

THE L TRAIN

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“We are building tunnels back smarter and more resilient,” Ronnie Hakim, MTA New York City Transit President, told a crowd of Brooklyn residents who gathered to hear about the MTA’s plans to repair the Canarsie tunnel, which connects Fourteenth Street in Manhattan to Williamsburg, Brooklyn. News of possible closures to this line had leaked last January, but two community meetings in May were the start, officials said, of efforts to include community voices in plans to repair the 1924 tunnel that had been heavily damaged by Hurricane Sandy in 2012.

This essay considers a problem of civil society and urban planning that was catalysed by a naturally occurring disaster, Hurricane Sandy. I investigate how the causes and effects of this situation, insofar as they relate to climate change, have not been accounted for in various groups’ attempts to argue about the stakes of shutting down the L line and reconstructing its physical and social infrastructures. I suggest that by beginning with the shared assumption of ‘building it back,’ we preclude the possibility of discussing the L Train in environmental terms.



The L Train is so predictably crushed that if a person should wish to experience New York rush-hour congestion, she can visit the L line at nearly any moment – day or night – throughout the weekend. After snapping a picture of a packed L platform at 1:30am, Carson Qing, a researcher at New York University’s Rudin Center for Transportation, felt compelled to find out just how crowded Brooklyn’s tunnels had become. His analysis of turnstile data showed that since 2005, ridership on the L Train has skyrocketed, doubling at nearly every platform on the average weekday and tripling or even quadrupling on the weekend. The L Train, Qing concluded, does not have ‘peak hours,’ but instead ‘extended rush hours’ that can last for days.¹

1 Carson Qing, ‘Rush Hour in Williamsburg—at 1 AM,’ NYU Rudin Center blog, 29 January 2013.

The L Train runs from Eighth Avenue in Chelsea, Manhattan, to Rockaway Parkway in Canarsie, Brooklyn and carries about a quarter of a million passengers daily. Usage of this line, especially the part that runs through Williamsburg, Brooklyn, has increased so dramatically in the past ten years that the Bedford and Lorimer L stations are among the most crowded in the New York City subway system. The Bedford L is now also the name of a television show representing and parodying the lifestyle habits and real estate prices around this stop. The L Train runs under the East River through the Canarsie tunnel, a 1.4-mile-long tunnel that was dug by hand in 1924.

Though the New York City subway system is overall experiencing record-breaking levels of ridership, the L Train is so crowded partly because of what MTA officials call a “low level of infrastructural redundancy.” Running through the formerly industrial – and now tremendously popular – areas of Williamsburg and Bushwick, the L Train is a lone spar in North Brooklyn. Disconnected from the trio of lines that run across the Williamsburg Bridge to south Williamsburg, it serves neighbourhoods that are even further from the cluster of lines that connect Midtown to Long Island City, or that dip south from lower Manhattan through a network of connections branching off from Borough Hall, Jay St Metro, and Atlantic Avenue. Its relative geographical isolation helps explain why its residents are among a minority in New York who will describe themselves as living “off the L Train,” rather than in a neighbourhood. Try, for example to find a resident of Tribeca or Park Slope who will describe themselves as “living off the 2.” This infrastructural identity, though, recently took on new weight when the MTA announced that the L Train is about to close for up to three years.



In 2012, Hurricane Sandy made devastating landfall in Jamaica and Cuba before retreating briefly to the open water of the Caribbean Sea, strengthening again, and running through the Bahamas and up the Eastern seaboard of the United States, making its mark on twenty-four states from Florida to Wisconsin. Superstorm Sandy, as it was unofficially called, left 70% of Jamaica without power, caused billions of dollars of damage, and was linked to hundreds of casualties. A Category 1 hurricane at the time it hit New York City, Sandy flooded subway tunnels and streets with 400 million gallons of seawater and knocked out the electricity below Fortieth street.² Photos from the night of October 29 show an eerily dark lower Manhattan, save for the golden glow of the generator-powered Goldman Sachs building.

2 *The New York Times* wrote about the “two cities” left in Sandy’s wake, divided by access to hot food and warm water (Sharon Otterman, ‘Above 40th Street, the Powerless Go to Recharge,’ *The New York Times*, 1 November 2012).

Electrical wiring in the subway that comes into contact with saltwater has to be replaced because dried salt conducts electricity. Saltwater running over the third rail in the subway system can even light floating trash on fire. During Sandy, the subway took on millions of gallons of saltwater and the tunnels, as the lowest parts of the system, were at points flooded from floor to ceiling. South Ferry Station became a swirling repository for water that raced downhill beneath Wall Street and Battery Park to inundate one of the system's most up-to-date electrical rooms, reconstructed with post-9/11 funds to handle twenty trains an hour. In the days before the storm's landfall, MTA officials knew the low-lying South Ferry would be a problem, but outside of barricading subway entrances with boards and sandbags, had no systemic plan for holding back the chest-high water rushing into the station.³

3 MTA Official Website, 'Restoring South Ferry Station,' <http://web.mta.info/nyct/service/RestoringSouthFerryStation.htm>.

