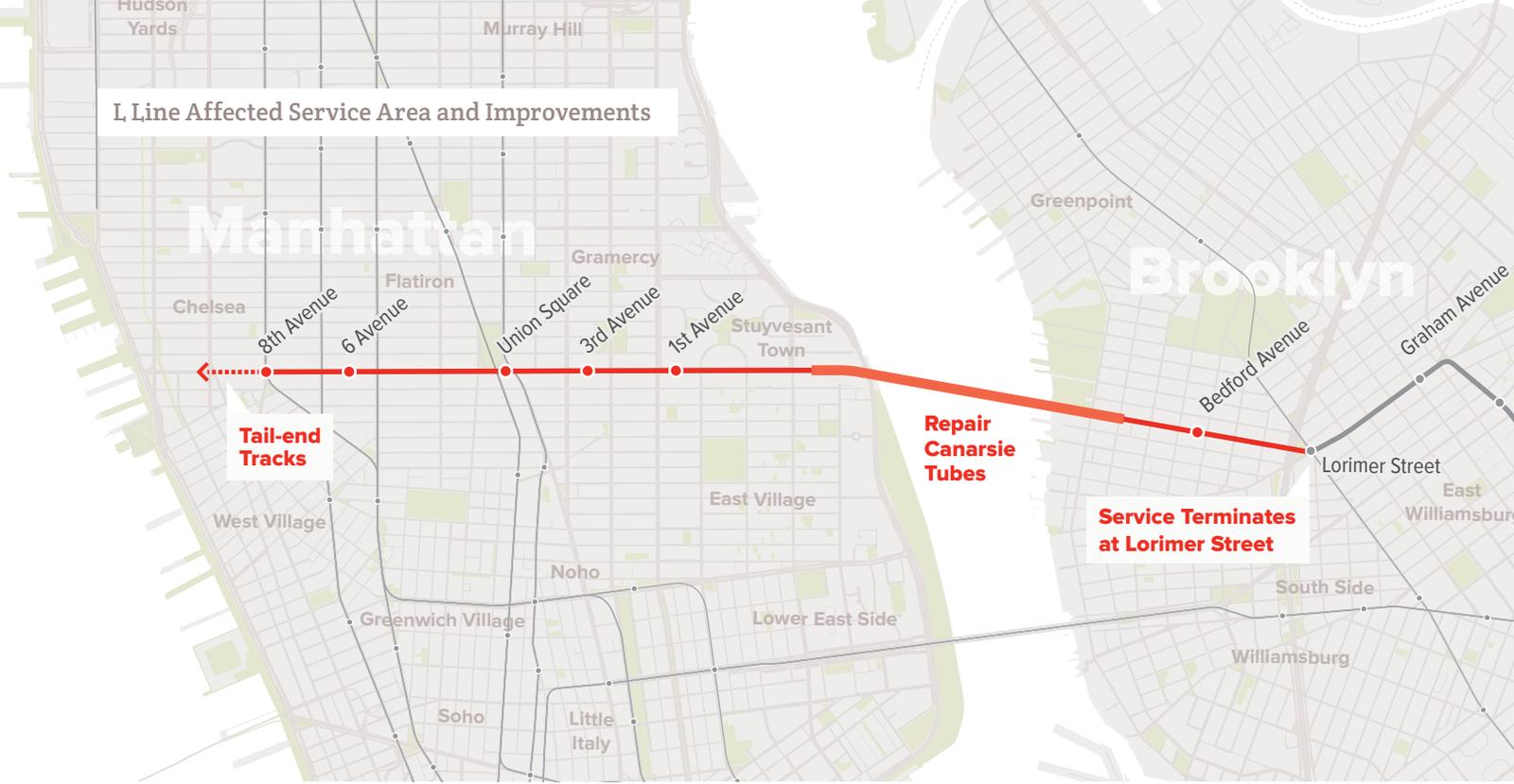
OPTION #2: Close each tunnel separately, keeping one tunnel in service at all times. Each tunnel would be closed for 18 months, which would cut service on the L by at least 75% for three years. The impact on capacity would be similar to what has been discussed for the trans-Hudson tunnels.¹ The L would only be able to carry one-quarter (or less) than the more than 200,000 riders who use the system daily. Alternatives would be required to transport the balance of riders who wouldn't be accommodated by the reduced service, and to bolster the cross-town 14th Street service that would be significantly reduced.

