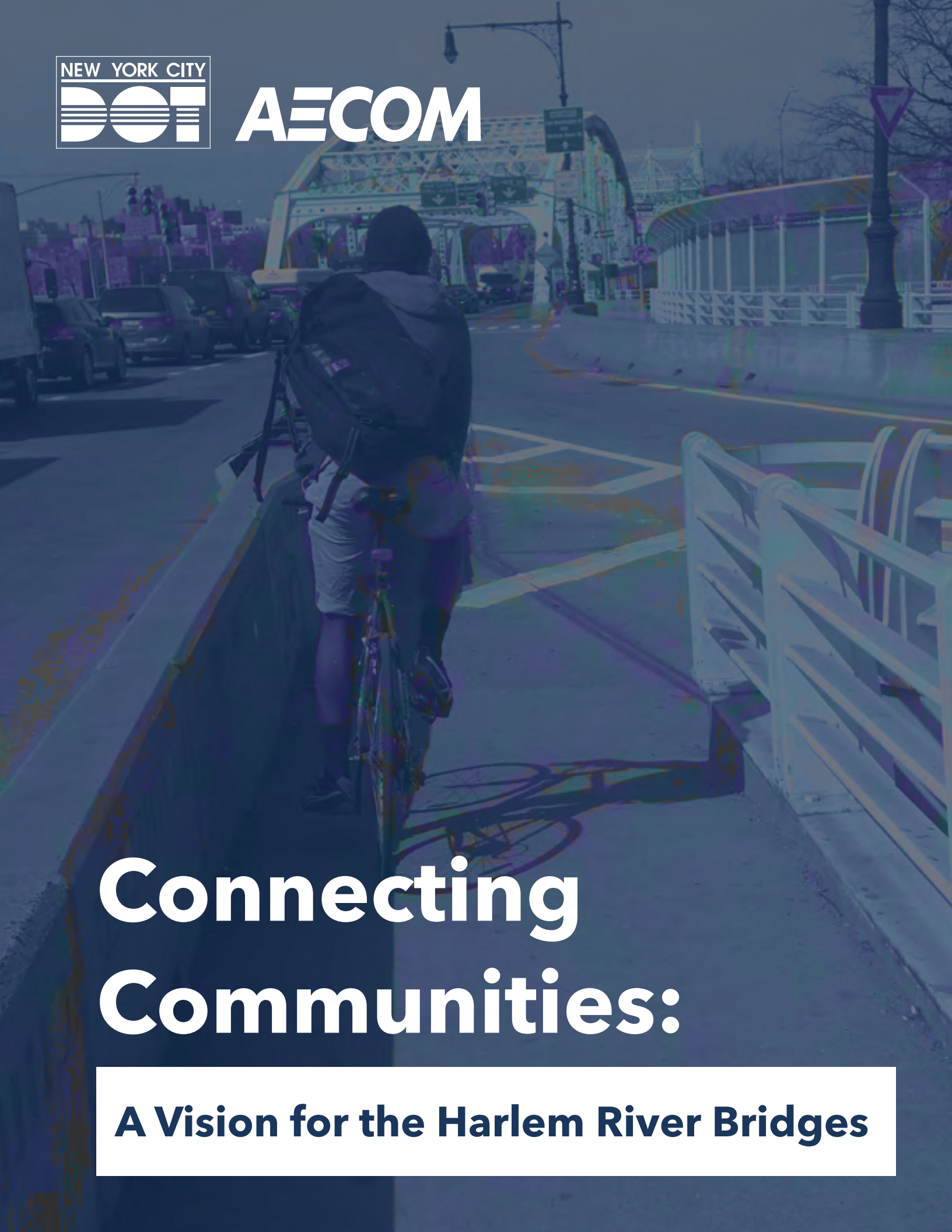


NEW YORK CITY DOT

AECOM

Connecting Communities:

A Vision for the Harlem River Bridges

Contents

Macombs Dam Bridge

Connecting Communities: A Vision for the Harlem River Bridges was prepared by the NYC Department of Transportation's Office of Bicycle and Pedestrian Programs with the support of AECOM. We thank the many residents of New York City who participated in our planning process, as well as Council Member Mark Levine and former Assembly Member Keith Wright for providing outreach assistance. Funding provided through OneNYC.

A Note from Commissioner Trottenberg

To our fellow New Yorkers,

In 2015, after years of rehabilitation, the NYC Parks Department reopened the High Bridge, New York City's oldest bridge, a gorgeous structure from 1848 that flies high over the Harlem River connecting Washington Heights in Manhattan to Highbridge in the Bronx.

The bridge didn't simply provide passage over what was for years a literal chasm between two vibrant communities and boroughs, its gorgeous views and easy access made it a destination, immediately popular to thousands of pedestrians and cyclists. The bridge also connected neighborhoods with some of New York City's highest rates of asthma, diabetes and childhood obesity – and brought residents outdoors, in many cases to rediscover cycling and walking -- healthy exercise that is affordable, sustainable and fun.

For us at the Department of Transportation, the High Bridge illustrated the enormous demand for walkable and bikeable crossings over the Harlem River – but it also underscored just how much work we have to do. That bridge also served as something of an inspiration for this new report, *Connecting Communities: A Vision for the Harlem River Bridges*, which captures our commitment to expanding access over the Harlem River. Crossing the Harlem River by foot or bike can often right now be charitably called an unwelcoming experience, and we seek to change that by making changes that would bring more cyclists and pedestrians onto these -- or even new – crossings, tying together neighborhoods on both sides of the Harlem River.

The thirteen spans over the Harlem River certainly present some challenges, which this report recounts in some expert detail. However, our experience with the four iconic East River crossings tell us that the changes we propose here are definitely achievable. In fact, over the last twenty years, since DOT first began its dramatic expansion of safer bike access to the Brooklyn, Manhattan, Williamsburg and Queensboro bridges, we have seen enormous growth, with total bicycle ridership on those bridges alone climbing from 3,000 to over 20,000 trips per day. I am confident that the DOT traffic planners, engineers and construction crews who have transformed those crossings can work that same magic on the bridges over the Harlem River.

Updating these bridges is also an imperative. While New York City marked its fourth consecutive year of fatality declines in 2017 under Mayor de Blasio's Vision Zero plan, cyclist fatalities tragically rose for the second straight year. Part of *Connecting Communities* is dedicating DOT to a multi-year vision that makes traveling by foot or by bike from the Bronx to Manhattan (and vice versa) an attractive transportation option – but our foremost priority is that crossing those bridges must continue to be safe for all.

Thank you – and happy riding and strolling,

Polly Trottenberg

Commissioner

Executive Summary

Beginning in the spring of 2015, the New York City Department of Transportation's (DOT) Office of Bicycle and Pedestrian Programs led a community-driven planning process to increase pedestrian and bicycle mobility between the Bronx and Manhattan across the Harlem River, and the 13 spans that connect Manhattan and the Bronx. The vision for *Connecting Communities* is to knit together vibrant communities on both sides of the river, improve safety, and provide additional options for people to access the different jobs, schools, parks, and transit options separated by the Harlem River.

In addition to improving vehicular traffic flow and traffic safety for pedestrians, the goal of *Connecting Communities* is to identify a feasible new bicycle crossing roughly every 1 mile, so that no detour would require more than a 10-minute ride on a bicycle. When bicycle lanes were successfully installed on the East River bridges in the late 1990s and early 2000s, DOT achieved this detour goal, and in the years since, bicycle traffic between Brooklyn and Manhattan has ballooned nearly seven-fold. In general, most of the recommendations include creation of new, cantilevered space as the preferred method to accommodate cyclists. With growing demand for cycling, further study is recommended to consider new, exclusive bicycle and pedestrian crossings.

DOT proposes to create a safe and continuous inter-borough experience for New Yorkers who walk and bike. In multiple efforts – from workshops and surveys to mobile outreach -- DOT compiled community preferences for short and long-term transportation improvements that incorporate bridge paths, approaches, wayfinding, and lighting. The result of this outreach, *Connecting Communities: A Vision for the Harlem River Bridges*, includes descriptions of community preferences for capital projects on bridges as well as on-street approaches that will enhance safety and pedestrian and bicycle mobility between Manhattan and the Bronx. It will be used as a framework from which to consider new capital projects as well as to develop short-term implementation projects going forward.

The projects described in the following pages consist of 3 types:

Bridge Path Potential Project

Proposals to enhance safety and pedestrian and bicycle access across the Harlem River on DOT-owned Bridges.

On-Street Potential Project

Short and potential long-term proposals to create safe, comfortable pedestrian and bicycle routes to bridge approaches on DOT right-of-way in both Manhattan and the Bronx.

Partnership Opportunity

Proposed enhancements to a bridge or connector project that requires participation by another agency or property owner.

