PX FORWARD
A CORRIDOR STUDY OF THE PROSPECT EXPRESSWAY
BROOKLYN, NY

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Built between 1953 and 1962, the Prospect Expressway was constructed as a below-grade highway designed to link central Brooklyn with the Gowanus Expressway and the Hugh L. Carey Tunnel, formerly the Brooklyn-Battery Tunnel. Construction of this arterial highway resulted in the disruption to the once tightly-knit fabric of several low-density neighborhoods, including Windsor Terrace, Park Slope, and Sunset Park. To this day, these neighborhoods experience compromised connectivity and cohesiveness, particularly for the pedestrian. It is within this context that the Office of the Brooklyn Borough President engaged a group of four urban planning graduate students from New York University (NYU) in a visioning exercise that also included local residents and workers, elected officials, city and state agencies, and subject matter experts. The object was to identify potential improvement and investment strategies for the Prospect Expressway corridor. The result of this effort is this visioning report.

This report provides an assessment of existing conditions at and around the Prospect Expressway Corridor today, summarizes stakeholder engagement efforts, including a community visioning workshop, explores case studies and best practices on highway treatment precedents from other U.S. cities, and concludes with a set of proposed recommendations and implementation strategies for the Corridor.
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SECTION I: OVERVIEW OF PX FORWARD

Executive Summary

This report, prepared by four NYU urban planning graduate students on behalf the Office of the Brooklyn Borough President, is a product of the NYU Capstone program. Capstone pairs teams of graduate students with real world clients in the public, private, and nonprofit sectors to help them address an organizational issue or challenge of relevance to the client.

The report that follows is a comprehensive study of the Prospect Expressway Corridor. The purpose of this corridor study was multifold: to understand the current condition and functionality of the Prospect Expressway; to establish its relationship to the surrounding residential communities; to identify opportunities for improvement, enhancement, and alteration along the corridor; and to develop a set of recommendations centered around the themes of safety, connectivity, greening, and identity.

The Prospect Expressway is an arterial highway that connects the Gowanus Expressway at Third Avenue to Ocean Parkway at Church Avenue. Built in the 1950s, the Expressway runs 2.3 miles through the low-density residential Brooklyn neighborhoods of South Slope, Windsor Terrace, and Greenwood Heights, and into Kensington. Construction of the Expressway required the demolition of nearly 400 structures and the displacement of more than 1,200 families that were living in its planned path at the time. Today, the Expressway continues to operate as a major thoroughfare, but creates a physical barrier to the communities that live along it. In addition, traffic and circulation patterns pose significant pedestrian safety issues.

PX Forward proposes a safer, more connected, and more livable street grid along the Prospect Expressway. An enhanced Prospect Expressway Corridor could include greater enforcement of traffic safety, an uninterrupted path along the length of the Expressway for pedestrians and cyclists to use both for mobility and recreation, and opportunities for enlarging or enhancing pedestrian decks over the Prospect Expressway.
Project Timeline and Process

In 2017, the NYU Wagner Urban Planning Capstone Team approached the Office of the Brooklyn Borough President with a proposal to update a study of potential decking opportunities over transportation properties that the New York City Department of City Planning (DCP) issued in early 2008. DCP originally identified four railroad yards, five below-ground transit and railroad tracks, and seven roadway corridors in the borough of Brooklyn as potential decking sites. This encompassed sections of Shore Road Drive, the Belt Parkway, the Hugh L. Carey Tunnel, the Brooklyn–Queens Expressway (BQE), the Gowanus Expressway, and the Prospect Expressway.

In partnership with the client, the NYU Capstone Team worked to refine the scope of the project in order to best address an opportunity area that had not yet benefited from further study. The team recognized the heightened attention to and additional work done on many of these areas after the DCP report was released in 2008, particularly with respect to the open roadway cuts. For example, the BQGreen proposal envisions building a park over the below-grade section of the BQE that runs through Williamsburg to create more green space for the city, slash asthma rates, and reduce safety and crime issues in the surrounding area. While this idea has yet to move beyond an initial design phase, advocates on many sides pushing are for the project to gain momentum. Further study has also been conducted on the section of the BQE that runs through Carroll Gardens, Cobble Hill, and the Columbia Street Waterfront neighborhoods. In 2011, the New York City Economic Development Corporation (NYCEDC) commissioned a report to develop a safer, more pedestrian-friendly, and more aesthetically palatable environment in those neighborhoods that are divided by the BQE. Additionally, the Gowanus Expressway cut has been the subject of political and civic banter for decades; calls to bury the highway date back to the 1990s.

The Prospect Expressway, by contrast, has not been studied holistically to date. Rather, recent planning studies have focused on targeted singular issues. In 2013, a local neighborhood association, Windsor Terrace Safe Streets, conducted a survey on improving street safety. The survey’s origins stemmed from neighborhood residents’ desires to improve roadway safety and enhance the intersections in this section of Brooklyn, and their interest in getting public agencies such as the New York City Department of Transportation (NYCDOT) and their local elected officials key to the issue. The survey revealed that perceptions of safety on the street were low, with more than half of respondents reporting that they felt only somewhat safe or not safe traveling on the street as pedestrians. In addition to this localized neighborhood effort, the NYCDOT is currently conducting a truck route study focused on 20th Street, which falls within our Study Area boundaries. The study is exploring the possibility of overhauling existing truck routes on 20th Street and is part of a larger citywide effort to overhaul truck routes and reduce truck congestion throughout the five boroughs.

Based on this extensive literature review, the NYU Capstone Team and the client agreed in September 2017 to focus the study on the Prospect Expressway Corridor, thus officially kicking off the PX Forward project. For the next three months, the NYU Capstone Team researched the history and existing conditions of the Study Area, conducted stakeholder interviews, visited the site, and completed monthly in-person meetings with the client.

On March 14, 2018, in coordination with the Office of the Brooklyn Borough President, the NYU Capstone Team hosted a community visioning workshop to engage directly with residents, elected officials, and neighborhood leaders. To gather additional feedback, the team issued an online survey following the workshop to all participants and previously interviewed stakeholders. A reproduction of the survey questions is included in the Appendices of this report.

The PX Forward visioning process concluded with a presentation of findings and recommendations on May 4, 2018 at the Office of the Brooklyn Borough President.

Goals and Objectives

PX Forward builds upon the previous efforts made by city agencies and concerned citizens. DCP’s initial report and the subsequent traffic and circulation work that has been done in the area, have set the stage for a deeper dive into this roadway cut and its surrounding impacts on the neighborhoods of Windsor Terrace, Greenwood Heights, and South Slope, Brooklyn.

The goal of this report is twofold: first, to assess the existing physical, social, and economic conditions of the area surrounding the Prospect Expressway, and second, to synthesize and respond to input from local stakeholder groups, planning experts, and the community in order to make recommendations for future improvements. This report offers a range of recommendations related to safety, connectivity, mobility and circulation, open space and parks, place making, and amenities that can serve as a road map for prioritizing public investment along the corridor in years to come. It also outlines implementation strategies and general timelines.
Summary of Recommendations

The NYU Capstone Team synthesized stakeholder feedback, best practices research, and planning expertise to propose a set of recommendations to enhance community interactions with the Prospect Expressway and the neighborhoods that surround it. These recommendations are not intended to be a complete catalogue of issues across all topic areas and geographies but rather a range of potential improvements and a catalyst for further study. The implementation steps that accompany these recommendations range in time frame from short- to long-term.

Neighborhood-Wide Recommendations:

- Activate underutilized streets and “dead zones” adjacent to the highway
- Increase transportation options in the neighborhood
- Improve enforcement and routing of trucks
- Enhance pedestrian experience through street improvements
- Strengthen small parks and green spaces

Rethinking the Prospect Expressway:

- Improve experience on pedestrian bridges
- Leverage end of life improvements of vehicular bridges to improve the experience for non-motorized modes of transit
- Study usability, safety, and condition of all on- and off-ramps
- Consider new uses for shoulder space in the highway trench
- Boulevard the highway
- Deck over all or part of the highway trench
SECTION II: THE STUDY AREA

History of the Prospect Expressway

The Prospect Expressway (New York State Route 27) provides a 2.3-mile-long link between central Brooklyn and I-278 as well as the Hugh L. Carey Tunnel. It was built between 1953 and 1962, but its origins lie in an earlier project. Ocean Parkway was constructed in 1876 as part of Frederick Law Olmsted and Calvert Vaux’s desire to build grand parkways radiating from the newly-opened Prospect Park. At 210 feet across, Ocean Parkway established a new concept for large scale road building in America, with a central roadway 70 feet wide, two pedestrian malls 20 feet wide, two side roads both 25 feet wide, and two sidewalks each 15 feet wide. When it opened, the parkway ran approximately six miles from Park Circle (now Machate Circle) near the southwest corner of Prospect Park to a southern terminus in Coney Island.

Although designed to carry leisure travelers between Prospect Park and Coney Island, Ocean Parkway’s size made it an attractive route for traffic traveling from southern Brooklyn to Manhattan and northern Brooklyn. Vehicles had to switch to local streets at Hamilton Parkway, however. As New York City embarked on the highway construction boom overseen by Robert Moses, connecting this traffic to the new arterial network became a key concern.

Starting in 1941, the City Planning Commission wrote of a proposed Hamilton Avenue-Ocean Parkway Connection: “This is an essential part of the approach highway system for the Battery-Brooklyn Tunnel, connecting the tunnel with Ocean Parkway. If the City is to realize the full benefits of the tunnel, adequate approach highways must be provided for it.” By 1945, Robert Moses, then Chairman of the Triborough Bridge Authority, announced a $250 million plan to construct a network of arterial highways, including the Prospect Expressway, the aforementioned Hugh L. Carey Tunnel and the Brooklyn-Queens Expressway. Although relatively small in comparison to the other projects, then-Mayor Robert F. Wagner hailed the Prospect Expressway as a "great link in our arterial system."