OPTION #3: Construct one new tunnel to maintain the same level of service, while repairing the other tunnels one at a time. This option, if physically feasible,² would eliminate service disruptions. Yet, it would cost the public billions of dollars and would be of little benefit once the other tunnels were repaired. The L train is only a two-track line and has no third express track to take advantage of the additional capacity afforded by a new tube.

These three options, and others, will likely be debated for months to come. RPA's experience and review indicate that option #1, closing both tunnels for 18 months, is the most cost effective. What's more, it creates an opportunity to truly transform the L train. The loss of the L train service to and within Manhattan for an 18-month period will be disruptive, but doubling the construction timeline, along with the higher associated costs and extending the pain of a huge service cut is far less desirable. It's also not possible to justify the cost of constructing a new tunnel to serve as "swing space" for the tunnel repairs when that additional capacity will go unused after the project is completed. The MTA has proven that it can deliver when it completed the 14-month rebuild of the Montague (R train) tunnel one month early. The MTA should go a step further this time around, repairing the tunnels while also improving the infrastructure along the shuttered parts of the line.

¹ Regional Plan Association. Tunnel Trouble: Crumbling Infrastructure Is Putting the Region at Risk. 2015. Watch the video at: <http://www.rpa.org/tunnel-trouble-crumbling-infrastructure-is-putting-region-at-risk>

² If space exists on the Brooklyn and Manhattan sides to cut over to the new tunnel



What RPA Is Recommending

RPA is recommending a comprehensive investment plan to take advantage of a rare extended shutdown of one of the city’s busiest subway lines. For an 18-month period six stations and more than three route miles of track will be idle. The MTA should take advantage of this outage to rebuild a quarter of L stations to modern standards. The agency also should make a series of additional investments to unlock the line’s capacity, taking full advantage of the agency’s earlier investment in modern train control, known as Communications-Based Train Control. This includes addressing major system bottlenecks, including the 8th Avenue terminal and dealing with crowding issues at the L’s busiest stations by resizing them to meet current and projected ridership demand.

These capital investments will need to be combined with surface improvements to mitigate the planned service outage that will be required to rebuild the East River tunnels. Most, if not all, of these improvements could remain once the tunnel rebuild is completed, enabling the MTA to incrementally add service to meet demand in this corridor for decades to come.

Proposed Closure Details

Tunnel: Both East River tunnels will be closed for 14-18 months to be rebuilt, repairing the damage they sustained during Superstorm Sandy and addressing other state of good repair and general improvements.

Manhattan: Service in Manhattan (at five stations) and at Bedford Avenue in Brooklyn is suspended for the duration of the project – six stations in total. This will eliminate cross-town subway service along the entire 14th Street corridor in Manhattan, freeing up the stations for unimpeded 24/7 access by work crews.¹

Brooklyn: Service terminates at Lorimer for connections to G train, JMJZ at Hewes Street (.5 mile walking distance) and surface connection to Select Bus Service (SBS) over the Williamsburg Bridge on a dedicate bus lane (most proximate subway stop to access bridge). A new high-capacity switch might be required to allow the trains to depart Lorimer and then reverse direction and cross over to the Canarsie-bound tracks. Other improvements also might be needed at the station to accommodate the additional riders that will use it as a transfer point.²

¹ While some equipment and materials could be pre-staged prior to the commencement of the demolition and reconstruction of the Canarsie line’s East River tunnels, vertical access (work shafts) to the surface – 14th Street – might be necessary.

² The MTA will likely need to replace the high entrance/exit turnstiles (HEETS) with standard turnstiles to handle the anticipated increase in passenger volumes. The western exit currently has only three turnstiles and 5 HEETS; the eastern Manhattan-bound exit has no turnstiles and two HEETS.



Alternatives to the L Train

The extended shutdown of the L will require the MTA and city to provide alternatives for roughly 200,000 daily riders who travel beneath the East River. While the city and MTA should reach out to major employers to encourage transportation demand management options such as staggered work hours and telecommuting, in many cases other transit options will be needed. The section below recommends a series of surface transit improvements and enhancements to existing transit services.