Feasible new bridge projects could reduce distance between bicycle crossings from 3+ miles to roughly every 1 mile

Harlem River Bridges Overview

Bridges	Year Built	Special Features	12-Hour Summer Weekday Counts* Walkers	12-Hour Summer Weekday Counts* Bikers	Peak Hr Counts** Vehicles	Preliminary Capacity Analysis
Broadway Bridge	**1895**	Double deck vertical lift bridge	2,978	499	1,392 NB 1,437 SB	Two Bronx-bound lanes and 2 Manhattan-bound lanes; channelized roadway space can be converted to bicycle space
University Heights Bridge	**1908; swing span replaced in 1992**	Swing bridge with pedestrian access on south side	1,209	335	1,042EB 1,358 WB	Two lanes in each direction; cantilevered space to widen the deck to accommodate cyclists is preferred; 4-to-3 conversion potential alternative
Washington Bridge	**1889**	Two-hinged arch; ramp connections to George Washington Bridge/ I-95	517***	352***	2,138 EB 1,599 WB	Three lanes in each direction expands to 4 at intersection with Amsterdam Ave; initial analysis indicates one WB lane from Edward L. Grant Highway to Laurel Hill Terrace can be re-purposed without impacting traffic; cantilevered space is preferable, if feasible
High Bridge (NYC Parks)	**1837; rebuilt 2015**	Exclusive pedestrian & bicycle facility	not available		0	Shared walking-biking facility; no car access
Macombs Dam Bridge	**1895**	Swing bridge; ramp connections diverge on Manhattan sides	1,181	636	1,116 EB 1,400 WB	Two lanes in each direction; cantilevered space to widen the deck to accommodate cyclists is preferred; potential alternative is to combine W 155th sidewalks to create shared-use path on one side
145th St Bridge	**1957; swing span replaced 2007**	Local street; swing bridge	2,388	350	1,261 EB 1,118 WB	Two lanes in each direction; wide sidewalks could accommodate shared bike-ped use; pinch point at gate
Madison Ave Bridge	**1910**	Swing bridge	1,479	288	1,596 EB 1,635 WB	Two lanes in each direction across main span; channelized area on Manhattan approach and excess width on Bronx approach could be re-purposed for additional bike/ped space ; cantilevered space is preferred alternative
Third Ave Bridge	**1898; replaced 2016**	Swing bridge; ramp connections to E 128th St prevent at-grade crossing to adjacent park	793	215	3,308 WB	Five Manhattan-bound lanes; redirecting bicycle traffic to nearby Willis Ave bridge bicycle path would increase space available to people walking on the sidewalk; cantilevered space to widen path preferred method to increase space for cyclists
Willis Ave Bridge	**1901; rebuilt 2010**	Dedicated shared pedestrian & bicycle path installed in 2010	527	996	3,535 EB	Four Bronx-bound lanes; recent reconstruction included addition of bicycle and pedestrian shared path
Wards Island Bridge	**1951; rebuilt in 2012**	Exclusive pedestrian & bicycle facility	1,479	288	0	Shared walking-biking facility, no car access; future enhancements could create larger turn radii for bicycle ramp

* Data collected by hand one weekday with good weather in Summer 2015
** Data represents average of midweek Tues-Thurs peak-hour counts collected by automated collectors over one week period in fall, 2015
*** Data collected summer 2016; counts unavailable at this location for 2015

Project Summary, Northern Section

HENRY HUDSON BRIDGE

i MTA: Henry Hudson Bridge Access Improvements
Work with MTA to build out sidewalk and accommodate bicycles on bridge. Install crossing and wayfinding at Henry Hudson Bridge entrance.

1. BROADWAY BRIDGE

1A Broadway Bridge Enhancements
Install on-street, buffered bicycle lanes as part of planned bridge replacement.

1B Bronx: W 225 St and Bailey Ave Approach
Install traffic calming, wayfinding, and on-street bicycle markings from bridge to Van Cortlandt Park.

1C Manhattan: 10 Ave and Broadway Approach
Install intersection improvements, wayfinding, and on-street bicycle markings on Broadway and 10 Ave from bridge to existing bicycle network.

1D Bronx: Van Cortlandt Park Greenway Link
Explore traffic calming, enhanced pedestrian connections, and bicycle infrastructure connecting Mosholu-Pelham Greenway to Broadway and Van Cortlandt Park.

2. UNIVERSITY HEIGHTS BRIDGE

2A 207 St/University Heights Bridge
Install pedestrian, traffic, and transit improvements on W 207 St between bridge and Post Rd; add bicycle and expanded pedestrian facility using cantilevered space.

2B Bronx: W Fordham Rd Approach
Shorten crossing distances at bridge approach. Install bicycle connection continuing to north side of bridge.

2C Manhattan: 9th Ave Approach
Improve pedestrian, vehicular, and transit access to University Heights Bridge from 9 Ave. Explore future bicycle connections as part of bridge improvements.

2D Bronx: University Heights Bicycle Route Connection
Explore bicycle route connection between Grand Concourse and University Heights Bridge.

2E Bronx: Sedgwick Ave
Create north-south bicycle route connection between University Heights Bridge and Roberto Clemente State Park.

3. WASHINGTON BRIDGE

3A Washington Bridge Bicycle Path
Install protected two-way bicycle path on north side of bridge, cantilevered space preferred. Explore replacing south stairs with at-grade pedestrian crossing on north side.

3B Bronx: Edward L Grant Highway
Create pedestrian and bicycle gateway to bridge as part of planned NYSDOT capital project. Upgrade existing bicycle route on E L Grant Hwy to protected path from E 167 St to Tremont Ave.

3C Manhattan: Amsterdam Ave Approach
Shorten crossing distances at bridge approach. Install two-way bicycle path on west side of street from W 180 St to bridge.

3D Bronx: Tremont Ave
Extend the bicycle route on Tremont Ave and Sedgwick Ave to connect to Roberto Clemente State Park. Note: A portion of this route was installed in 2016 as a result of this planning process.

3E Manhattan: Hudson River Greenway Route Enhancement
Explore enhancement of westbound connection between bridge and Greenway entrance.

4. HIGH BRIDGE

4A Bronx: High Bridge Connections
Install pedestrian crossing and protected path from waterfront Bridge Park on Depot Pl to upland neighborhood, High Bridge, and existing bicycle network. Install sidewalk on Undercliff Ave.

4B Manhattan: High Bridge Connections
Upgrade existing bicycle route to off-street path where feasible from Hudson River Greenway to High Bridge.

4C Bronx: 170 St Extension
Explore possible eastward extension of existing bicycle route on 170 St in The Bronx as part of Vision Zero traffic calming.

5. MACOMBS DAM BRIDGE

5A Macombs Dam Bridge Bike and Pedestrian Enhancements
Enhance ramp crossings with markings, signage, and signal changes where feasible. Install cantilevered shared-use path on north side of bridge.

5B Bronx: Yankee Stadium-Grand Concourse Connector
Install on-street bicycle lanes on E 161 St between Macombs Dam Bridge/ Yankee Stadium/Heritage Field and Grand Concourse.

5C Manhattan: Harlem River Park Connection
Install signalized pedestrian crossing at E 155 St and ACP Blvd. Install safety improvements and on-street bicycle markings on ACP Blvd from bridge to W 150 St.

ii NYSDOT: Mill Pond Park Connection
Work with NYSDOT and NYC Parks to improve connection to Mill Pond Park from Macombs Dam Bridge, as outlined in the Harlem River Brownfields Opportunity Area plan (2015).

Project Map, Northern Section

Project Summary, Southern Section

6. 145 ST BRIDGE

6A 145 St Bridge Path Enhancements
Move crossing gates to cantilevered space to create shared-use path on both sides.

6B Bronx: E 149 St Vision Zero Enhancements
Install traffic calming and pedestrian enhancements at key intersections along E 149 St, a Vision Zero Priority Corridor. Future capital project: remove pedestrian fencing; add curb extensions and bicycle facilities connecting bridge to bicycle network; and explore 4-to-3 lanes conversion.

6C Manhattan: Harlem River Greenway Link
Create pedestrian and bicycle gateway to Manhattan Waterfront Greenway at W 143 St entrance with on-street bicycle markings from bridge to greenway. Explore off-street shared use path through Colonel Charles Young Playground and future cycling connections to the existing bike network from planned connection across 145 St Bridge. Options include short one-way pair on W 143 St and W 142 St.

6D Bronx: East-West Bicycle Route to Hub
Create short-term alternate route to E 149th St to connect 145 St Bridge to the Hub.

7. MADISON AVE BRIDGE

7A Madison Ave Bridge Enhancements
Expand pedestrian and bicycle space on south side of bridge by re-purposing excess on-street space on Madison Ave approach. Allow shared-use pedestrian and bicycle access on the bridge span, or cantilever in capital reconstruction.

7B Bronx: E 138 St Bicycle Lane Extension
Capital project to reduce pedestrian crossing distances, calm traffic, and install bicycle connection between existing bicycle route on E 138 St to Madison Ave Bridge by reconfiguring medians.

7C Manhattan: Madison Ave Bridge Network Link
Explore installation of bicycle infrastructure connecting to proposed Madison Ave bicycle path as part of 135 St Vision Zero traffic calming plan.

iii NYSDOT: 5 Ave Greenway Connector
Work with NYSDOT and NYC Parks to re-purpose unused ramp space to provide additional pedestrian and bicycle access to Harlem River Greenway.

8. THIRD AVE BRIDGE

8A Third Ave Bridge Bicycle and Pedestrian Improvements
Direct cyclists to preferred Willis Ave Bridge route with wayfinding signage. Improve pedestrian access to the Bronx with ADA ramp. Explore at-grade crossing from bridge to Harlem River Park. Explore bicycle connection to future Manhattan Waterfront Greenway segment.

9. WILLIS AVE BRIDGE, RANDALL'S ISLAND CONNECTOR

9A Bronx: Willis Ave Approach
Shorten crossing distances at bridge approach. Upgrade existing bicycle route to two-way protected bicycle path from bridge to E 140 St.

9B Bronx: Bruckner Blvd
Install protected two-way path on E 132 St and Willow Ave from Randall's Island Connector to existing bicycle network at E 138 St. Future extension along Bruckner Blvd to Longwood Ave.