The completed highway is shown in red on the map. In the process, Ocean Parkway lost its northernmost section, severing its tie with Prospect Park. Starting at the interchange with Fort Hamilton Parkway and Prospect Expressway, what had been a grand boulevard became two service roads.

In 1975, to prevent any further destruction of the historic roadway, the New York City Landmarks Commission designated Ocean Parkway was a historic landmark, effectively eliminating any plans to extend the Prospect Expressway south through Brooklyn (shown in yellow).

Source Top: HistoricMapWorks.com, Bottom: Regional Plan Association News
Condemnation began in the late 1940s, ultimately displacing more than 1,200 families and requiring the destruction of over 400 structures. Construction was phased starting from the northern interchange with the Gowanus Parkway (which would later become the Gowanus Expressway) until Sixth Avenue, which opened November 30, 1954. Less than a decade later, on June 11, 1962, the final leg from Greenwood Avenue to Ocean Parkway opened.

Sources: Brooklyn Public Library, Brooklyn's Windsor Terrace, Kensington and Parkville Communities
Background and Context

Running mostly below grade in an open-air sunken roadway, the Expressway creates a barrier within the neighborhood of Windsor Terrace before merging with Ocean Parkway in Kensington. Along the corridor, which is densely populated, residents are exposed to air and noise pollution emanating from the below-grade roadway, which the New York State Department of Transportation (NYSDOT) attributes to an annual average daily traffic volume of 105,001 vehicles.16
To consider the broader impacts of the Prospect Expressway on the community, the project’s Study Area includes the Expressway and the surrounding area, generally bounded by Fourth Avenue to the west; Church Avenue to the south; 20th Street, McDonald Avenue, and Greenwood Cemetery to the west; and 15th Street and Prospect Park to the east.

At the neighborhood level, the Study Area encompasses the entirety of Windsor Terrace and portions of Kensington, Greenwood Heights, South Slope, and Sunset Park in the borough of Brooklyn. Administratively, the Expressway and the Study Area are predominately within Community District (CD) 7, with the southern portions falling within CD 12. The Study Area is split between New York City Council District 38, which encompasses points south from Prospect Avenue, 10th Avenue, and McDonald Avenue, and District 39 to the north. New York State Assembly District 44 captures most of the Study Area, with District 51 comprising the southern side of the Expressway after Eighth Avenue. Finally, New York State Senate District 21 includes the majority of the Study Area, except for the area surrounding the Expressway between Fifth and Third Avenues that is within New York State Senate District 20.
Population and Demographics

Kings County is the most heavily populated borough in New York City, with over 2.6 million people calling Brooklyn home. The Study Area, which includes all or portions of 10 census tracts as shown below, is comprised of roughly 37,000 residents.¹

Study Area existing conditions analysis was conducted using 2012-2016 American Community Survey (ACS) census data for 10 census tracts in Brooklyn: 141, 143, 147, 149, 169, 171, 500, 502.02, 504, and 1502.

Most of the Study Area population skews older and is between the ages of 25 and 54 years old. This mirrors overall borough trends but has disproportionately larger numbers of each group within this bracket compared to Brooklyn. The population in the Study Area under the age of 24 is smaller than the rest of Brooklyn, with the exception of children under the age of five.

The majority of the Study Area population is white, making up 62.4 percent of all residents. There is a smaller but still sizeable Hispanic population, at 19.9 percent of all residents. The Study Area has a larger concentration of residents that are white as compared to the rest of Brooklyn (35.8%), a smaller concentration of residents that are black, and roughly the same number of Asian and Hispanic residents. The Study Area is also quite ethnically diverse: residents of Chinese, Puerto Rican, Mexican, Italian, German, and Irish descent, among others, all call this section of Brooklyn home.

¹ Study Area existing conditions analysis was conducted using 2012-2016 American Community Survey (ACS) census data for 10 census tracts in Brooklyn: 141, 143, 147, 149, 169, 171, 500, 502.02, 504, and 1502.
Housing and Income

Median household income within the Study Area is $93,279, which is nearly twice as high as that of Brooklyn overall, at $50,640. The Study Area has a 94.0 percent residential occupancy rate, slightly higher than that of Brooklyn’s 92.0 percent. Of that 94.0 percent, 41.0 percent is owner-occupied housing, and more than a quarter of families living in these owner-occupied units are considered rent-burdened.iii

Between 2012-2016, of the majority (59.0%) of residential units that were renter occupied, 40.1 percent were rent burdened. In 2016, the median gross rent in the Study Area was $1,792, which is 37.0 percent higher than the citywide average of $1,305. The median monthly housing costs for homeowners with a mortgage was $2,726 in the Study Area, which is 5.4 percent higher than the citywide median of $2,579.

Not accounting for properties that have taken advantage of the 421-a tax incentive program, there are few subsidized residential properties within the Study Area.iii The Bishop Boardman Senior Houses, built in 1980, are located on Eighth Avenue and 16th Street and classified as Section 202 Supportive Housing for the Elderly.iv As such, this property benefits from the as-of-right 4% Low Income Housing Tax Credit (LIHTC).v The Odessa Apartments, located at 575 Fifth Avenue and built in 2008, are a discretionary 9% LIHTC property supported by 420c, and the building on 666 Sixth Avenue, built in 1931, has opted in to the HPD Participation Loan Program.vii 17

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ii According to the U.S. Department of Housing and Urban Development (HUD), families who pay more than 30 percent of their income for housing are considered rent burdened.

iii The 421-a Tax Incentive program is a partial real estate tax exemption applied to the new construction of multi-family rental housing. The tax benefit is a construction period exemption, plus a post-construction exemption of varying lengths from the increase in real estate taxes resulting from the work. The program is excluded from this subsidized property analysis, since the program subsidizes construction and property management through exemption from real estate taxes and does not explicitly subsidize housing costs for low-income and/or senior housing.

iv The Section 202 Supportive Housing for the Elderly Program, or Section 202, receives capital advances from the U.S. Department of Housing and Urban Development (HUD) to finance the construction, rehabilitation, or acquisition of buildings that will serve as supportive housing for very low-income elderly persons, including the frail elderly, and provides rent subsidies for the projects to help make them affordable.

v The low income housing tax credit, or LIHTC, is a federal subsidy used for the development of new and preservation of existing affordable housing. It was established by the Tax Reform Act of 1986.

vi The Participation Loan Program (PLP) is run by the New York City Department of Housing Preservation and Development and it provides low-interest loans and/or tax exemptions to multifamily building owners to facilitate the moderate or substantial rehabilitation and affordability of housing for low-to-moderate income households.
Land Use, Zoning, and Urban Design

The Study Area is largely residential with small pockets of manufacturing uses along the western and northern edges of the Study Area and local, commercial retail areas at the northern and southern ends of the area. Prospect Park is designated as park land and Greenwood Cemetery is designated as an R5 residential district. The residential zoning districts within or immediately adjacent to the Study Area range from R5 to R8. The manufacturing zoning districts within or immediately adjacent to the Study Area include M1-1 and M1-2D. The commercial zoning districts within or immediately adjacent to the Study Area include C8-2 and C4-3A. There are also commercial overlays mapped over selected blocks within residential districts, such as Prospect Park West and Prospect Avenue. The regulations governing these zoning districts and their mapping within the Study Area are discussed in greater detail in Appendix I.

Zoning Designations
- Residential Districts
- Manufacturing Districts
- Commercial Districts
- Commercial Overlays

Diagram showing land use, zoning, and urban design within the Study Area.
Special Purpose Districts and Supporting Layers

The Study Area contains portions of two Special Purpose Districts, as shown on the map to the right.

A Special Enhanced Commercial District (EC-1) is mapped along Fourth Avenue from west of 20th Street to east of 15th Street. This district was established in November 2011 to promote a lively presence on the commercial Fourth Avenue corridor. The district encourages a mix of commercial and community facility uses on the ground floor of new developments, and provisions include first floor use regulations, retail transparency requirements, and limitations on parking.

The Special Ocean Parkway District (OP) is mapped over the area bounded by Fort Hamilton Parkway to the north, Coney Island Avenue to the east, Brighton Beach Avenue to the south, and McDonald Avenue to the west. This district was established in January 1977 and served to enhance the qualities of Ocean Parkway following the designation of the road as a scenic landmark. The regulations within the district include requirements that all developments fronting Ocean Parkway have 30-foot-deep landscaped front yards and that accessory off-street parking must be entirely enclosed.

The Study Area includes a number of other special zoning layers that provide access to incentive programs and further regulate land use. There are small Inclusionary Housing Designated Areas mapped on the southeast side of Fourth Avenue between 15th Street and 24th Street. These areas indicate the availability of zoning incentives to support the creation of permanently affordable housing. There are additional Inclusionary Housing Designated Areas mapped to the southeast of the Study Area along a portion of Coney Island Avenue in Kensington. The entire Study Area is designated as a Transit Zone, which reduces the parking requirements for newly-created affordable units. Only a small southeastern portion of the Study Area, bounded by Church Avenue, the Prospect Expressway, Coney Island Avenue, and Greenwood Avenue is mapped within a Food Retail Expansion to Support Health (FRESH) zone. Discretionary tax incentives that support the location and development of healthy, fresh grocery retailers are available within these boundaries. To the northern end of the Study Area, Fifth Avenue north of Prospect Avenue is included within the Park Slope Fifth Avenue Business Improvement District (BID). The Study Area is not included within the Flood Insurance Rate Map (FIRM) risk areas or areas subject to the Waterfront Access Plan.