Immediately after the storm, the U.S. Army Corps of Engineers began the process of 'unwatering' the tunnels. The Corps, along with the Navy, which contributed submersible and centrifugal pumps, focused on tunnels leading in and out of the city, leaving subway tubes to the Federal Emergency Management Agency (FEMA) and the City of New York. Collecting generators and water pumps from around the country, the US Army Corps of Engineers started with the Brooklyn Battery Tunnel, a major artery connecting Brooklyn and Manhattan near South Ferry station. They placed high-head submersible pumps deep below the water's surface and used centrifugal pumps to suck water from the surface in a huge, straw-like hose.⁴ Some of these pumps arrived from the last American city deluged by a major storm: New Orleans.

4 Spencer Ackerman, 'Here's How Army Engineers Are 'Unwatering' NYC's Tunnels,' *Wired*, 1 November 2012.

The task facing the MTA in the days following Sandy was both unprecedented and extremely familiar. The MTA is "in the business of moving water," Michael A. Lombardi, then senior vice president for subways at New York City Transit, said after a 2007 inundation. "We move 13 million gallons of water a day when it's not raining," Lombardi said; it's only when water "comes down like a river and goes into our vents" that business as usual comes to a halt.⁵ The problem is that many scientists predict that such situations will soon become the new normal. Coastal cities like New York are particularly susceptible to sea level-rise and increasingly violent storms, but the full extent of New York's vulnerability in a climate that makes hurricanes the strength of Sandy on the Atlantic coast less of a rarity lies deep under the water's surface. The particular environmental situation of the island of Manhattan means that the movement of water will likely become more and more central to the MTA's job.

5 Sewall Chan, 'Why the Subways Flood,' *The New York Times*, 8 August 2007.



The surveyor Egbert L. Viele was commissioned in the 1860s to make several detailed maps of New York City topography, some of which are still consulted by structural engineers and city planners to see if they are planning a new skyscraper over a buried pond or stream. Today Viele may be visited entombed with his wife in a pyramidal mausoleum guarded by two stone sphinxes in West Point, New York. A civil engineer, US Representative and Captain of the Engineer Corps during the Civil War, Viele is perhaps best remembered for surveying the land that would become Central Park, just prior to the approval of Olmsted & Vaux's 'Greensward Plan.' Viele himself became engineer-in-chief of Central Park and, later, also associated with Prospect Park. But it is his detailed survey of the hidden waterways of New York – showing its original shoreline, marshes, and streams – that has become critical to engineers and academics assessing ways of making the city more resilient to a new era of building and environmental stresses. 'The Sanitary and Topographical Map of the City and Island of New York,' now known as Viele's map, superimposes the city's 1865 grid system over the natural topography of Manhattan, from Minetta Brook, which continues to flood basements in the West Village, to Collect Pond, a critical source of fresh water for the Lenape people and colonial settlers that is today commemorated in miniature as a reflecting pool on the grounds of Federal Plaza. Viele's map also reveals how the shorelines have changed in correlation with the changing grid structure of the city, which extended Avenues A, B, and C through a swamp and built out Tenth and Eleventh Avenues, not to mention the piers, all of Battery Park, and much of the Financial District, over what was formerly open water.

Shorelines have changed dramatically – geologically speaking – in the past 10,000 years. Today, when we talk about sea level rise, it is often in terms of the steady increase of inches in response to climbing temperature. But the geological past of New York City and its surrounding bay suggests that the rapid melting of glacial sheets have raised sea levels as rapidly as a foot a decade in what are called "meltwater pulses."⁶ Today, the Intergovernmental Panel on Climate Change predictions and NASA's monitoring project, Ocean Melting Greenland, suggest that we are experiencing a similarly dramatic level of glacial change. If IPCC predictions about ice sheet melting are right, then not just New York, but many of the world's major coastal cities – Miami, Guangzhou, Mumbai, Shanghai – will be in trouble.

New York City is vulnerably perched at the apex of a major submarine geological feature. Carved out by the Gulf Stream, the New York Bight is an underwater canyon running up the Atlantic coast and along the south of Long Island. The New York Bight makes the city especially vulnerable to storm surges by funneling water up through a massive underwater valley between New Jersey and New York called the Hudson

6 Andrew Weaver, et al., 'Meltwater Pulse from Antarctica as a Trigger of the Bølling-Allerød Warm Interval.' *Science*, 290: 5613 (2003), 1709-1713.