9C Bronx: Willis Ave-Randall's Island Connector
Upgrade existing bicycle route to protected two-way path on E 133 St from Randall's Island Connector to existing bicycle network at St. Ann's Ave. Future extension to Willis Ave Bridge.

9D Manhattan: Willis Ave Bridge Access Routes and Intersection Improvements
Improve Willis Ave Bridge access with on-street bicycle markings on 1 Ave and E 124 St from bridge path to 2 Ave.

9E Manhattan: Crosstown Network Links
Explore crosstown bicycle connection between Hudson River Greenway entrance at W 129 St and Willis Ave Bridge. Possible routes include one-way pair along portions of 124 St and 126 St.

10. WARDS ISLAND BRIDGE

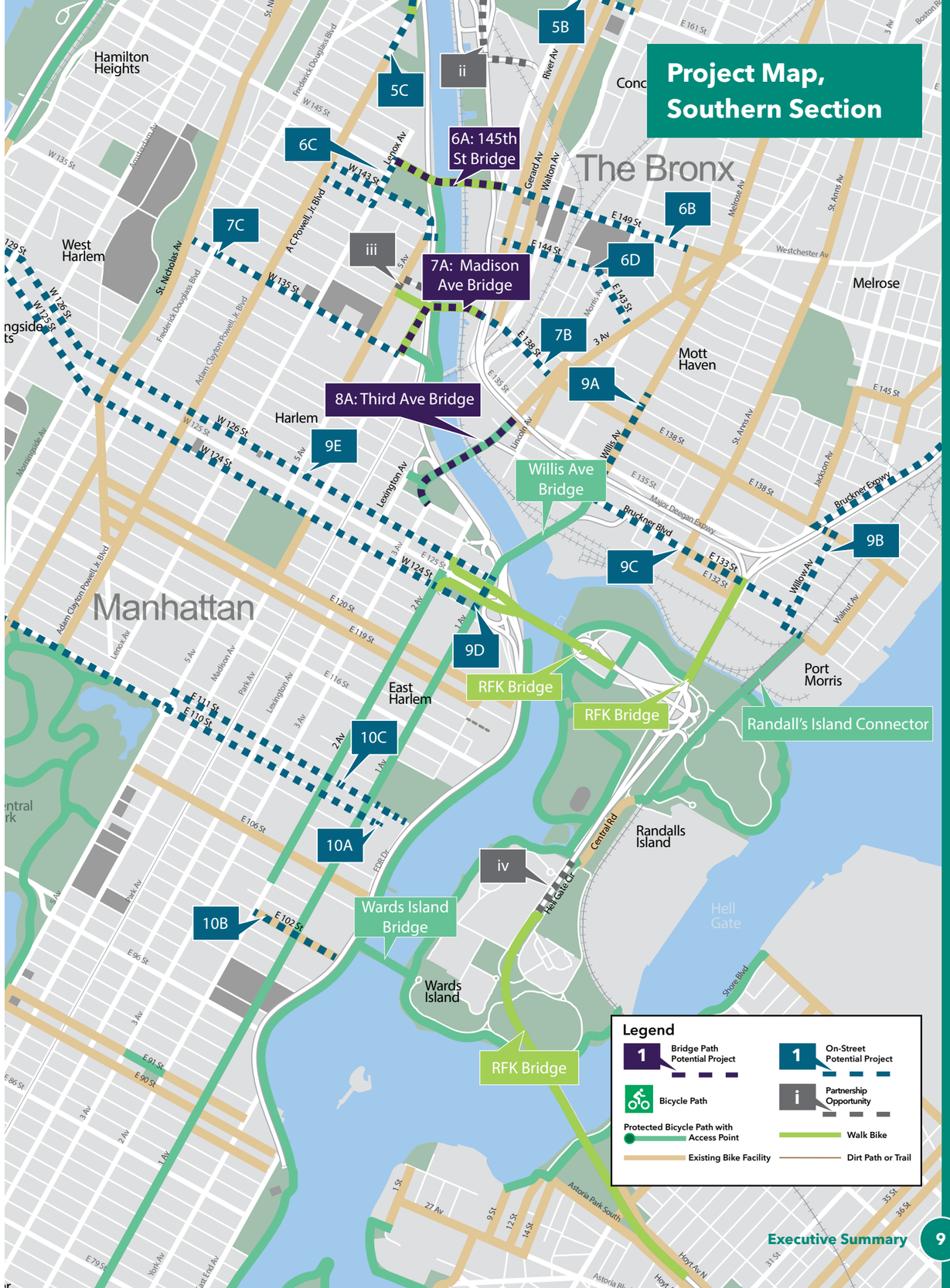
10A Manhattan: E 111 St
Create pedestrian and bicycle gateway to Manhattan Waterfront Greenway at E 111 St entrance.

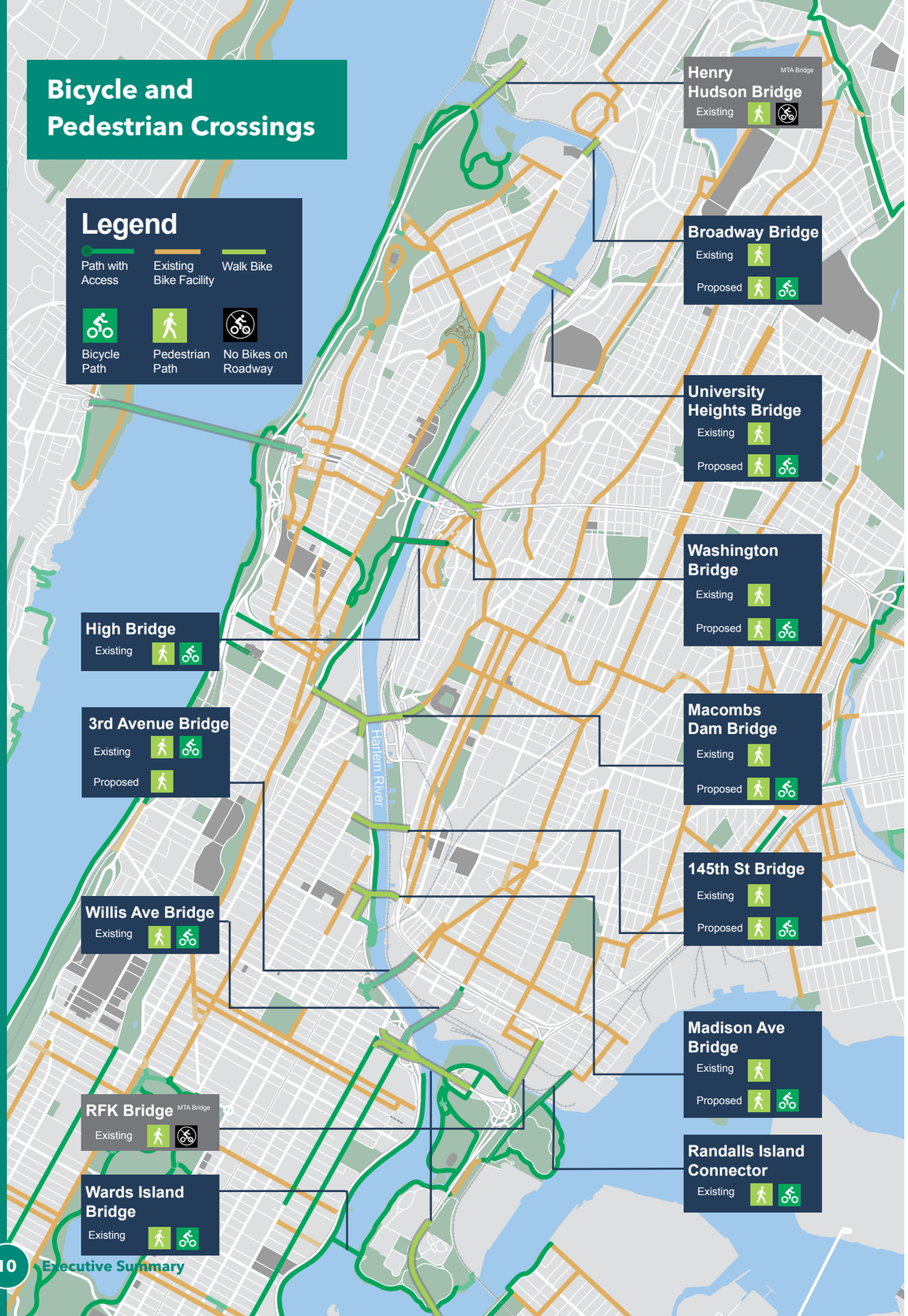
10B Manhattan: Wards Island Bridge Access Improvements
Install street-end improvement with pedestrian and bicycle gateway to Manhattan Waterfront Greenway and Wards Island Bridge.

10C Manhattan: Crosstown Central Park Links
Explore crosstown bicycle connection to Greenway entrance at E 111 St, connecting to Wards Island Bridge and Randall's Island. Possible routes include one-way pair on E 110 and E 111 St and Cathedral Parkway.

iv NYC Parks: Central Road
Work with NYC Parks to install on-street bicycle markings and build off-street shared use path connecting the Bronx, Queens, and Manhattan access points.