In terms of historic and cultural resources within the Study Area, a portion of 15th Street between Eighth Avenue and Prospect Park West along Bartel Pritchard Square is located within the Park Slope Historic District Extension, which was designated in April 2012. There are two individual landmarks within the Study Area, including the 14th Regiment Armory, located at 1402 Eighth Avenue, and the Firehouse – Engine Company 40 building, located at 1309 Prospect Avenue.
Two significant rezonings and zoning map amendments have taken place within the Study Area since 2002: the South Park Slope Rezoning (C060054ZMK, effective November 2005) and the East Windsor Terrace/Stable Brooklyn Rezoning (C090197ZMK, effective March 2009), both of which are described below. Additionally, the northern end of the Study Area is adjacent to the large-scale Park Slope Rezoning (effective April 2003) and the southern end of the Study Area is adjacent to the large-scale Flatbush Rezoning (effective July 2009).

The South Park Slope Rezoning was initiated by the Department of City Planning and amended the zoning of 50 blocks bounded generally by 15th Street to the north, Fourth Avenue to the west, Prospect Park West to the east, and 24th Street and Greenwood Cemetery to the south. This rezoning was designed to protect the low-rise character of the neighborhood, reinforce retail corridors, and create opportunities for multifamily residential construction with incentives for affordable housing on Fourth Avenue.\(^\text{20}\) 

The East Windsor Terrace/Stable Brooklyn Rezoning was initiated by the Department of City Planning and amended approximately five blocks within an area generally bounded by Ocean Parkway to the west, Coney Island Avenue to the east, Caton Place to the north, and Caton Avenue to the south. The Stable Brooklyn nomenclature is in reference to the Kensington Stables, located at the corner of East Eighth Street and Caton Place. This rezoning was intended to protect the character of portions of the neighborhood populated by one- and two-family residences and promote a low density environment for future development. The rezoning also established a commercial overlay on Caton Avenue in order to facilitate new retail development in the area.\(^\text{21}\) 

As of early 2018, there was one pending action under a public review process within the Study Area in order to facilitate the development of a nine-story mixed use building with affordable housing units at 57 Caton Place.\(^\text{22}\) Additionally, in March 2018, a deal closed for the purchase of Kensington Stables, located adjacent to the proposed rezoning area. The facility was constructed in 1930 and is one of the last remaining equestrian facilities in the borough. The new owners of the property intend to preserve the property for equestrian use under current management for at least five years and are also planning renovations and development of residential units atop the existing property.\(^\text{23}\)
Land Uses and Built Form

R5-B with C2-4 overlay: Prospect Park West between Prospect Avenue and Prospect Park Southwest

M1-1: 19th and 20th Streets between Seventh Avenue and Prospect Park West

R6-B: 19th Street between Sixth and Seventh Avenues

R5 (West) and R5-B (East): Both sides of Prospect Expressway between 10th Avenue and Seeley Street

R5-B with C1-3 overlay: Prospect Avenue between Vanderbilt Street and Greenwood Avenue

M1-1: 20th Street at Seventh Avenue
The Prospect Expressway is a 2.3-mile, six lane highway that runs above-, below-, and at- street grade.

The Expressway cuts through a relatively high point in Brooklyn’s topography, necessitating a trench to minimize the grade change between the relatively low points at either end.
Bridge Conditions

NYSDOT inspects vehicular bridges regularly and assigns a ranking as either structurally deficient, functionally obsolete, or neither, based on federal standards. NYSDOT then gives each bridge a numerical rating that expresses the overall condition; defining a deficient bridge as one with any rating less than 5.0. The rating for each bridge, along with its most recent assessment date, are shown in the graphic and table.

In addition to the bridges spanning the Prospect Expressway, the Study Area also includes a historic bridge built in 1930 that carries Seeley Street over Prospect Avenue. It is currently owned by NYC DOT and was last inspected on July 7, 2017, when it received a score of structurally deficient at 3.86.

<table>
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<th>NYSDOT Rating</th>
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<td>6.44</td>
</tr>
<tr>
<td>Sixth Avenue Bridge</td>
<td>1954</td>
<td>6.22</td>
</tr>
<tr>
<td>Seventh Avenue Bridge</td>
<td>1958</td>
<td>6.06</td>
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<tr>
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<td>1958</td>
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<td>11th Avenue Bridge</td>
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<td>Seeley Street Bridge</td>
<td>1959</td>
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<td>Fort Hamilton Parkway Bridge</td>
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<td>Caton Avenue Bridge</td>
<td>1961</td>
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<tr>
<td><strong>AVERAGE</strong></td>
<td><strong>1958</strong></td>
<td><strong>5.68</strong></td>
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</tbody>
</table>
Fourth Avenue Bridge (NYSDOT; Built 1955)  
Inspection July 20, 2016: Functionally Obsolete / 5.18

Fifth Avenue Bridge (NYC DOT; Built 1955)  
Inspection May 12, 2016: Functionally Obsolete / 6.44

Sixth Avenue Bridge (NYSDOT; Built 1954)  
Inspection March 3, 2016: Functionally Obsolete / 6.22

Seventh Avenue Bridge (NYSDOT; Built 1958)  
Inspection March 3, 2016: Functionally Obsolete / 6.06

Eighth Avenue Footbridge (NYSDOT)

Eleventh Avenue Bridge (NYSDOT; Built 1959)  
Inspection May 9, 2017: Functionally Obsolete / 6.25

Seeley Street Bridge (NYSDOT; Built 1959)  
Inspection May 9, 2017: Functionally Obsolete / 5.42

Greenwood Avenue Footbridge (NYSDOT)

Eighth Street Footbridge (NYSDOT)

Prospect Park West Bridge (NYSDOT; Built 1958)  
Inspection February 25, 2016: Functionally Obsolete / 4.86

Fort Hamilton Parkway Bridge (NYSDOT; Built 1961)  
Inspection June 6, 2017: Functionally Obsolete / 5.99

Caton Avenue Bridge (NYSDOT; Built 1955)  
Inspection February 2, 2016: Functionally Obsolete / 4.68

Bridge Conditions

Despite the disruption to the street grid as a result of the trench, it is noteworthy that some form of crossing exists at nearly every major thoroughfare.
Transportation

The Study Area is served by multiple public transportation lines. The Metropolitan Transportation Authority (MTA) subway lines D, N, and R reach the western edge of the Study Area at the Prospect Avenue station located at Fourth Avenue and the 15th Street Prospect Park station. The F and G trains also serve the Windsor Terrace neighborhood with stops at the Prospect Park station at the southwest corner of Prospect Park and the Fort Hamilton Parkway station.

The Study Area also has an extensive MTA bus network that includes the B61, B63, B67, B68, B69, and B103 buses, and which provides access to Downtown Brooklyn, DUMBO, the Brooklyn waterfront, Red Hook, Cobble Hill, and Coney Island. Notably, no buses provide service to Manhattan, Staten Island, or Queens. There are also no Express or Select Bus Service stops in the Study Area.\(^{10}\) Express Buses, including the BM1, BM2, BM3, and BM4, run along the Prospect Expressway to connect southern Brooklyn to Manhattan.

\(^{10}\) Select Bus Service is a form of Bus Rapid Transit in New York City. Features included sidewalk extensions for bus stops, large distances between stops, camera-enforced bus lanes, and lane segregation, among others, to improve speed and reliability on certain corridors.
Bike lanes run north and south along Fifth Avenue. In spring 2018, work will begin to convert the Fourth Avenue signed bike routes into protected bike lanes. A protected bike lane currently runs along Fort Hamilton Parkway between East Fifth Street and Prospect Park. Additionally, Prospect Park Southwest is designated as a shared bicycle and automobile road.

Dedicated bike lanes were recently added to 10th and 11th Avenues. Proponents of the bike lanes included school officials who hoped to slow automobile traffic on the avenues through the narrowing of vehicle lanes. NYC DOT has proposed potential future bike routes along 20th Street and McDonald Avenue and also along Prospect Park West between 20th Street and 15th Street.

Citi Bike is New York City’s bike share system. Only one Citi Bike dock is located in the Study Area, at the southwest corner of Prospect Park. Motivate, the company which operates the Citi Bike program, fulfilled its contractual commitment for station siting with the City of New York at the end of 2017 and does not have any stated plans to expand further into new neighborhoods in Brooklyn or elsewhere in the city. That being said, it will continue to maintain existing docking facilities and bicycles, and New York City also recently released a request for expressions of interest (RFEI) for a new dockless bike share program for areas that do not yet have Citi Bike.
Truck Circulation

The Study Area contains both local and through truck routes for freight transportation. Local trucks, which have an origin and destination in the same borough, are routed along 20th Street between Fourth and 10th Avenues. Most local trucks that travel through the Study Area deliver goods between the southern portion of the borough and areas to the north and west. Community Board 7 has reported complaints of trucks illegally driving eastbound on 17th Street to reach the Prospect Expressway on-ramp between Fourth and Fifth Avenues. This has led to traffic backups on Fourth Avenue and has obstructed traffic and created an unsafe environment on 17th Street, which is a relatively dense residential block with on-street parking. NYC DOT has been conducting a 20th Street Truck Route Study. The study seeks to consider options for altering truck routing in the area. One potential outcome presented in the study involves converting 20th Street to solely one-way travel.

Through trucks, which do not have an origin or destination in the borough, are restricted to the Prospect Expressway, the eastbound off-ramp at 10th Avenue, and McDonald Avenue. Trucks on this route are part of national and regional network of highways moving goods between New York City, New Jersey, Long Island, and upstate New York. The Expressway sees heavy through truck traffic, carrying over 10,000 non-interstate through trucks per day. Eastbound through trucks must exit the Expressway when it comes to grade and becomes Ocean Parkway, thereby diverting trucks into residential neighborhoods via Church Avenue, Caton Avenue, and Flatbush Avenue.
Wayfinding & Placemaking

New York City’s agencies are in the process of overhauling many aspects of the city’s pedestrian connectivity and circulation through the addition of new street furniture and the introduction of cutting edge technology into many of its existing operations.

As part of this effort, the New York City Department of Information, Technology, and Telecommunications (DoITT) and its private sector partners are currently on track to remove and replace existing, outdated payphones with new LinkNYC kiosks. These kiosks, or Links, are interactive hubs that provide free Wi-Fi and free domestic calls, act as charging stations for smartphones, and include access to city services to assist in wayfinding. By the end of 2017, over 1,520 links had been installed throughout the city. In Brooklyn, more than 230 Links have been installed.