Canyon. The north-south Atlantic coast and east-west axis of Long Island meet at nearly a right angle, which is also the location of the mouth of the Hudson River. If a storm moves north along the Jersey coast, easterly cyclonic winds might push a strong surge west, straight into the Lower New York Bay and one of the largest metropolitan areas in the country. The particularly vulnerable geological position of New York City has long been noticed by meteorologists, who also point out that a storm surge might do even more damage if it is funneled up the Hudson Canyon, a deep submarine trench below the Hudson River, formed during the Pleistocene era when the river was much lower. Both geological particularities of the bay mean that storm surges have little opportunity to dissipate, except over the surface of lower Manhattan and Staten Island. An 1893 storm followed this blueprint for inundation and produced surges of 30 feet in lower Manhattan; in 2012, Hurricane Sandy followed the same path.



7 'NYC Build it Back Program: Stronger and Safer,' <http://www.nyc.gov/html/recovery/html/home-owners/rebuild.shtml>

8 Renee Cho, 'Rebuilding After Hurricane Sandy,' *State of the Planet*, Earth Institute Blog, Columbia University, 21 January, 2015.

9 Roxie Pell, 'Video: L Train Riders at Bedford Ave React to Multi-Year Shutdown News,' *The Gothamist*, 14 January 2015.

After Sandy, New York dubbed its homeowner fund for repair and reconstruction after the storm the 'Build it Back Program.'⁷ Though the city also backed six urban and environmental design projects focusing on how to make the city more resilient to future storms, the public and municipal conversations about hurricane damage, especially in relation to the city's transportation systems, remain dominated by the effort to 'build it back,' and fast.⁸ News of possible closures to L Train service, first leaked in January was greeted by irate riders, one of whom publicised his feelings in a video for *The Gothamist*, saying, "To the MTA: you're the worst, but maybe I'll be in LA soon."⁹

On two recent spring evenings, the MTA hosted community meetings to discuss options for repairing the Canarsie tunnel. At the first meeting – notably held in Brooklyn a week before its Manhattan counterpart – residents filed past news vans and police officers into the vast Marcy Avenue Armory to see exhibits of corroded subway parts, large-format photographs of Sandy's aftermath, and poster boards detailing repair proposals. MTA and New York Subway and Train employees were on hand to answer questions about proposed repair plans – a year and a half total shutdown or three years of partial service that could accommodate perhaps 20% of normal ridership – and alternate routes – ferries, express bus lanes, more robust J, M and G lines. (Entrepreneur Daniel Levy allowed that the looming L Train shutdown has given new life to his proposed East River Skyway, a gondola that if built would connect Williamsburg to Delancey Street.)¹⁰ MTA representatives and elected officials stuck to a politic stance that emphasised

10 The East River Skyway is a private venture proposed by Daniel Levy, the president of a real estate site, and it is unclear how or whether the city of New York would participate financially in the project (<http://www.eastriverskyway.com>).

the necessity of repairing the tunnel as soon as possible and improving the tube's safety right now. "We walk the entire length of the tunnel twice a week," MTA Chairman Thomas Prendergast said.

Tacitly, the MTA has taken off the table the primary demand of the recently formed 'L Train Coalition whose entrepreneur and community organiser members suggested delaying tunnel repairs until a new, third tunnel could be constructed (the cost of such a project could total \$4.5 billion dollars).¹¹ The legacy of Brooklyn organising around transportation issues, especially the possibility of being cut off from Manhattan, has an important history. Only in the 2000s was reconstruction of the Williamsburg Bridge finally completed, a project that owes its origins (and some would add, duration) to strong late-1980s community organising against the proposed plan of replacing the dilapidated Williamsburg Bridge, during the reconstruction of which North Brooklynites would have faced a formidable commute to Manhattan. But under strong community pressure – L Train Coalition leader Felicia Kirby said they had marched to protect their link to Manhattan in 1987 and they would do so again – the MTA devised a plan to fix the cracked foundation, significant rusting, and notoriously unstable Cable G (which had an estimated 5% chance of total failure) while keeping the bridge open. The difference is that far from a marginalised neighbourhood fighting to maintain its economic relevance, Williamsburg today is an economic powerhouse, with real estate prices among the highest in the city. Concern over keeping Manhattan connected to Williamsburg, both as a destination for tourism and nightlife, but also as a residential home to an increasingly high-income workforce, is shared across the East River.¹²