Project Map, Southern Section





CHAPTER 1
Introduction

University Heights Bridge

Overview

Beginning in the spring of 2015, the New York City Department of Transportation's Office of Bicycle and Pedestrian Programs (NYC DOT) has led a community-driven planning process to increase pedestrian and bicycle mobility between the Bronx and Manhattan across the Harlem River. Through workshops, surveys, and mobile outreach, NYC DOT compiled community preferences for short- and long-term transportation improvements incorporating bridge paths, approaches, wayfinding, and lighting that create a safe and continuous cross-borough experience for pedestrians and cyclists. The result of this outreach, the *Connecting Communities: A Vision for the Harlem River Bridges*, includes descriptions of community preferences of capital projects for bridges and their on-street approaches that will enhance safety and pedestrian and bicycle mobility between Manhattan and the Bronx. It will be used as a framework from which to consider new capital projects as well as to develop short-term implementation projects going forward.

General Recommendations

Vision Zero Action Plan
Safety is at the core of NYC DOT's mission. *Connecting Communities* includes 18 projects that propose safety engineering improvements on Bronx and Manhattan Priority Corridors, Intersections and Areas identified by the Vision Zero Borough Action Plans.

More Frequent Harlem River Bicycle Crossings
Community response was overwhelmingly in favor of creating new cycling facilities to cross between Manhattan and the Bronx. This plan recommends prioritizing projects that will allow for bicycle crossings roughly every one mile along each shoreline. In general and where feasible, projects that create new, cantilevered space are preferred over those the repurpose space within existing bridge structures.

Lighting
NYC DOT is currently retrofitting all of New York City's street lights with energy-efficient LEDs. The new lighting will save approximately $6 million in energy and $8 million in maintenance each year. This plan recommends that sufficient lighting be installed on Harlem River bridges and their approaches to allow for safe and accessible crossing.

WalkNYC Wayfinding
WalkNYC is New York City's standard for pedestrian wayfinding. WalkNYC signs are recommended to be installed at crucial decision points at Harlem River bridge approaches to provide wayfinding information to pedestrians and bicycles.

Leveraging Prior Investments
Many of the recommendations in *Connecting Communities* will build on the successes of recently-completed and ongoing NYC DOT street improvement projects. These in-house improvements typically utilize temporary materials, allowing for changes to be tested before being made permanent. In order to extend their useful life, the Plan recommends leveraging these investments by building them out as capital projects using permanent materials.

Future Study of New Structures
New bridge structures were not considered as part of this project but are recommended for future study.

Planning Goals

Achieve Vision Zero
Improve safety and reduce traffic crashes through outreach, education, and new street designs throughout the five boroughs.

Enhance Mobility Across the Harlem River
Provide safe options for commuting and recreation with improved connections between Bronx and Manhattan, as part of OneNYC's commitment to improve bike access on bridges

Create a Continuous Cross-Borough Experience
Pursue short and long term improvements to bridge access and crossings by installing temporary materials while seeking funding for full capital build-outs.

Increase Waterfront Access
Create safe new transportation and recreation options that connect waterfront neighborhoods to the rest of the city.

Engaging Communities

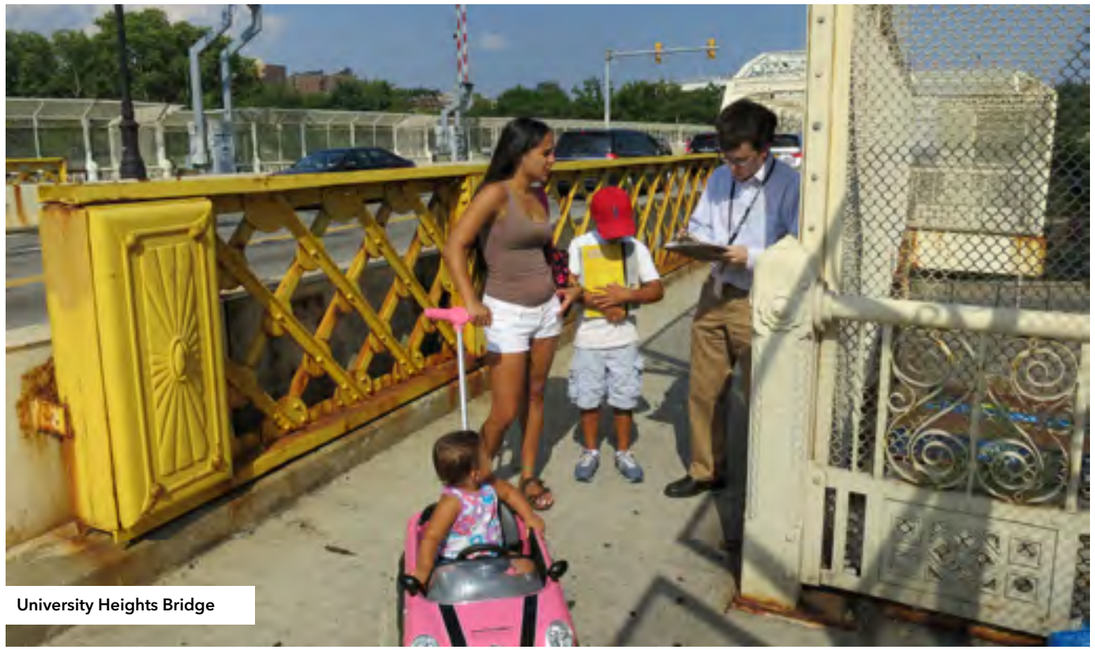
Workshops, surveys, and mobile outreach have been a part of the *Connecting Communities* outreach process to determine community preferences for short and long term improvements. NYC DOT held three rounds of community planning workshops in the Bronx and upper Manhattan in order to identify destinations, discuss alternative routes and designs, and select priority projects on and around the Harlem River bridges. In addition, over 200 pedestrians and cyclists using the bridges were surveyed throughout the summer and fall of 2015.

Intercept surveys conducted:

- June 10, 2015 - University Heights Bridge
- July 15, 2015 - Third Ave Bridge, RFK Bridge, Willis Ave Bridge
- July 21, 2015 - Broadway Bridge, University Heights Bridge, Washington Bridge
- August 25, 2015 - 145th St Bridge, Madison Ave Bridge, Macombs Dam Bridge
- October 3, 2015 - Broadway Bridge


Collecting intercept surveys


Collecting intercept surveys


University Heights Bridge

Manhattan community workshop

Bronx community workshop

Manhattan community workshop

Workshops held:

- June 15, 2015 - Taino Towers (MN)
- June 16, 2015 - Hostos Community College (BX)
- June 22, 2015 - Wilson Major Morris Community Center (MN)
- June 23, 2015 - Lehman College (BX)
- September 9, 2015 - Lt. Joseph P. Kennedy Jr. Memorial Community Center (MN)
- September 10, 2015 - Mullaly Recreational Center (BX)
- September 17, 2015 - Wilson Major Morris Community Center (MN)
- September 21, 2015 - Davidson Community Center (BX)
- March 22, 2016 - Rio II Gallery (MN)
- March 23, 2016 - Hostos Community College (BX)
- March 29, 2016 - Bronx Lebanon Hospital (BX)
- March 30, 2016 - Church of the Good Shepherd (MN)

NYC DOT Bridge History

Broadway Bridge

The first bridge at this approximate site was built in 1693 and was known as the "Kings Bridge," as everyone except soldiers and other representatives of the king had to pay tolls to use it. The construction of the alternative "Free Bridge" by merchants and farmers in 1758 was considered a significant revolutionary act. Both the Kings and Free Bridges had draws to admit small craft. The Free Bridge was built of dry rubble and wooden beams, and was destroyed by the British when they routed Washington's troops from New York in 1776; it was rebuilt shortly after the war. The double-deck swing span in turn was replaced by a double-deck lift span in 1960.

Broadway Bridge

University Heights Bridge

The site of the present bridge was originally occupied by a single-draw, wooden trestle footbridge, erected in 1891 and removed soon afterward. The current bridge opened at its new location in 1908 and cost $1,182,782; as the old Broadway Bridge was being replaced, it was floated downstream to be given a new life as the University Heights Bridge. The swing span was replaced by a new one in 1992.

University Heights Bridge, Bronx approach

Washington Bridge

The Washington Bridge carries six lanes of traffic, and has direct ramps to both I-95 and the Major Deegan Expressway. This bridge was named after George Washington, and opened in 1888, 43 years before the better known George Washington Bridge that connects to New Jersey.

Washington Bridge from below

Macombs Dam Bridge

Opened in 1895, this landmark is the oldest extant swing-type bridge in its original form in New York City. Furthermore, it is the City's third-oldest major bridge. The mainline structure is a through-truss swing span. It was designated an official New York City landmark in January 1992. This bridge carries two lanes of traffic in each direction. The roadway (curb to curb) width on the swing span is about 40 feet. The pedestrian sidewalk width varies from 6 feet to 9.5 feet.

Macombs Dam Bridge

145th St Bridge

145th Street Bridge

The 145th Street Bridge is a swing bridge with three through-trusses. It is an eight-span structure carrying four lanes of vehicular traffic over the Harlem River Drive, the Harlem River, and Metro-North Railroad. Spans 1 and 2 were constructed in 1957 when the bridge was extended to span the Harlem River Drive. Spans 6, 7 and 8 were reconstructed in 1990 in place of the original Bronx flanking span to provide a right-of-way for the Oak Point Link. The bridge carries four 12-foot lanes, two in each direction, plus a 9-foot sidewalk on each side of the bridge.

Madison Avenue Bridge

Madison Avenue is a local street, located between Fifth and Park Avenues on the east side of Manhattan. The road extends from 23rd Street in Manhattan to East 138th Street in the Bronx. The Madison Avenue Bridge is a four-lane, four-span swing bridge, carrying traffic between Madison and Fifth Avenues and East 138th Street in Manhattan and East 138th Street and Grand Concourse in the Bronx. The bridge is located approximately 2100 feet south of the 145th Street Bridge and about 2450 feet north of the Third Avenue Bridge. The bridge has two roadways, each 27 feet wide, as well as two 9-foot sidewalks.