Surface Bus and Pedestrian Improvements

- **14th Street Crosstown Transitway, Bus and Pedestrian Improvements.** The 14th Street Corridor segment stretching between Union Square (Irving Place) and 6th Avenue would be reserved exclusively for pedestrians, cyclists and two dedicated bus lanes. No private automobiles would be permitted. The revamped corridor would span the 6th Avenue subway/PATH and Union Square subway complexes, both high-ridership transit hubs with busy sidewalks. Trucks would be allowed to make deliveries in this area overnight, and loading zones would be provided on adjacent avenues north and south of the intersections during the day, displacing on-street parking during the daytime. Outside the new bus, pedestrian and bike corridor, vehicle traffic on 14th Street would be rerouted to travel in one direction only away from the restricted segment. Physically separated dedicated bus lanes would allow buses to travel in both directions for the entire length of 14th Street. The configuration echoes a concept proposed for 34th Street a few years ago by the New York City Department of Transportation.

- **Dedicated Busway Over the Williamsburg Bridge, Connecting to 1st and 2nd Avenue SBS and New 14th Street Crosstown Transitway.** The busway route would start in Brooklyn at the Lorimer Station, where there is space for staging transfers from subway to bus. This bus stop would be located adjacent to the BQE, where there also is space for bus storage. The busway could be extended further into Brooklyn. The busway would connect to the 1st Avenue and 2nd Avenue SBS at Allen Street in Manhattan. Some service would run the full length of the existing SBS and the remainder would divert crosstown along the 14th Street Transitway.

Existing Subway and Ferries

- **Service on G and JMZ Subway Lines.** The length of the G trains will most likely need to be extended from four cars to either six or eight car trainsets, and service frequency will need to be increased. JMZ service also should be increased, with most of the new service apportioned to the M, which directly serves the city's major job center in midtown Manhattan. Additionally, station entrances at Hewes Street and Flushing Avenue should be reopened to ease platform crowding.
- **Ferries and a Free Transfer.** The MTA and the city should determine the best mix of ferry service based on the place of work of residents within walking distance (a third of a mile) of the existing waterfront landings near the Bedford Station. The MTA (with a partial city subsidy) should establish a free transfer between the ferry and buses in Manhattan.

Transforming the L Train – From Bedford to 8th Avenue

The MTA will have unimpeded access to more than three route miles of track and six stations for 18 months. During that time, there will be no trains and no riders to contend with, unheard of for a subway that runs 24 hours a day.

The agency has demonstrated that it can deliver a rebuild of this magnitude when it completed work on the Montague tubes under 14 months. The L train shutdown is an opportunity to go even further, by dramatically transforming the station environments, preparing the L for future growth and at the same time repairing the damaged tunnels. A successful transformation would offer an example of how to capitalize on long-term closures elsewhere in the system as an efficient means to upgrade the aging subway system.

The improvements detailed below will aid all riders of the L. In particular, riders from Canarsie and Broadway Junction will benefit from the increased service and the better transfers to lines along the 14th Street corridor. All the improvements might not be completed during the 18-month period, with some likely continuing after the tunnels are repaired and service is restored. But the service outage would give the MTA a head start and allow the agency to complete some of the most disruptive work while the stations are idle.

RPA estimates that these additional investments will cost between \$880 million and \$1.14 billion. Some of the cost includes longer-term procurements such as new rolling stock and other system upgrades including power substations that could be spread over multiple capital plans. The MTA will need to complete a more detailed analysis of the costs, but it is anticipated that construction work would cost considerably less than under normal work conditions because of the 24/7 work window that will be available during the shutdown.



Capital Improvements at Six Stations

All stations between Bedford Avenue in Williamsburg and 8th Avenue in Manhattan should be rehabilitated and brought to a state of good repair. Platform doors also should be installed. Wayfinding at all stations should be redesigned to direct riders and help separate pedestrian flows.

Bedford Avenue

Platforms: Widen island platform and add an elevator and/or escalator on one side to access one of the two mezzanines.

Circulation: Widen vertical access to the street at both mezzanines with new exits/entrances to the western side of Bedford Avenue, including at least one elevator to the surface. Replace the full height cage turnstiles (HEETs) with standard turnstiles.