Links are not prevalent in the heart of the Study Area, primarily because there are not many existing payphones to replace with Links, nor are there long enough straight-line corridors where subterranean fiber can be installed. Along the westernmost edge of the Study Area, there are two installed but inactive Links located on Fifth Avenue at 17th and 19th Streets, respectively, and another two installed and active Links on Fourth Avenue at 18th Street, and on Fifth Avenue at Prospect Avenue. There are plans to install Links along Church Avenue, near the southeastern edge of the Study Area, in the coming years. By contrast, Links can be found dotting the sidewalks along nearby Fifth Avenue, Fourth Avenue and Flatbush Avenue, which are all major commercial corridors with busy roadways.

The Study Area is also home to several public statues. It contains three public monuments and one sculpture, most of which flank Prospect Park’s entrances. The Bartel-Pritchard Circle War Memorial, which honors the lives of those who died in service to the United States, and the Bartel-Pritchard Circle Columns are located on the corner of Prospect Park West and Prospect Park Southwest. The Sixty First District Memorial, which more specifically commemorates the men from Draft Board District 61 who lost their lives in World War I, is located in Greenwood Playground. In addition, the Study Area also contains the Horse Tamers, a sculpture depicting men on horseback, located at Coney Island Avenue and the Park Circle entrance.
Parked

The Study Area is characterized largely by on-street parking. There are surface parking lots along Prospect Avenue that are owned by Arrow Linen Supply Company, Holy Name Church, Walgreens, and Key Foods. Some private buildings have converted green space to surface parking use and many townhomes with recessed streetfronts use driveways for parking.

Availability of Vehicles and Transit Modes

Roughly equal shares of the Study Area population have either no vehicle available (44.6%) or one car available (43.4%). Just 12.1 percent of the population has two or more cars. Vehicle availability is generally higher in the Study Area than it is in Brooklyn and in New York City.

Study Area residents commute to work by a variety of means, but the predominant mode is public transit, which 65.3 percent of residents use to get to work. This is higher than both citywide levels of public transit use, at 52.7 percent, and public transit use in Brooklyn overall, at 61.8 percent. The next most popular mode of transit to work is driving, which is the mode of choice for 12.4 percent of the population. Despite higher levels of vehicle availability in the Study Area than the city overall, driving to work is not as prevalent in the Study Area as it is in Brooklyn and New York City, where 18.5 percent and 27.0 percent of residents drive to work, respectively. Far fewer residents commute by other means, such as biking or walking. Less than 5 percent (3.3%) of Study Area residents bike to work, which, while low, is higher than the rate at which the rest of Brooklyn and New York City residents bike to work.
High Occupancy Vehicle (HOV) Lanes

Since 1993, the Gowanus Expressway has utilized moveable barriers to create additional travel lanes to meet increased travel demand during morning and afternoon rush hours. A similar system is also deployed on the Prospect Expressway to create a contraflow lane heading toward the Hugh L. Carey Tunnel in the normally-outbound lane. Starting just after the Fifth Avenue bridge, commuters can move into the specially-created lane that travels along the roadway used for the southbound Gowanus Exit 24 towards the Hugh L. Carey Tunnel.

In 2013, then New York City Council Member David Greenfield advocated for extending HOV lanes for the length of the Prospect Expressway until the point at which it merges with Ocean Parkway. In his press release, the Council Member said “I know that many Brooklyn residents dread the thought of having to sit in traffic along the Prospect Expressway each morning and afternoon. This is a simple and cost-effective solution that will drastically improve traffic flow, saving thousands of New Yorkers a lot of time and frustration.” As of writing, the HOV lanes have not been extended past the Fifth Avenue bridge.
Quality of Life Indicators

The following section explores indicators that reflect the services, amenities, and environmental conditions as experienced by residents and visitors within the Study Area.

Crime

The Study Area is contained within the boundaries of the 72nd Precinct of the New York City Police Department (NYPD), which also includes the entirety of the Sunset Park neighborhood. NYPD crime data is collected and reported at the precinct level, making it difficult to ascribe statistics to the Study Area. For the period beginning January 1, 2016 and ending November 30, 2017, the 72nd precinct reported 2,139 crimes, or 16.95 crimes per 1,000 residents. This reflects a lower crime rate as compared to nearby precincts, including the 78th (Gowanus, Park Slope) with 25.96 crimes per 1,000 residents and the 76th (Red Hook, Carroll Gardens, Cobble Hill) with 21.17 crimes per 1,000 residents. To the south, the 66th Precinct (Kensington and Borough Park) reported a lower figure for that same period of just 9.79 crimes per 1,000 residents.

The 72nd Precinct has experienced a general decline in all types of crime from 1990 through 2016.

Air Quality

Understanding air pollution for the Study Area is difficult to assess at the neighborhood or parcel level with existing data. Nonetheless, the NYC Department of Health and Mental Hygiene’s (NYC DOHMH) New York City Community Air Survey (NYCCAS) allows for high-level evaluation of local air pollution. According to the most recent NYCCAS for 2008-2014, which was published in 2016, higher levels of fine particulate matter (PM$_{2.5}$), nitrogen dioxide (NO$_2$), and nitric oxide (NO), continue to be observed in areas with higher traffic density, building density, residual oil boilers, and industrial uses. According to NYC DOHMH, the most effective ways to improve air quality are to continue the City’s impressive track record of converting building boilers away from dirty heating oils and to reduce vehicle emissions, particularly from diesel trucks.

Asthma data for the Study Area is reported at the CD level as part of the New York City Community Health Profiles released by the NYC DOHMH. The agency releases profiles for each of the 59 CDs, and the most recent publication was in 2015. The data for Brooklyn CD 7 (Sunset Park), which includes the majority of the Study Area, shows a rate of 18 hospitalizations related to child asthma per 10,000 children aged five to 14 years old, putting it at the 39th lowest citywide. Brooklyn CD 12 (Borough Park), which includes the very southern portion of the Study Area, has the lowest rates of asthma related hospitalizations in New York City at just six per 10,000 children aged five to 14 years old. To put these rates in context, the borough of Brooklyn sees 32 hospitalizations per 10,000 children, and New York City sees 36 hospitalizations per 10,000 children.
Parks, Trees, and Greenery

The Study Area is flanked by two large green spaces: Prospect Park and Greenwood Cemetery. Prospect Park is a 526-acre park that was designed and constructed in the 19th century by landscape designers Frederick Law Olmsted and Calvert Vaux. Prospect Park is visited by eight million people each year and contains a zoo, an Audubon Center, an ice rink, a carousel, a band shell, walking and biking paths, and more. In early 2018, Prospect Park became permanently car-free.

While not officially city parkland, Greenwood Cemetery is another green space in the Study Area. Like Prospect Park, Greenwood Cemetery also dates back to the 19th century. This 478-acre parcel was founded in 1838 and is now a National Historic Landmark. In addition to the services that it provides in its capacity as a cemetery, Greenwood Cemetery contains landscaped elements such as ponds and paths and provides public programming for visitors including seasonal walking and trolley tours, book talks, and other events.

The Study Area is also home to 20 small pocket parks, highlighted on the map below, which run along the length of the Prospect Expressway. Park use, layout, maintenance, jurisdiction, and equipment all vary. For example, some parks are owned by NYC Parks while others are owned by NYC DOT. Additionally, some parks are used as informal dog runs while others contain benches, gym equipment, and other amenities.
New York City's Open Data portal provides New Yorkers with access to a plethora of publicly available datasets, including the Street Trees Map, a web application that documents every tree planted in New York City's streets and provides descriptive information and visuals about different types of tree species.51

The majority of the Study Area falls within the Street Trees Map's Windsor Terrace neighborhood designation. Most of the street grid in this neighborhood is dotted with tree plantings, except for a few pockets along the perimeter of Greenwood Cemetery. Over 95 different tree species thrive in this area, with the most common being the London Planetree, a large, deciduous tree that can grow up to 98 feet tall. NYC Parks estimates that this greenery in Windsor Terrace reduces carbon dioxide levels by 2,003 tons each year and removes 4,282 gallons of air pollutants annually.52

**Noise Pollution**

An analysis of noise complaints logged via New York City's 311 hotline and preexisting research from the Pratt Institute at the CD level does not indicate widespread concern with noise levels throughout the Study Area. However, there may be point- or parcel-level concerns based on proximity to the Prospect Expressway. Analysis of the noise levels at streets and homes immediately adjacent to the highway with dedicated noise reading instrumentation was outside the scope of this report and is thus recommended for further study.
SECTION III: LESSONS LEARNED FROM NATIONAL URBAN HIGHWAY TREATMENTS

To further inform final recommendations about the Prospect Expressway with respect to urban highways and highway cuts, the Capstone Team researched four diverse precedent treatments from cities across the United States: Dallas, TX; Boston, MA; Rochester, NY; and San Francisco, CA. The NYU Capstone Team examined the challenges that each urban highway posed along with the solutions that the respective treatments produced. Treatments range in scope from greening to decking and removal. Commonalities among the four treatments include the transformative power of public-private partnerships, the potential to spur economic development in surrounding areas following intervention, and the adaptation of urban traffic patterns over time. Further details of these case studies and the NYU Capstone Team’s conclusions are described below.

Dallas, Texas: Greening the Highway

Challenge: Dallas’ many urban assets were scattered throughout the disparate neighborhoods of Uptown and downtown, limiting the city’s potential to be a better connected metropolis.

Solution: A green deck over a recessed segment of the freeway, which was originally proposed in the initial designs in the 1960s, was finally realized in the 21st century. The green deck created a new public space that also acted as a linkage between the two neighborhoods.