Madison Ave Bridge, Manhattan approach

Third Avenue Bridge

Third Avenue is a local City street, running north from the Bowery and Fourth Street in Manhattan to Webster Avenue in the Bronx. DOT has undertaken a $118 million project to replace the previous Third Avenue Bridge, which opened on August 1, 1898. It replaced an earlier obsolete iron swing bridge at the same site. The initial deck carried two trolley tracks, which were eliminated in 1928 during a reconstruction effort to accommodate automobiles. In the early 1900's, electric operating equipment replaced the original steam equipment. Major reconstruction in the mid-1950's reconfigured the bridge from four trusses (three deck sections) to three trusses with two roadways of two lanes each. During the same period a span was constructed over the Harlem River Drive with access to it, and several of the approaches were rebuilt.

Madison Ave Bridge, Manhattan approach

Third Ave Bridge

Towing the Willis Ave Bridge

Willis Ave Bridge

The Willis Avenue Bridge extends from First Avenue and East 124th Street in Manhattan to Willis Avenue and East 134th Street in the Bronx. Oriented north-south, the bridge is a northbound route and works in concert with the nearby Third Avenue Bridge, which carries southbound traffic. The bridge crosses the Harlem River Drive, a concrete plant, the Harlem River, the Metro-North Railroad Oak Point Link, the Harlem River Rail Yard, and Bruckner Boulevard. Over 70,000 drivers use the bridge each day.

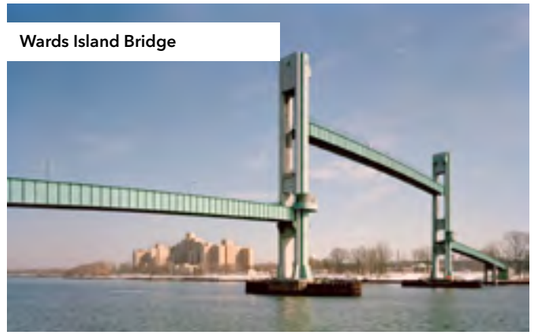
Towing the Willis Ave Bridge

The Willis Ave Bridge was reconstructed in 2010 as part of the Harlem River Bridges Program. The new bridge has wider lanes as well as dedicated bicycle and pedestrian space.

On July 12, 2010 the new swing span was loaded onto barges and began a 135 nautical mile journey to NY Harbor passing underneath 14 bridges. On July 26, the bridge traveled on barges to its permanent location along the East River. The bridge is 350 feet long and weighs 2,400 tons.

Wards Island Bridge

The first known bridge to Wards Island (formerly Great Barn Island) was built in 1807 with the money of two private citizens, Philip Milledolar and Bartholomew Ward, to aid their cotton business on the small island. This wooden drawbridge, connecting East 114th Street in Manhattan to the northwest corner of the island, lasted until 1821, when a storm destroyed all but the stone piers. The current pedestrian bridge was built in 1951. It was designed to accommodate visitors to Wards Island's park, stadium, psychiatric hospitals, and athletic facilities.



Wards Island Bridge

The Wards Island Bridge underwent a $1.5 million rehabilitation, completed in early 2012. DOT upgraded the bridge deck, replaced the electrical system, and improved lighting and security.

CHAPTER 2

Potential Projects

3 Ave Bridge

Project Types

Connecting Communities: A Vision for the Harlem River Bridges includes three types of projects.

Bridge Path Potential Projects 1

Bridge capital projects are proposals to enhance safety and pedestrian and bicycle access across the Harlem River on DOT Bridges.

On-Street Potential Projects 1

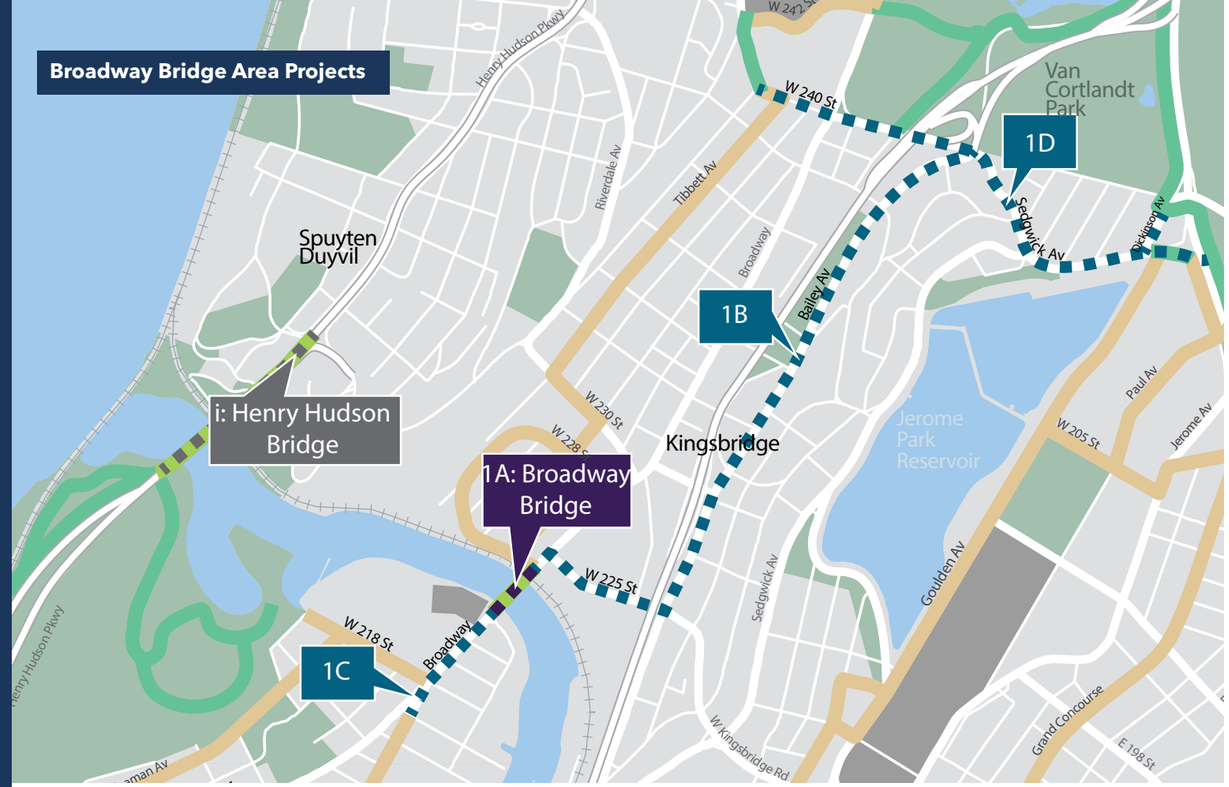
Bridge connector projects include both short- and long-term proposals to create safe, comfortable pedestrian and bicycle routes to bridge approaches on NYC DOT right-of-way.

Partnership Opportunity i

Agency partnership projects are proposed enhancements to a bridge or connector project that requires participation by another agency or property owner.

Note:

All project proposals require additional feasibility study including traffic analysis, as well as Community Board review.



1. Broadway Bridge

Existing Conditions

The Broadway Bridge crosses the northernmost section of the Harlem River, connecting Inwood to Marble Hill, Spuyten Duyvil, and Kingsbridge as well as providing a link between the Manhattan Waterfront Greenway, Fort Tryon Park, and Inwood Hill Park in Manhattan and Van Cortlandt Park in the Bronx. The Broadway Bridge permits pedestrian access on both sides of the street. Bicycles are permitted to ride with traffic but have no existing dedicated facility. Southbound bicycles coming from Marble Hill can use a shared-lane facility on W 225 St adjacent to the Marble Hill train station.

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- i Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Bicycle, Pedestrian, and Vehicle Counts

Bicycle and pedestrian counts were conducted on the Broadway Bridge from 7am-7pm on a weekday in August, 2015

2,978 **499**

Vehicular counts were conducted on the continuously for one week in September, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (7AM): 774 NB / 1437 SB
PM Peak Hour (5PM): 1395 NB / 1180 SB

Potential Improvements

1A Broadway Bridge Enhancements
Install on-street, buffered bicycle lanes as part of planned bridge replacement.

1B W 225 St / Bailey Ave
Install traffic calming, wayfinding, and on-street bicycle markings from bridge to Van Cortlandt Park.

1C 10 Ave / Broadway
Install intersection improvements, wayfinding, and on-street bicycle markings on Broadway and 10th Ave from bridge to existing bicycle network; parking-protected bike lanes preferred if feasible.