The new organising challenge is not, therefore, to fight against a marginalised Brooklyn, but to attend to the growing disparity of power within Brooklyn. Congresswoman Nydia Velázquez, longtime representative of North Brooklyn, attended the recent MTA meetings to voice her demands that the city "engage stakeholders from Williamsburg, Bushwick, and East New York" and "grant a just distribution of opportunities to those who will be impacted in those neighbourhoods." What Velázquez has in mind is "small business participation," and "making sure that local businesses will be part of the construction." In her view, which was echoed by Brooklyn Community Board member Anthony Drummond and NYC Comptroller Scott Stringer, the L Train closure and reconstruction gave the MTA the clear prerogative and opportunity to exemplify a new kind of municipal relationship that was "nothing less than open, inclusive and transparent with the community" from Williamsburg all the way to Canarsie.¹³

So far, this has been the dominant discourse of concern and critique: how can the MTA act as an agency, a corporation,

11 See the L Train Coalition's website: <http://ltraincoalition.com> and Benjamin Kabak's historical analysis of why the L line is so isolated ('History Smiles as L Train Coalition discusses a new Williamsburg Tunnel,' *Second Ave. Sagas*, 26 February 2016).

12 As Representative Carolyn Maloney remarked in the 5 May 2016 meeting, during the Sandy subway shutdown, "my staff couldn't get from Brooklyn to the office in Manhattan." The problem of getting from Brooklyn to Manhattan may continue to shift as employers also shift away from traditional Manhattan neighbourhoods.

13 Nydia Velázquez speech at 5 May 2016 MTA Community meeting, Marcy Avenue Armory, Brooklyn NY.

and a social institution, fulfilling contemporary demands for a more inclusive New York? The shutdown will be universally frustrating, but will fall hardest on those least able to allot extra time for commuting, least able to comfortably pay for convenient alternatives, and most likely to feel that their preferences were not considered in the reconstruction plans. The 5 May community meeting, entailed a deliberate consideration of logistics, strategies, and fine-grained details of the construction plans. L Train reconstruction will be protracted and incredibly inconvenient, but in being so, the project has the potential to make clear some of the conditions of social inequality that exist from one end of a subway line to the other. Not only this, but crises of urban transportation on the scale of post-Sandy recovery set into motion monumental infrastructural and social projects that can also mitigate these inequalities.

The problem with settling into a deep examination of proposed rebuilding, even with the potential social benefits that might attend such a fine-grained discussion, is that the long-term feasibility of the Canarsie tunnel remains unquestioned. After nearly three hours and when only a few dozen of the audience remained at the recent community meeting, I was able to ask Tom Prendergast the last question: "What if there is another Sandy?" He responded:

What happens if there is another Sandy?

We are in a better position today and better prepared. The best solution is that Sandy never happens again, but it probably will. You can argue about global warming, but you can't argue with the fact that the frequency and intensity of storms are increasing.

We've got projects underway to harden the system. If you remember, we put down plywood and sandbags to cover up the 540 subway openings in lower Manhattan alone. Now, we are putting in stainless steel and steel devices to secure the openings. It takes a long time to install these and we are racing. Come October it is four years since Sandy and these are the types of things we are putting in to be prepared.

The newly repaired L Tunnel will have fast-closing steel shutters that recall the blast doors in Star Wars. Some metal parts that were most easily corroded will be replaced with more resistant metals. In places where rigid steel doors are impractical, the MTA is experimenting with giant inflatable plugs. These look like huge tampons. And yet, the effectiveness of these measures against another storm surge equivalent to that of Sandy's remains an open question. The MTA continues to pump out thousands of gallons of water from the subway as a matter of daily practice. Facing an increasing frequency and intensity of storms, how the MTA will keep additional water

out of these tunnels, which at the lowest point of the subway act like a gutter for the city's extra runoff, Prendergast admitted, will be a challenge. Privately, Jeremy, an engineer with over a decade's experience at the MTA, told me that if NYC experienced another Sandy, even with the steel doors and the tampons, what we would need is good luck and probably another round of repairs.



Engineers in West Virginia, financed by the Department of Homeland Security, test an inflatable plug to block flooding in transit tunnels. Photo: *The New York Times*, 21 November 2012.

Sandy left New York with thousands of miles of damaged track, some that were submerged in saltwater for days. The L Train repair project arrives at a particular moment in the post-Bloomberg era marked by municipal and infrastructure improvement and by Mayor Bill de Blasio's commitment to widening the group of who participates in community decision-making. Thus far, the primary discussion has been how to best include the community in post-Sandy repairs, embodying a better version of New York that is both efficient and inclusive. The difficulty with the project as it has unfolded so far is that, like at the community meeting, a reckoning with the environmental conditions within which this T narrative is proceeding has not occurred. We are racing to build it back, Prendergast admitted, because we might have to do so again sooner than we'd like. Even if we do finish, as Jeremy pointed out, there is no way to keep water out of the system if another storm like Sandy hits. The discussion that is not being had, or rather that is being squeezed into the margins, is whether contemporary climatological predictions about sea levels and storm occurrences might change what 'building it back' means today.