Description of Project: Klyde Warren Park is a 5.2-acre park built on a deck over Woodall Rodgers Freeway in Dallas, Texas. The idea for this project dates as far back as the 1960s, when the Freeway was designed with one segment recessed below street level and covered by a deck. At the time, the thinking behind the deck was to ensure downtown and Uptown Dallas remained connected despite the highway’s construction. Though the recess was actualized, the deck was never built. The concept resurfaced in 2002 when a member of the Dallas real estate community, John Zogg, began to advocate and raise funds for the forgotten idea. By 2004, Zogg and several others formed the Woodall Rodgers Park Foundation, the organization that would lead the project from start to finish. Construction began in 2009 and the park opened to the public in late 2012.
Klyde Warren Park was designed by the Office of James Burnett and Jacobs Engineering Group, Inc. The final product boasts sustainable landscaping with 37 native plant species and 322 trees. From an engineering perspective, the Park is even with the street, preserves clearance for the Freeway just under it, and is constructed using materials and structures such as Geofoam and specially-designed soil that keep the deck from becoming too heavy. Klyde Warren Park cost $110 million to construct, with funds coming from private and philanthropic donations and public bond, stimulus, and highway funds through the help of a public private partnership comprised of the Texas State and U.S. Departments of Transportation, the City of Dallas, and the Woodall Rodgers Park Foundation.

Today, Dallas residents can enjoy over 1,300 free programs and events at Klyde Warren Park each year, including fitness and educational programming, musical performances, and movie screenings. Amenities include a great lawn, a children’s park, a dog park, water features, a restaurant, and more. The Park has been warmly embraced by the community, won the American Society of Landscape Architects (ASLA) Design Award for Excellence in 2017, and has acted as an economic stimulus for the surrounding, formerly desolate area around the Freeway.53

**Duration of Project:** Construction began in 2009 and was completed in 2012.54

**Lessons Learned:** Reviving long-forgotten urban design ideas is possible; greening highways can substantially improve the environmental conditions and air quality of the surrounding areas; public-private partnerships can be successful financial models for projects of a certain size and scale; proximity to urban green spaces can spur economic development and increase property values.

Source: OJB Landscape Architecture
Boston, Massachusetts: Decking the Highway

Challenge: The Massachusetts Turnpike Extension was almost immediately viewed as a barrier that divided and deadened the neighborhoods around it, shortly after it was constructed in the 1950s.

Solution: In several instances, developers and the city pursued the development of air rights above the highway to help remedy the scar on the landscape and knit the neighborhoods back together.

Description of Project(s): An early precedent for construction over the Turnpike Extension was established when a Star Market in Newtonville that was demolished to clear the right-of-way rebuilt almost immediately on a deck.55

Shortly thereafter, the Prudential Insurance Company built the tallest skyscraper in 1960s Boston as part of a large development that straddled the Turnpike.56

Despite other attempts, the next major air rights project was not completed until 1993, when a public-private partnership resulted in the construction of Copley Place, which included shopping, hotels, and commercial office space, immediately adjacent to the Prudential development.57

Recognizing an unmet opportunity to spur additional development, then-Mayor Thomas M. Menino created a Strategic Development Study Committee of concerned citizens in the fall of 1998. He charged the committee with the task of creating a vision and strategy for how the air rights above the Turnpike could best be leveraged. The committee’s result was an exhaustive study, “Civic Vision for the Turnpike Air Rights in Boston.”
The “Civic Vision for the Turnpike Air Rights in Boston” parceled the Turnpike and carefully analyzed each segment for development potential.

In the early 2000s, the private development firm WinnCompanies proposed Columbus Center, an $800 million project that included a budget of nearly $200 million for the deck alone. Although the developer ultimately prevailed over considerable community opposition and subsequent legal challenges, the Great Recession resulted in an economically infeasible project that was officially halted in 2010. By the end of 2017, however, discussions began to revive the effort. Acknowledging the prior opposition, the new proposal calls for a slightly smaller, more contextually-scaled development. As of this writing, it remains to be seen if the cost of decking the span, which encompasses six lanes of traffic, can be covered with smaller buildings or if the project will again grow to include larger footprints.

After nearly 20 years of stalled attempts, the private developer John Rosenthal has recently been successful in getting the first phase of the Fenway Center in Parcel 7, a highway spanning project adjacent to Fenway Park, into construction. In a departure from Columbus Center, Rosenthal has entered into a cost-sharing lease with the Massachusetts Department of Transportation (MassDOT) for air rights. The lease creates rent credits, which effectively allow the developer to “deduct” the cost of constructing the deck. Additionally, the Boston Redevelopment Authority has granted a Special Tax Assessment (STA) that phases in the assessed value for taxation purposes, further enhancing the viability of the project. In effect, policy makers are treating the deck underneath Fenway Center as a generator of economic development with an eye towards future returns and increased amenities rather than a one-time profit opportunity.

**Duration of Project:** Ongoing.

**Lessons Learned:** Even in a strong real estate market, development costs and engineering challenges can make constructing buildings over a highway trench very difficult; public subsidy, both direct and indirect, is key to surmounting these hurdles; cost-sharing offers a new strategy for encouraging development.
Rochester, New York: Filling in the Trench

Challenge: Rochester’s Inner Loop impaired connectivity and access between the central business district and nearby dense residential neighborhoods.

Solution: Rochester filled in the sunken highway and created an at-grade complete street and new land for mixed-use development.

Description of Project: The I-490 Inner Loop, completed in 1965, is a sunken highway bordering Rochester’s central business district on all sides. The expressway was conceived in the 1950s as a means to alleviate downtown traffic congestion. The project is representative of midcentury planning that focused on creating automobile infrastructure with the effect of demolishing structures and dividing neighborhoods. Since construction, the highway has garnered a reputation as a physical and mental barrier between downtown and the surrounding residential districts, acting as a “noose around the city’s neck.”

In the 1990s, the city began discussion on removing the eastern portion of the highway that separated downtown from “thriving” neighborhoods. The city initiated a traffic study in 2001 and created preliminary designs for a filled-in highway shortly thereafter. The project gained momentum with support from elected officials, advocacy groups, and local media outlets. In 2013, Rochester applied to the United States Department of Transportation’s Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program to fund the formalized Inner Loop East Reconstruction Project. The project was positioned as a tool for revitalizing Rochester’s downtown and spurring private investment.
Rochester won a TIGER grant amounting to more than $17 million and began the process of removing a ⅓-mile portion of the Inner Loop. In 2017, conversion of the expressway into an at-grade two-way boulevard with six acres of developable land was completed. The project ultimately cost $23.6 million. The city’s vision for enhanced circulation, accessibility, and mixed-use development is slowly beginning to be realized. Development of the newly-created land is underway and will include mixed-income apartments, townhomes, commercial space, retail, and an expansion of the Museum of Play. Thanks to the success of the project, Mayor Lovely A. Warren has suggested filling in more of the highway, specifically a mile-long stretch on the northern side of the city. Warren is hopeful that this treatment could bring similar investment to some of the city’s historically impoverished neighborhoods.

Duration of Project: Construction began in 2014 and was completed in 2017.

Lessons Learned: Filling in highways can enhance accessibility between neighborhoods; creating developable space can drive economic development and real estate investment in both downtowns and bordering residential neighborhoods; at-grade streets can support multiple modes of transit while enhancing traffic safety; federal grants can go a long way in funding visionary projects.
San Francisco, California: Boulevarding

**Challenge:** A highway spur separated neighborhoods from the waterfront and inhibited transit network connections.

**Solution:** The city removed portions of the freeway and replaced it with a multi-use boulevard and public open space improvements.

**Description of Project:** The Embarcadero Freeway (Route 480) was originally constructed under the premises of modernization and post-war progress as part of a larger plan to build a freeway network that connected points across the city of San Francisco. The intent behind the Freeway, which began construction in 1953, was to provide access between the Bay Bridge and the Golden Gate Bridge; however, it was never completed and resident opposition (the “Freeway Revolts”) led the Board of Supervisors to cancel plans for the network and curtail ongoing projects. This left the Embarcadero Freeway as an unfinished, 1.2-mile elevated “stub” route.

The Embarcadero Freeway physically cut San Francisco’s northern waterfront from the remainder of the city and featured ramps that terminated within neighborhoods. The built form that developed around the Freeway was unwelcoming, with architecture that was disengaged at the pedestrian level, and the Freeway itself (at 70 feet high and 52 feet wide) was an imposing structure. Traffic levels reached as high as 100,000 vehicles per day on the most-used portions of the Freeway.

Proposals to remove the Freeway first surfaced during the 1980s, including a 1986 proposal to replace the structure with bike and pedestrian paths, a streetcar line, and renewed open space. The City of San Francisco maintained a general position in favor of removal, but voters who feared surface street gridlock and were distrustful of large government-led infrastructure and planning projects struck down proposals three times. The plans also suffered from a lack of financing and jurisdictional issues, particularly between the State of California’s Department of Transportation (CalTrans) and the City.

In October 1989, the 7.1-magnitude Loma Prieta earthquake struck San Francisco and damaged and destroyed portions of the Freeway, which were subsequently closed to traffic. Despite initial congestion increases, there were no permanent disruptions as a result of the closures and other streets absorbed excess traffic flow. With this demonstration of potential, residents of the city began to support plans for replacement of the Freeway, with the exception of a group of vocal opponents including Chinatown merchants who feared loss of business and isolation of their neighborhood. The comparative cost savings ($50 million for boulevarding versus a final cost for reconstruction of $70 million) was another draw. Then-Mayor Art Agnos, a longtime supporter of demolition, pushed back against the state and worked with a variety of City agencies to push a demolition plan forward. The City’s Board of Supervisors voted 6 to 5 for demolition and replacement with a boulevard, trolley line, and waterfront park; and removal of the Freeway began in 1991.
In the late 1990s, the Port of San Francisco adopted a Waterfront Land Use Plan to define city goals and guide development for the Embarcadero area. In 1998, there was a proposal to construct a cut-and-cover tunnel at the site of the demolished Freeway but this was shelved due to lack of funding. ROMA Design Group, which had been working for the City and County of San Francisco, was selected to design the Embarcadero Plaza and Ferry Terminal renovation project. A number of other consultants assisted with the project.