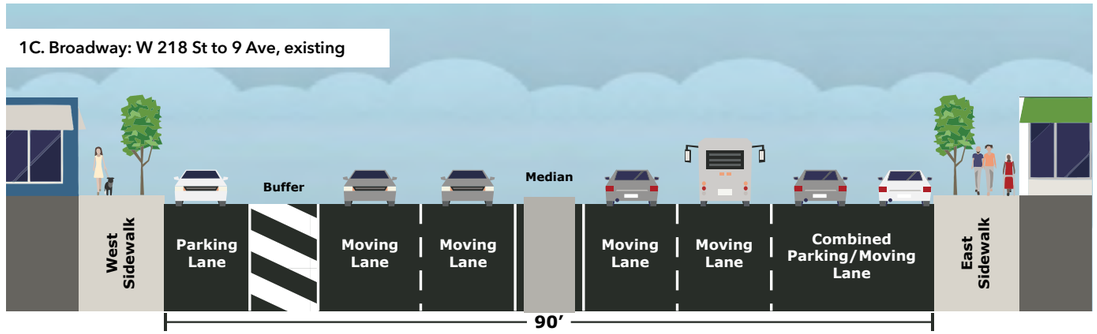
1D Van Cortlandt Park Greenway Connector
Explore traffic calming, enhanced pedestrian connections, and bicycle infrastructure connecting Mosholu-Pelham Greenway to Broadway and Van Cortlandt Park.

i Henry Hudson Bridge Access Improvements
Work with MTA to build out sidewalk and accommodate bicycles on bridge. Install crossing and wayfinding at Henry Hudson Bridge entrance.

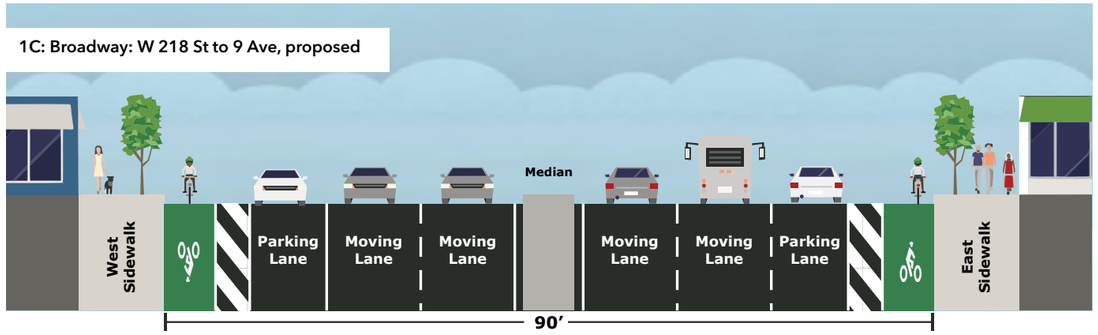
1A. Broadway at W 220 St, existing

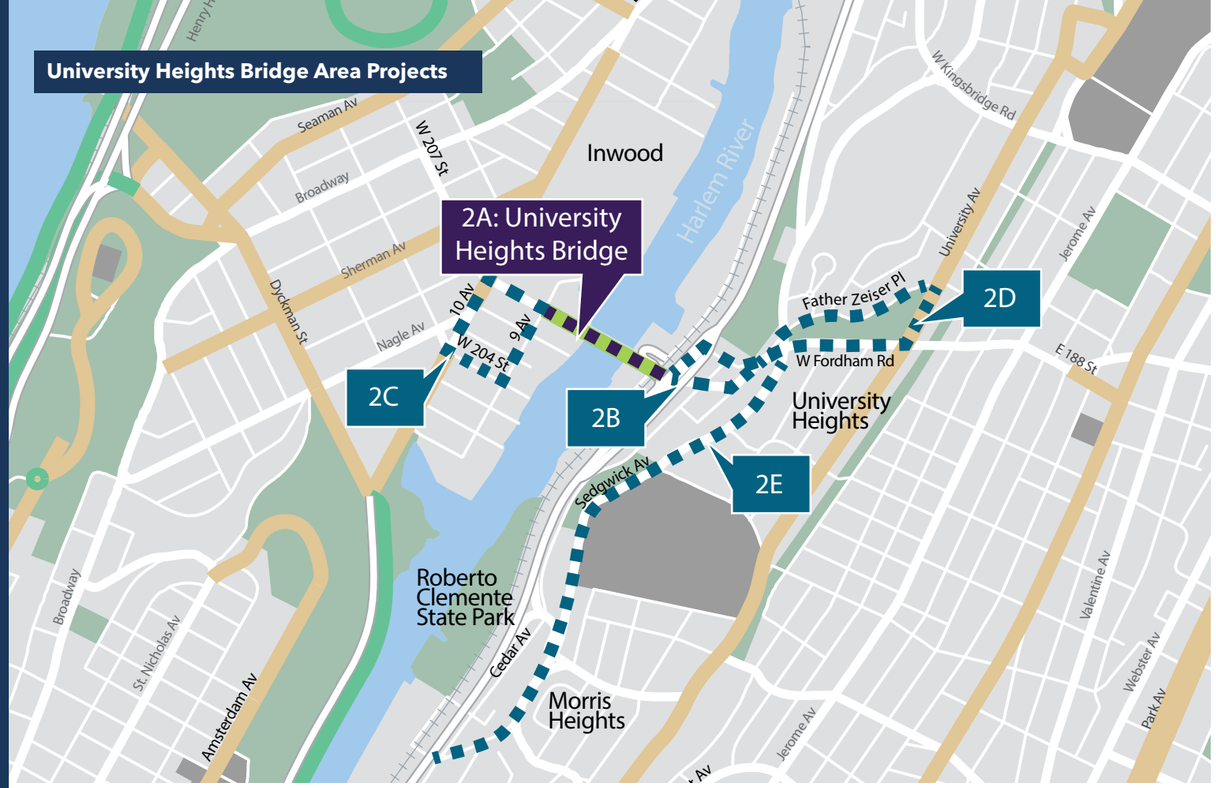
1B, 1C, 1D: Shorter, safer pedestrian crossings, potential

1C. Broadway: W 218 St to 9 Ave, existing



1C: Broadway: W 218 St to 9 Ave, proposed





2. University Heights Bridge

Existing Conditions

Pedestrian access across the historic University Heights Bridge is along a path on the south side of the bridge. Bicyclists must dismount to use the path. Pedestrians approaching the bridge on both sides face long crossings and turning conflicts.

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- i Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Bicycle, Pedestrian & Vehicle Counts

Counts were conducted on the University Heights Bridge from 7am-7pm on a weekday in August, 2015

1,209 **335**

Vehicular counts were conducted on the continuously for one week in September, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (7AM): 1358 WB / 803 EB
PM Peak Hour (5PM): 1193 WB / 1042 EB


University Heights Bridge

Potential Improvements

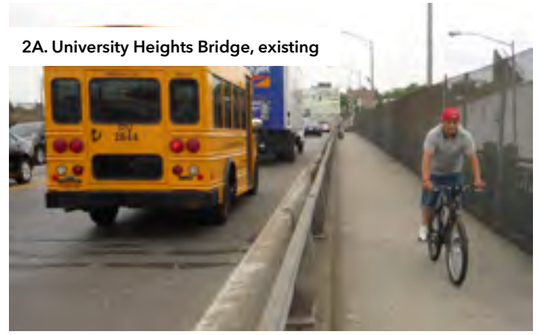
2A 207 St/University Heights Bridge
Install pedestrian, traffic, and transit improvements on W 207 St between the bridge and Post Rd. Long-term: add bicycle facility.

2B W Fordham Rd, University Heights Bridge Approach
Shorten crossing distances at bridge approach. Install bicycle connection continuing to north side of bridge.

2C 9 Ave Bridge Access Enhancements
Improve pedestrian, vehicular, and transit access to University Heights Bridge from 9 Ave. Explore future bicycle connections as part of bridge improvements.

2D University Heights Bicycle Route Connection
Explore bicycle route connection between Grand Concourse and University Heights Bridge.

2E Sedgwick Ave
Create north-south bicycle route connection between University Heights Bridge and Roberto Clemente State Park.


2A. University Heights Bridge, existing


2A. University Heights Bridge, existing


Pedestrian refuge islands and bicycle lanes, example

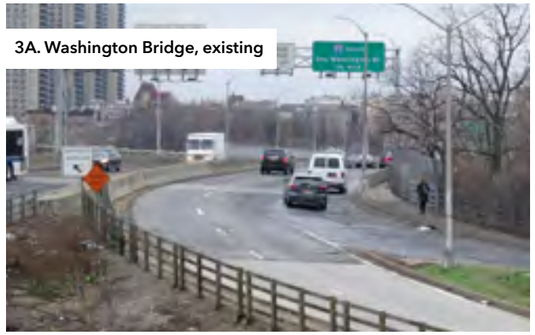

2A. University Heights Bridge, existing path


On-street bicycle lanes, example

3. Washington Bridge

Existing Conditions

The Washington Bridge has pedestrian access on both sides of the bridge; however, this access can be difficult to get to. On the south side of the bridge, pedestrian access from Manhattan is accommodated via an underpass with stairs to avoid the on-ramp connecting from I-95. On the north side, access to the bridge is from Laurel Hill Terrace, which is not obvious. More wayfinding and lighting is needed at this location. No bicycle facilities exist on this bridge.



3A. Washington Bridge, existing

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Bicycle, Pedestrian, & Vehicle Counts

Counts were conducted on the Washington Bridge from 7am-7pm on a weekday in August, 2016

517 **352**

Vehicular counts were conducted on the continuously for one week in November, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (7AM): 955 WB / 2028 EB
PM Peak Hour (5PM): 1222 WB / 2174 EB

Potential Improvements

3A Washington Bridge Bicycle Path

Install protected two-way bicycle path on north side of bridge, cantilevered path preferred as part of full reconstruction. Explore south side -grade pedestrian crossing.

3B Edward L Grant Highway / University Ave

Create pedestrian and bicycle gateway to bridge as part of planned NYSDOT capital project. Upgrade existing bicycle route on E L Grant Hwy to protected path from E 167 St to Tremont Ave.