Accessibility and Surface: Entrances to the station should be incorporated into surrounding buildings on four corners of Bedford Avenue and two corners of Driggs Avenue. Widening the stairs will require easements from each of these buildings; the extent of the intervention likely will vary.

First Avenue

Accessibility and Surface: New ADA-compliant entrance on Avenue A.

Third Avenue

Accessibility and Surface: The station could be made ADA accessible by adding an elevator to the surface at existing fare control or on 2nd Avenue. The latter option more equally distribute ADA access along the corridor.

Union Square

Platforms: Widen island platform and/or declutter through reconfiguring vertical circulation points. Remove storage areas under stairs to create more platform capacity.

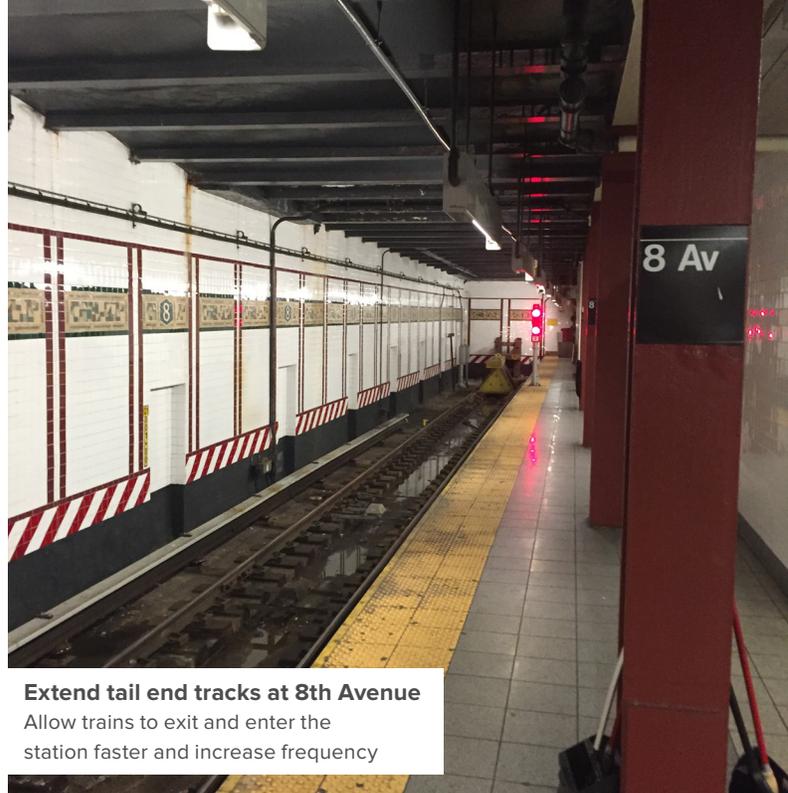
Circulation: The center-of-platform stairs on the L platform that connect to the NQR impede circulation and should be reconfigured.

Sixth Avenue

Accessibility and Surface: Make entrance and station ADA accessible.

Platforms: Remove oddly positioned equipment room off western end of platform and add elevator to mezzanine.

Circulation: Improve corridor to 7th Avenue IRT station. Widen stairs from platform to PATH/IND transfer.



Extend tail end tracks at 8th Avenue

Allow trains to exit and enter the station faster and increase frequency

Eighth Avenue

Operations: Rebuild the L train's terminal, including extending the stub-end tracks to 10th Avenue, creating space for train storage and turning trains, and installing higher-speed double crossover (aka diamond) switches at both ends of the terminal.

Circulation: Reconfigure the transfer to 8th Avenue station/IND line, with direct connections to the southern end of the 8th Avenue A, C and E platforms. New vertical circulation also should provide ADA access to the L train platform. Widen existing vertical circulation elements in terminal wherever possible.

Accessibility and Surface: Evaluate options for a new western ADA-accessible entrance to the street between 8th and 9th avenues with possible future extension of the passageway to new #7 line station near 10th Avenue and 14th Street.

Additional Investments to Support Increased Service

Power: Install new power substations to allow for 30 or more trains per hour.

Yards: Add more train storage at Canarsie Yards.

Rolling Stock: Purchase additional trainsets to support new capacity, to be added incrementally over the next three capital plans (2015-2019, 2020-2024 and 2025-2029).