The boulevard project, which began in 2002, created a dynamic, multi-modal boulevard with two banks of thoroughfare traffic, including three lanes running in each direction with a streetcar line running down the center. The planning effort took place over a ten year period and involved substantial community input and a citizens’ advisory committee. In addition to the boulevard itself, a larger $700 million collection of projects completed by the mid-2000s included adding bicycle lanes, a 25-foot-wide waterfront promenade, an extension of the MUNI light rail system, open space improvements, and landscaping elements.\(^{68}\)

Today, the Embarcadero Boulevard is widely considered to be a success. The boulevard carries approximately 26,000 vehicles per day and other traffic has been absorbed elsewhere or has been eliminated through switching modes.\(^{59}\) More than 100 acres of prime land along the waterfront has been converted to public plaza and promenade space. The project has spurred private investment and economic development as well, including the redevelopment of industrial and manufacturing land for dense mixed-use purposes. The area attracts many residents, employees, and visitors who are drawn to the diversity of uses and active streets along the waterfront. Though some challenges remain, including activating the back sides of existing buildings to form a more coherent, connected waterfront, the Boulevard and related projects have been credited with “singularly chang[ing] the character of the northern waterfront” and creating “an outdoor living room for San Francisco.”\(^{70}\)

**Duration of Project:** Formal demolition began in 1991, and construction of the waterfront boulevard and the majority of adjacent projects took place during the 2000s.

**Lessons Learned:** Urban traffic patterns can adapt to changes in the network with alternate routes and reduced reliance on cars; boulevarding provides opportunities for a wider variety of travel modes; freeway removal can increase property values and spur economic redevelopment; maintaining public access to waterfront and other scenic features is important; political will and public trust are key to successful project completion.
Stakeholder Engagement

Community input provided an invaluable local perspective to articulate needs and set goals throughout the planning process. The NYU Capstone Team worked closely with the Office of the Brooklyn Borough President to identify and contact key partners, community leaders, and experts for one-on-one conversations. The team conducted dozens of interviews by phone and in person with relevant public agencies, elected officials, local residents, business owners, and experts in the field of urban planning. The team captured notes and takeaways from each interview, though interviewees could give their feedback anonymously if desired.

SECTION IV: STAKEHOLDER OUTREACH AND COMMUNITY ENGAGEMENT
Community Workshop

The NYU Capstone Team’s stakeholder engagement process culminated in a Community Workshop that contributed to, and built on, findings and themes that emerged during the initial interviews. The event was held in Shephard’s Hall at Holy Name Church on March 14, 2018, with 42 people in attendance. Participants had the opportunity to express their views and opinions about living with the Expressway, as well as share ideas for adjustments and improvements along the corridor. Workshop activities centered around large-scale interactive maps of the Expressway, street-level views of various corridors and intersections, and voting stations that asked participants to give weight to neighborhood priorities.

Participants’ insights on safety, mobility, and circulation informed the bulk of recommendation development. Workshop attendees also gave rich, specific feedback on their experiences with a variety of intersections, on- and off-ramps along the Expressway, and traffic patterns that all contribute to congestion and a hazardous environment for pedestrians and cyclists.
Workshop participants interact with the stations and provide feedback on neighborhood priorities, experiences, and concerns.

Workshop participants also shared their thoughts on other topics, including the ways they use parks and open spaces in and around their neighborhood, along with potential alternate design schemes they have contemplated for the Expressway.
Public Survey

Following the workshop, the NYU Capstone Team distributed an online survey to all workshop participants, as well as all other previously-engaged stakeholder groups and individuals. Questions focused on respondent relationship to the neighborhood, interaction with the Expressway, and preferred transportation mode, among other topics. A total of 72 responses were recorded. A copy of the survey can be found in Appendix II.
When developing final recommendations, the NYU Capstone Team considered the Prospect Expressway and the immediately surrounding communities, resulting in 11 recommendations and a variety of proposed actions and opportunities for further study. The recommendations are informed by a thorough assessment of existing conditions in the Study Area, extensive stakeholder engagement, an analysis of key issues and opportunities, and best practices. The recommendations are organized around four major themes:

**SAFETY**

A safe neighborhood allows residents of all ages to feel comfortable using streets and sidewalks whether walking, biking, or driving. The Prospect Expressway poses a unique safety challenge for the Study Area. Transition points from the Expressway to local streets and intersections are sites of conflict between pedestrians, cyclists, and drivers. The Expressway can encourage aggressive driving on local streets as drivers transition from a high-speed arterial highway to a low-speed residential street. The following recommendations seek to promote a safer environment for all modes of transportation through a series of design interventions.

**CONNECTIVITY**

Connectivity in a neighborhood affects whether people can travel between destinations comfortably and efficiently by a variety of modes. The Prospect Expressway hinders connectivity dividing the neighborhood in two and creating a barrier between the communities on either side. The following recommendations suggest ways to overcome this division and to make it easier for people to move about the Corridor.

**GREENING**

A greener neighborhood increases urban residents’ access to parks and open spaces. This is particularly important in cities because green spaces can improve air quality, reduce noise pollution, and boost the health outcomes of residents. Recognizing that the Prospect Expressway Corridor is bordered by Prospect Park, Greenwood Cemetery, and multiple small parks, our recommendations seek to capitalize on opportunities to enhance these green community assets and incorporate new ones into a cohesive set of public spaces for the Corridor.

**IDENTITY**

Neighborhood identity is shaped by a keen sense of place and a vibrant public realm; connection to opportunities for recreation, education, and health; good urban design; and an exchange of ideas. The street network, open spaces, lighting, noise levels, and a host of other factors all influence people’s day-to-day experiences and sense of identity in the Corridor. Stakeholders have expressed appreciation for certain neighborhood conditions and have identified opportunities for improvement to others. Taken together, recommendations that address these conditions can enhance the formation of a positive neighborhood identity in the Prospect Expressway Corridor.
**Approach**

Guided by these four major planning themes, the following recommendations are divided into two categories: (1) Neighborhood-Wide Recommendations, which addresses the Study Area as a whole, and (2) The Prospect Expressway, which considers potential improvements to the highway corridor itself and how the community interacts with it.

The recommendations contained in this report reflect a synthesis of stakeholder feedback, best practices research, and the planning expertise of the NYU Capstone Team. These recommendations, and the action items and proposed locations that accompany them, are not intended to be a complete catalogue of issues across all topic areas and geographies but rather a range of potential improvements at priority locations and a catalyst for further analysis and study.

The implementation steps that accompany these recommendations are categorized according to timeframe. Short-term steps can be accomplished in one to three years, medium-term steps require a period of three to five years, and long-term steps are intended as projects with a timeframe extending beyond five years.
## Neighborhood-Wide Recommendations

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<tr>
<th>Recommendation</th>
<th>Partners and Stakeholders</th>
<th>Themes</th>
<th>Suggested Implementations</th>
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<tbody>
<tr>
<td><strong>Activate underutilized streets and “dead zones” adjacent to the highway</strong></td>
<td>NYC DOT</td>
<td>![People and Car]</td>
<td>Investigate feasibility of constructing a protected two-way bike lane along 19th Street and McDonald Avenue to activate an otherwise underutilized area and generate ownership for these spaces*</td>
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<td>Champion public art installations to activate spaces</td>
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<td>Study the installation of additional overhead street lighting, particularly at locations where the street grid is interrupted</td>
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<td><strong>Increase transportation options in the neighborhood</strong></td>
<td>NYCT, NYC DOT, MTA, Bike share operators</td>
<td>![People and Car]</td>
<td>Advocate for the introduction of bike share around the Corridor</td>
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<td>Push for extending the B68 local bus route further west to increase connectivity between Windsor Terrace and Park Slope</td>
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<td>Promote the modification of express bus routes (BM1, BM2, BM3, BM4) that travel along the Prospect Expressway to include a stop within Windsor Terrace</td>
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<td><strong>Improve enforcement and routing of trucks</strong></td>
<td>NYSDOT, NYC DOT, NYPD</td>
<td>![People and Car]</td>
<td>Advocate for increased traffic enforcement agent presence in the neighborhood</td>
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<td>Conduct a comprehensive review of traffic cameras present in the neighborhood to understand current distribution and potential opportunities for expansion</td>
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<td>Study feasibility of a protected left hand vehicular turn lane where the Prospect Expressway intersects with Church Avenue*</td>
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*As heard during the March 14th Community Workshop
### Neighborhood-Wide Recommendations

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<tbody>
<tr>
<td>Enhance pedestrian experience through street</td>
<td>NYC DOT, LinkNYC, WalkNYC</td>
<td>Improve overall street experience; increase safety</td>
<td>Advocate for study of intersection at Ocean Parkway and Church Avenue with an eye to improve usability and improve safety</td>
<td>Short Term</td>
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<td>improvements</td>
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<td>Initiate discussions to create a 4-way stop at Seeley and 19th Street*</td>
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<td>Investigate feasibility of modifying light sequence at 10th Ave and 19th Street, a primary travel corridor for students, to improve safety</td>
<td>Medium Term</td>
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<td>Push for installation of WalkNYC wayfinding signage on major thoroughfares and nearby subway stations</td>
<td>Short Term</td>
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<td>Examine feasibility of bringing LinkNYC kiosks to major thoroughfares and parks alongside the corridor</td>
<td>Medium Term</td>
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<td>Strengthen small parks and green spaces</td>
<td>NYC DOT, NYC Parks, Greenwood Cemetery</td>
<td>Enhance green spaces; improve safety</td>
<td>Call for the creation of a comprehensive parks plan to connect the currently disassociated green spaces along the Corridor, e.g. a “Ribbon of Parks”</td>
<td>Long Term</td>
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<td>Initiate discussion with stakeholders on addition of amenities within parks, including seating, gym equipment, dog runs, play structures, community art, and small vendors as appropriate</td>
<td>Short Term</td>
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<td>Champion public art installations to activate spaces</td>
<td>Short Term</td>
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<td>Advocate for improved direct neighborhood access to Greenwood Cemetery via entrance at Prospect Park and 20th Street, which is currently only open on weekends between 8 AM and 4 PM</td>
<td>Short Term</td>
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<tr>
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<td></td>
<td>Study vacant land along the corridor for possible conversion to parks or other public spaces</td>
<td>Long Term</td>
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</tbody>
</table>