3C Amsterdam Ave-Washington Bridge Approach Improvements

Shorten crossing distances at bridge approach. Install two-way bicycle path on west side of street from W 180 St to bridge.

3D Tremont Ave

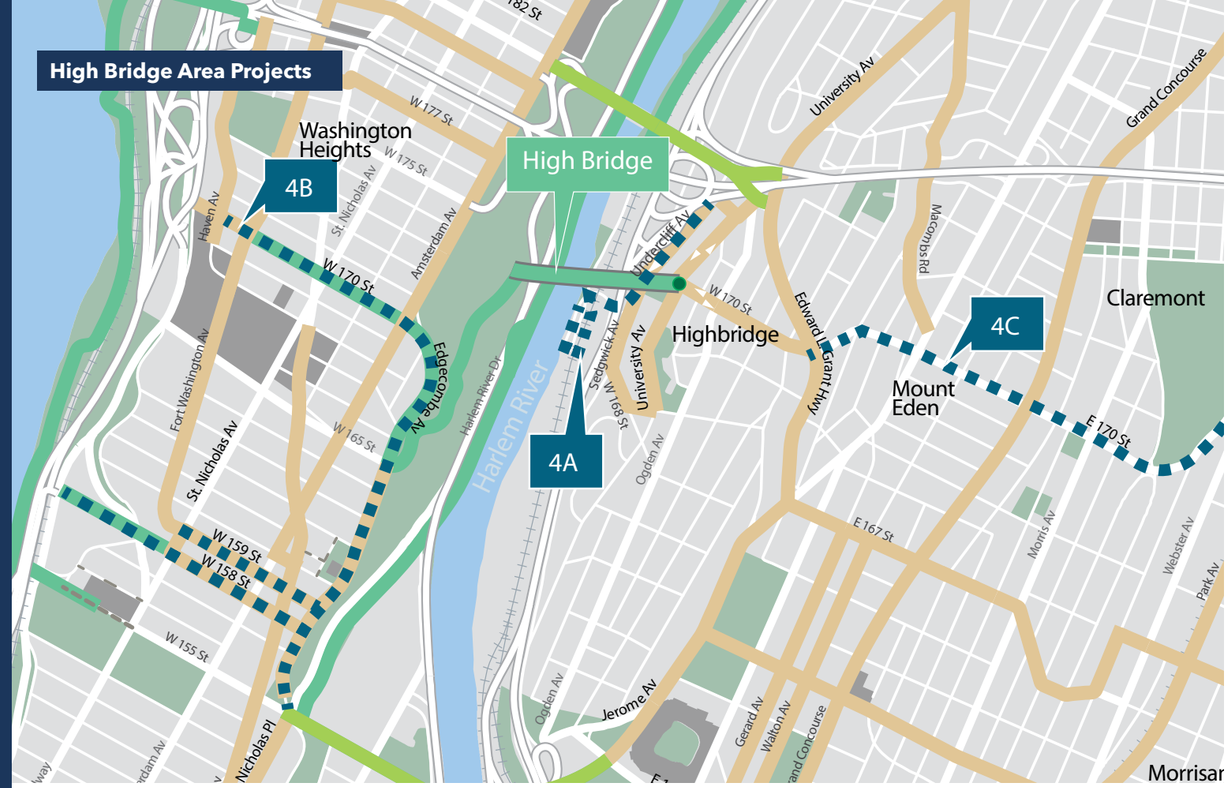
Extend the bicycle route on Tremont Ave and Sedgwick Ave to connect to Roberto Clemente State Park. Note: A portion of this route was installed in 2016 as a result of this planning process.

3E Hudson River Greenway WB Cycling Route Enhancement

Improve access to George Washington Bridge and Hudson River Greenway with marked cycling facilities from Amsterdam Ave.

3A. Washington Bridge, existing

9. Protected two-way bicycle lane, potential configuration



4. High Bridge

Existing Conditions

The High Bridge is a pedestrian and bicycle bridge that connects the neighborhoods of Washington Heights in Manhattan and Highbridge in the Bronx, and is accessible from both boroughs during the parks' open hours. The High Bridge is owned and operated by NYC Parks, and reopened to the public after decades of closure in 2015.

Legend

- Bridge Path Potential Project
- On-Street Potential Project
- Bicycle Path
- Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

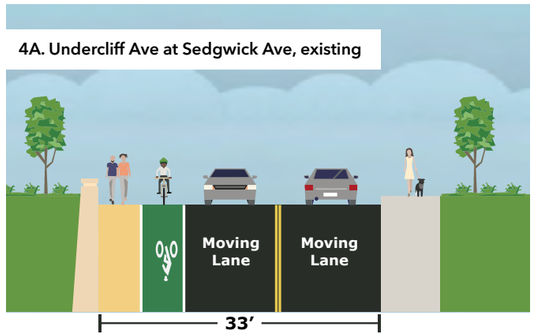
High Bridge, reopened 2015

Potential Improvements

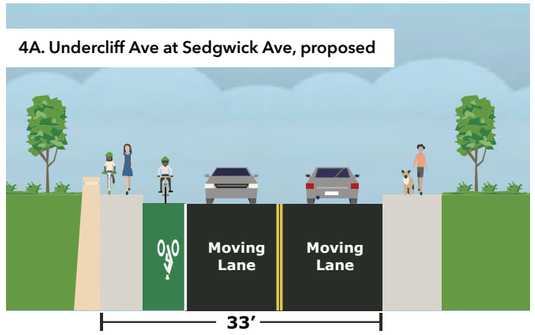
4A High Bridge Bronx Connections
Install pedestrian crossing and protected path from waterfront Bridge Park on Depot Pl to upland neighborhood, High Bridge, and existing bicycle network. Install sidewalk on Undercliff Ave.

4B High Bridge Manhattan Connections
Upgrade existing bicycle route to off-street path where feasible from Hudson River Greenway to High Bridge.

4C 170 St Extension
Explore possible eastward extension of existing bicycle route on 170 St in the Bronx as part of Vision Zero traffic calming.



4A. Undercliff Ave at Sedgwick Ave, existing

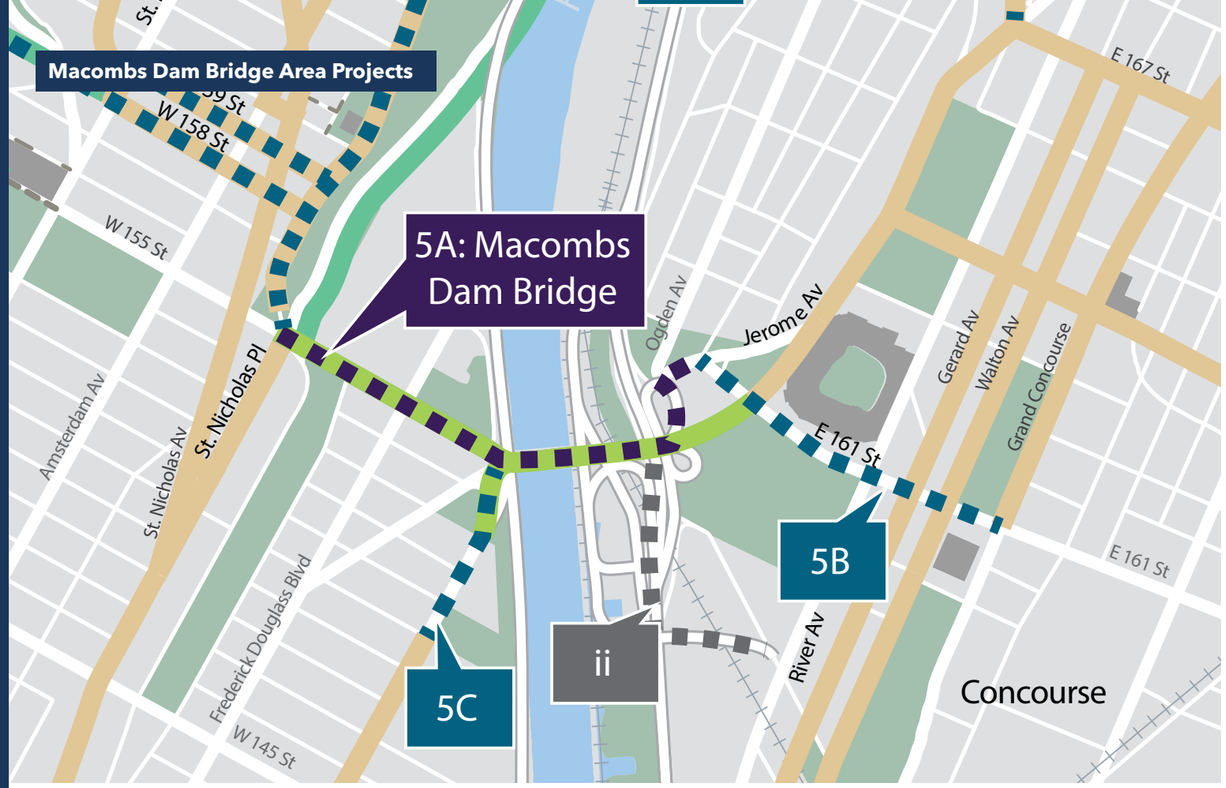


4A. Undercliff Ave at Sedgwick Ave, proposed

4B. Edgecombe Ave High Bridge connection, existing

4B. Capital build out of separated path, potential configuration

4C. Separated two-way bicycle lane, potential configuration



5. Macombs Dam Bridge

Existing Conditions

Macombs Dam Bridge connects to major destinations, including Yankee Stadium. Pedestrians report difficulty with wayfinding and turn conflicts on the bridge. No cycling infrastructure exists on the bridge.