*As heard during the March 14th Community Workshop*
### Rethinking the Prospect Expressway

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Partners and Stakeholders</th>
<th>Themes</th>
<th>Suggested Implementations</th>
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</thead>
<tbody>
<tr>
<td>Improve experience on pedestrian bridges</td>
<td>NYS DOT</td>
<td>Advocate for the application of decals, vibrant paint schemes, or public art to pedestrian bridge bases and explore partnership with community arts groups for design and installation</td>
<td>Short Term</td>
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<td>Initiate discussion with stakeholders on improved landscaping and additional plantings at entrances to bridges</td>
<td>Short Term</td>
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<td>Investigate alternative designs to existing chain-link safety cages</td>
<td>Medium Term</td>
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<td>Push for incorporation of additional overhead lighting and public safety features along the length of pedestrian bridges</td>
<td>Short Term</td>
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<td>Leverage end of life improvements of vehicular bridges to improve the experience for non-motorized modes of transit</td>
<td>NYS DOT, NYC DOT</td>
<td>Convert one-way bike lane to a two-way bike lane on Fort Hamilton Parkway bridge</td>
<td>Medium Term</td>
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<td>Study feasibility of reconfiguring existing bridges to mirror the Seventh Avenue bridge with increased footprint for greater utilization and new programmable spaces</td>
<td>Long Term</td>
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<tr>
<td>Study usability, safety, and condition of all on- and off-ramps</td>
<td>NYS DOT, NYC DOT</td>
<td>Initial study areas identified by stakeholder engagement include: 17th Street on-ramp, Fort Hamilton off-ramp, Eighth Avenue off-ramp, Add access at Third or Fourth Avenue</td>
<td>Medium Term</td>
</tr>
<tr>
<td>Consider new uses for shoulder space in the highway trench</td>
<td>NYS DOT, NYC DOT, Private developers</td>
<td>Champion the development of the Prospect Path, a cantilevered linear park running along the below-grade length of the Expressway</td>
<td>Long Term</td>
</tr>
<tr>
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<td></td>
<td>Conduct feasibility study of real estate development in underutilized highway shoulders</td>
<td>Medium Term</td>
</tr>
<tr>
<td>Boulevard the highway</td>
<td>NYS DOT, NYC DOT, NYC DDC, External landscape architects</td>
<td>Study the feasibility of converting the highway into a multimodal boulevard</td>
<td>Long Term</td>
</tr>
<tr>
<td>Deck over all or part of the highway trench</td>
<td>NYS DOT, NYC DOT, NYC DDC, External urban design &amp; engineering consultants</td>
<td>Initiate a feasibility study of adding a deck over the highway to add open space for pedestrians and cyclists, and/or developable land for housing/commercial use</td>
<td>Long Term</td>
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Neighborhood-Wide Recommendations: Strengthen small parks and green spaces

Establish the Prospect Ribbon along the Prospect Expressway Corridor

Nearly two dozen pocket parks are located along the Prospect Expressway Corridor. Type and level of use, as well as level of maintenance, vary among each of these small green spaces. Creating a ribbon park system would connect the currently disjointed parks into a formal network and create a consistent standard of park quality and offerings for the community.

Parks within the Prospect Ribbon could each get cosmetic upgrades to establish a uniform feel across parks. Upgrades might include fresh layers of paint at park walls, wayfinding maps indicating the name and location of the park and its place within the wider network, new gates, repavement, and decorative plantings. Other improvements could include the development of marketing materials to create a branded identity for the small parks and seasonal vendors selling snacks, beverages, and other wares to promote local goods production and diversify park offerings. Parks within the ribbon system could also be outfitted with new facilities and equipment, including benches and children’s play structures.

Creating more defined linkages between each of these small parks would strengthen the public realm and would reinforce a sense of neighborhood identity within the Corridor. It would also more actively utilize the green space that is already present along the highway corridor. Moreover, similar to the Prospect Path, the Prospect Ribbon would increase safety along the corridor by promoting more street activity and enhancing cosmetic park features such as better and more abundant lighting.

A similar idea was recently proposed for parks in Downtown Brooklyn. The Brooklyn Strand concept reimagines a series of disconnected parks and plazas as a connected park thread. While the plan remains under consideration, the aesthetic concept developed provides a potential design and branding precedent for the Prospect Ribbon.

Source: WXY
Rethinking the Prospect Expressway: Improve experience on pedestrian bridges

There is an opportunity in the near term to improve the experience on pedestrian bridges throughout the corridor. Potential interventions to accomplish this improvement could include:

Application of decals, vibrant paint schemes, or public art to pedestrian bridge bases: Colorful, well-designed aesthetic additions to the bridges would enhance the experience of walking across the bridge while also creating a unifying, recognizable visual identity for these connections across the highway. Local arts or educational groups could be good partners for design, fabrication, and installation of decals or murals and their participation would increase the sense of community ownership over these spaces.

Improved landscaping and additional plantings at entrances to bridges: The current conditions of the sites at the entrances and exits of pedestrian bridges could be improved by adding intentional plantings and landscaped green spaces that would create an inviting transition from the sidewalk to the bridges themselves. In addition to initial capital costs, funding and plans for ongoing maintenance should be considered and assigned to the appropriate parties to ensure that the newly-planted green spaces remain healthy over many seasons.

Alternative designs for existing chain-link safety cages: Redesigned safety cages would bring additional artistic or greening elements to the bridges, and would also enhance pedestrian comfort and safety by allowing for more air flow and additional light. In addition to structural guardrails and coverings, new bridge infrastructure could include public safety features such as call boxes and overhead lighting elements. The bridges are State-owned, so realization of this idea will require participation and buy-in by NYSDOT and State lawmakers.
Rethinking the Prospect Expressway: Leverage end of life improvements to vehicular bridges to improve the experience for non-motorized modes of transit

Along the corridor, the average age of vehicular bridges is 60 years old, making it likely that NYSDOT may consider undertaking capital projects to rehabilitate or replace these structures in the coming years. This presents the opportunity to make concurrent improvements that would enhance the experience of people riding bikes or walking over these bridges. The existing Seventh Avenue bridge offers a good model for a bridge width that could accommodate multiple modes and programmable spaces. Expanding the bridges would improve connectivity and safety by creating space for new bike lanes and broader pedestrian sidewalks while retaining the existing level of capacity for vehicle traffic. Bridges over the Prospect Expressway, with the exception of the Fifth Avenue Bridge, are State-owned, so realization of this idea will require participation and buy-in by NYSDOT and State lawmakers.
Rethinking the Prospect Expressway: Study usability, safety, and condition of all on- and off-ramps

Initial study areas identified by stakeholder engagement include the on-ramp at 17th Street, the off-ramps at Eighth Avenue and Fort Hamilton, and additional access at Third or Fourth Avenues. Changes to the on- and off-ramps could include closing ramps, creating pedestrianized streets, and traffic calming design interventions. On- and off-ramps are State-owned road, so realization of this idea will require participation and buy-in by NYSDOT and State lawmakers.

17th Street on-ramp (Top): This on-ramp poses a safety and quality of life challenge for nearby residents. Cars and trucks travel at high speeds along the block as they approach the on-ramp. This creates an unsafe environment for pedestrians and contributes to noise pollution. Further study should be undertaken to determine the feasibility and impact of closing the on-ramp.

East Fifth Street off-ramp (Upper Right): The off-ramp at Fifth Street leading to the Fort Hamilton Parkway brings heavy traffic and speeding to residential blocks and to the adjacent Greenwood Playground. Studies should consider the possibility of closing the off-ramp and creating a pedestrian-only zone on East Fifth Street from Greenwood Avenue to Fort Hamilton Parkway.

Eighth Avenue off-ramp (Right): The intersection of Eighth Avenue and 18th Street has been recognized as a confusing and unsafe conflict point for pedestrians and drivers. Drivers exit the Expressway at high speeds and often disregard traffic lights. Further study should consider design interventions to reduce speeds on the off-ramp, clarify right-of-way, and improve pedestrian safety at the intersection.
Rethinking the Prospect Expressway: Consider new uses for shoulder space in the highway trench

Develop the Prospect Path, a cantilevered linear park running along the below-grade length of the Expressway.

The Prospect Path envisions the development of a cantilevered linear park running along a segment of the southern length of the Prospect Expressway. The linear park could be cantilevered to both extend the sidewalk and improve user experience by creating height and distance from vehicular traffic. The Prospect Path could also incorporate elements such as dedicated walkways for pedestrians, bike lanes for cyclists, passive seating, and planters.

The Prospect Path would provide an opportunity to increase the amount of and access to open space available to the neighborhoods in the surrounding geographic area. The Prospect Path would realize significant benefits for area residents. Adding trees and planters along the Path would improve both air and noise quality by absorbing air pollutants as well as noise reverberations. Abundant lighting along the length of the Path, as well as increased activity along the Path, would add more ‘eyes on the street’ which would in turn improve safety and the sense of a secure environment.

Linear parks as an urban design concept have caught on around the country. In New York City, the High Line demonstrates the viability of a linear park in a constrained urban environment, while the Hudson River Park Greenway illustrates the success of activating spaces directly adjacent to a busy roadway. The land adjacent to the Prospect Expressway (Route 27) is State-owned, so realization of this idea will require participation and buy-in by NYSDOT and State lawmakers.
Rethinking the Prospect Expressway: Consider new uses for shoulder space in the highway trench

Conduct feasibility study of real estate development potential in underutilized highway shoulders.

The Prospect Expressway was constructed according to best practices in the mid-20th century, which included wide shoulders on either side of the roadway that slope upwards towards street level. These areas, although owned and maintained by NYSDOT, are not landscaped and provide limited utility to the community today.

A feasibility study would need to be completed in conjunction with NYSDOT to determine if these underutilized spaces could be leveraged for real estate development whereby buildings are constructed on a pedestal or other elevated structure to be level with the street. New buildings constructed in this manner, particularly along 18th and 19th Streets, could provide community amenities, commercial development opportunities, or even new housing units. Existing residents would benefit from these increased commercial and residential offerings, as well as from the mitigation of road noise achieved through the presence of new structures.

Within New York City, the Queens Library in Briarwood, Queens (pictured upper right) offers an illustrative precedent for how development could look and feel to both pedestrians and motorists alike.
Rethinking the Prospect Expressway: Boulevard the highway

Study the feasibility of converting the highway into a multimodal boulevard.

Inspired by Ocean Parkway, the city could reimagine the Prospect Expressway by boulevarding it, which might include reducing the number of vehicle traffic lanes and introducing new paths for cyclists and pedestrians. Adding medians, traffic signals, dedicated bus lanes and pedestrian crossings would create a safe and attractive space for multiple modes of transportation. Reclaimed roadways could also be converted to protected open green space with pedestrian infrastructure.

In order to boulevard, the Expressway trench could be filled in to bring the highway to grade, as was done in Rochester, NY. The boulevard could also be created within the trench, with the addition of infrastructure such as stairs and inclines that would connect pedestrians and cyclists to the below-grade portion of the Expressway.

Boulevarding would enhance mobility for pedestrians and cyclists by providing more points of connectivity across and along the Expressway. Converting the Expressway into a multi-modal thoroughfare would also calm traffic, thereby enhancing safety. The addition of pedestrian green space would promote opportunities for recreation. The Regional Plan Association (RPA) also explored the potential benefits of boulevarding the Prospect Expressway when they proposed the concept in their Fourth Regional Plan.

Successful examples of highway boulevarding in the United States include Manhattan’s West Side Highway below 72nd Street and the Embarcadero in San Francisco. Additionally, Governor Cuomo recently announced the decommissioning and conversion of the Bronx’s Sheridan Expressway into a boulevard. Because the Expressway is a State-owned road, boulevarding will require participation and buy-in by NYS DOT and State lawmakers.
Rethinking the Prospect Expressway: Boulevard the highway

To help visualize what boulevarding the Prospect Expressway could look like, consider the below rendering.
Rethinking the Prospect Expressway: Deck over all or part of the highway trench

Initiate a feasibility study of adding a deck over the highway to create open space for pedestrians and cyclists and/or developable land for housing or commercial use.

Decking over the Prospect Expressway would involve the construction of a structure to create new land over the existing highway for a variety of potential uses, which could include public parks, open space, or commercial real estate development. In addition to the recreational and economic development benefits a deck would provide, the new infrastructure would help improve connectivity by remapping streets and would reduce noise and environmental pollution by placing a physical barrier between houses at grade and vehicular traffic below.

The design of a deck could range from a structure spanning the entire width and length of the existing trench to truncated “demi-decks” covering portions of the trench’s length. A deck could also be constructed to extend the existing land on either side of the trench into the airspace above the highway at grade level.

New York City has constructed decks or otherwise built above highways in several places throughout the city, including the George Washington Bridge Bus Station and Bridge Towers apartments over the Trans-Manhattan Expressway in Washington Heights, Manhattan as well as the Rockefeller University River Campus Extension over the Franklin D. Roosevelt Drive on the Upper East Side bordering the East River. Albany Crescent, an elevated roadway that extends out over the Major Deegan Expressway between Marble Hill and Kingsbridge in the Bronx, illustrates the concept of a partial deck to extend land over a highway segment.

A future feasibility study should address a number of considerations. It should include a fiscal analysis to determine the development conditions, density, and uses required to fund the construction and maintenance of a deck, along with the land use actions that might need to accompany such a change. As in other cities, innovative partnerships between federal and local governments and private parties may present a unique funding opportunity. Additionally, a study should examine the engineering constraints, ventilation requirements, and cost estimates for several build scenarios, lengths, and coverage widths at different geographic points along the trench. Due to existing open space within and above the trench, construction might involve parkland alienation and associated mitigation. Private ownership of parcels adjacent to the trench could create political difficulties and any further study should assess the legal regulations for preserving light and air for existing properties. Finally, the Prospect Expressway (Route 27) is a State-owned road, so participation and buy-in by NYSDOT and State lawmakers will be important.
Rethinking the Prospect Expressway: Deck over all or part of the highway trench

To help visualize what decking could look like, consider the below renderings provided pro bono by BHA, a local architecture firm with offices that overlook the Expressway.²⁹

Top (Before) and Bottom (After): Looking east from 6th Avenue Bridge
Top (Before) to Bottom (After): Looking east from 5th Avenue Bridge
SECTION VI: WORKS CITED

All photography by Sebastian Coss, Efthia Thomopoulos, or Anjali Tsui unless otherwise noted.


65. Ibid.


Appendix I

The following information sources data from the New York City Department of City Planning (DCP) Zoning Handbook and the Zoning District and Tools page of the DCP website.

Residential Zoning Districts

R5 districts are mapped broadly in Brooklyn, Queens, and the Bronx and enable a transition between lower and higher density districts. R5 districts generally contain three- and four-story attached houses and small apartment houses. R5B districts are contextual districts that consist primarily of three-story rowhouses.

R6 districts are medium density and are mapped broadly across Brooklyn. R6A contextual districts help to ensure consistency with the built form of older, more historic structures. R6B contextual districts are frequently home to traditional row houses and are intended to preserve the scale and streetscape of neighborhoods with four-story attached structures built during the 19th century.

R7A districts are medium density districts that generally result in seven- to nine-story apartment buildings in established neighborhoods. R7B districts are also contextual districts that typically produce six- to seven-story apartment buildings.

R8A districts produce 12- to 14-story apartment buildings, and R8B contextual districts produce taller, up to six-story brownstone buildings that match the unified blocks of rowhouses found in neighborhoods such as the Upper East Side in Manhattan.

Commercial Zoning Districts

C4 districts are commercial districts that promote continuous retail frontage and generally typify regional commercial centers located outside of central business districts. The commercial and office uses in these districts, such as department stores and theaters, serve a larger region than neighborhood shopping areas. C4-3A districts are contextual districts that are mapped in more densely-built areas such as Steinway Street in Astoria and parts of Jamaica, Queens.

C8 districts are primarily mapped along major traffic arteries and serve as a bridge for commercial and manufacturing uses. They allow for automotive and other heavy commercial uses such as showrooms and repair shops, warehouses, gas stations, and car washes. All commercial uses, with the exception of open amusements, along with some community facility uses are permitted in C8 districts, but housing is not permitted.

Commercial Overlays

Commercial overlays are C1 or C2 commercial zoning districts that are mapped in conjunction with residential districts to allow for the development of local retail uses, such as grocery stores, restaurants, salons, and dry-cleaning establishments. The allowable uses are broader within C2 overlay districts than C1 and can include commercial uses such as funeral homes and repair services. The commercial overlay district types found within this Study Area include C1-3, C2-3, and C2-4.

Manufacturing Zoning Districts

M1 districts are the lowest-intensity manufacturing districts and are characterized by buildings ranging from multi-story lofts to one- or two-story warehouses. These districts can serve as buffers between heavier manufacturing areas and residential and commercial uses, and generally include light industrial uses including woodworking shops, repair shops, and storage facilities. M1 districts also allow offices, hotels, some community facility, and most retail uses.
Appendix II

Prospect Expressway Corridor Survey

* Required

Name
Your answer

What interaction is closest to your home?
Your answer

What is your relationship to your neighborhood? (Please check all that apply) *
- Live
- Work
- School
- Medical Visits
- Shopping/Business
- Social
- Other: ___________________

How do you typically get to/around the neighborhood? (Please check all that apply) *
- Walk
- Personal Car
- Bus
- Subway
- Bike
- Taxi/Uber/For-Hire Vehicle
- Other: ___________________

How often do you cross the Prospect Expressway? *
- Never
- Rarely (less than once a month)
- Occasionally (1-3 times a month)
- Frequently (at least once a week)
- Daily

Why do you usually cross the Expressway? (Please check all that apply) *
- To commute (or while working)
- To run errands or shop
- Exercise or recreation
- I don't walk across the Expressway
- Other: ___________________

Would you be more likely to use these parks if they had? *
- Exercise equipment
- Programming
- Art
- Comfortable benches
- Dog run
- Other: ___________________

Do you own a car? *
- Yes
- No, but I have access to a car and drive sometimes (once a week or less)
- No

How often do you drive on the Prospect Expressway? *
- Never
- Rarely (less than once a month)
- Occasionally (1-3 times a month)
- Frequently (at least once a week)
- Daily

In closing, please choose your top three neighborhood priorities *
- Parking
- Noise
- Bicycle infrastructure
- Traffic safety
- Cleanliness
- Public space
- Parks
- Expended commercial offerings
- No change
- Other: ___________________

Would you be more likely to ride a bicycle if there were: *
- Protected bicycle lanes
- Better connections to other bicycle routes and parks
- Better traffic enforcement
- I wouldn't be more likely to ride in any of those scenarios
- I'm not sure/don't know
- Other: ___________________

How often do you visit the small parks adjacent to the Expressway? (excluding Prospect Park and Greenwood Cemetery) *
- Never
- Rarely (less than once a month)
- Occasionally (1-3 times a month)
- Frequently (at least once a week)
- Daily
- Other: ___________________

Anything else you would like to share?
Your answer