Historic Macombs Dam Bridge

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- i Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Bicycle, Pedestrian, & Vehicle Counts

Counts were conducted on the Macombs Dam Bridge from 7am-7pm on a weekday in August, 2015

1,181 **636**

Vehicular counts were conducted on the continuously for one week in September, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (8AM): 1400 WB / 1058 EB
PM Peak Hour (6PM): 1081 WB / 1116 EB

Potential Improvements

5A Macombs Dam Bridge Bike and Pedestrian Enhancements
Enhance ramp crossings with markings, signage, and signal changes where feasible. Install off-street shared-use path on north side of bridge by expanding decking.

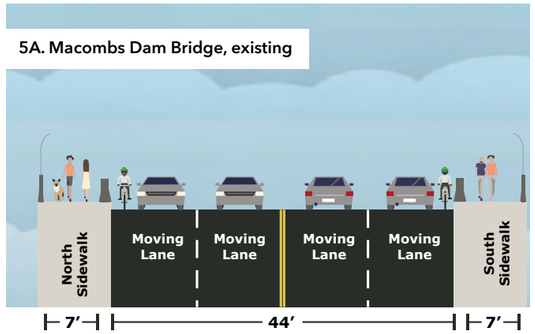
5B Yankee Stadium-Grand Concourse Connector
Install on-street bicycle lanes on E 161 St between Macombs Dam Bridge/Yankee Stadium/Heritage Field and Grand Concourse.

5C Harlem River Park Connection
Install signalized pedestrian crossing at E 155 St and ACP Blvd. Install safety improvements and on-street bicycle markings on ACP Blvd from bridge to W 150 St.

ii Mill Pond Park Waterfront Connection
Work with NYSDOT and NYC Parks to improve connection to Mill Pond Park from Macombs Dam Bridge, as outlined in the Harlem River Brownfields Opportunity Area Nomination report (2015).

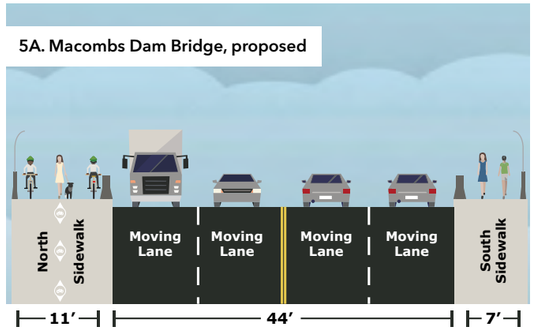

5B. On-street, curbside bicycle lanes, potential configuration


5B. Painted curb extensions and crosswalk, potential configuration

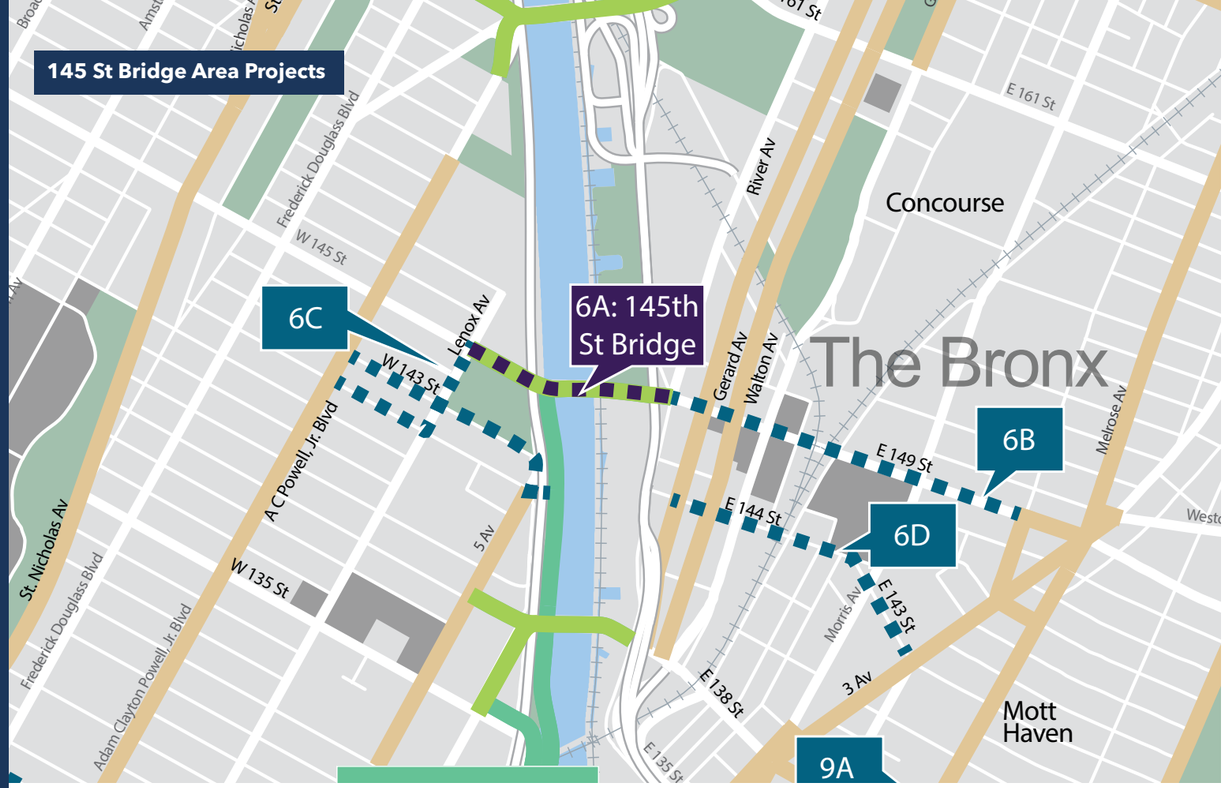


5A. Macombs Dam Bridge, existing


ii. Ramp to Macombs Dam Bridge from Exterior St, existing



5A. Macombs Dam Bridge, proposed



6. 145 St Bridge

Existing Conditions

The 145 St Bridge is one of only two Harlem River crossings that does not intersect a limited-access highway. This bridge, therefore, presents the best opportunity to provide expanded bicycle and pedestrian access between the Bronx and Manhattan. There are no existing bicycle markings on the bridge. Connections to and from the bridge on both sides lack dedicated bicycle facilities.


145 St Bridge

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- i Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Bicycle & Pedestrian Counts

Counts were conducted on the 145 St Bridge from 7am-7pm in August, 2015

2,388 **350**

Vehicular counts were conducted on the continuously for one week in September, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (7AM): 1118 WB / 766 EB
PM Peak Hour (5PM): 754 WB / 1264 EB

Potential Improvements

6A 145 St Bridge Enhancements
Move crossing gates to cantilevered space to create shared-use path on both sides.

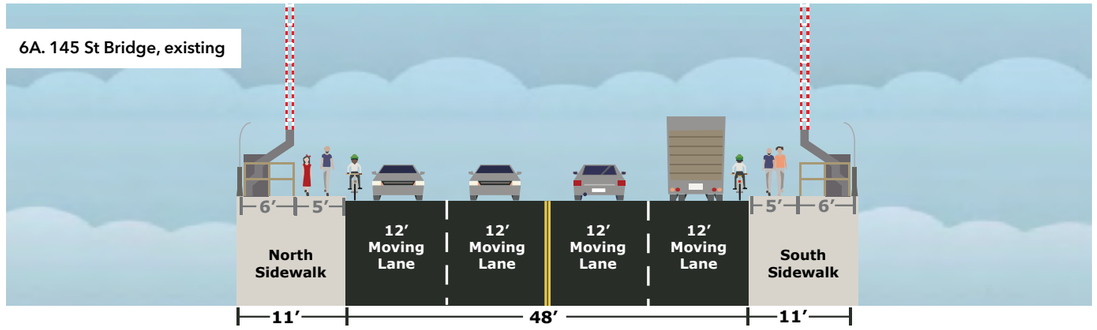
6B E 149 St Vision Zero Enhancements
Install traffic calming and pedestrian enhancements at key intersections along E 149 St, a Vision Zero Priority Corridor. Future capital project: remove pedestrian fencing; add curb extensions and bicycle facilities connecting bridge to bicycle network; and explore 4-to-3 lanes conversion.

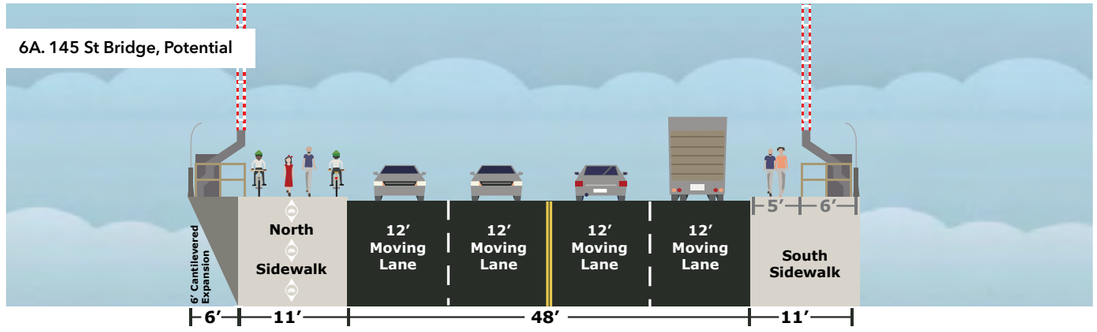
6C Harlem River Greenway Connections
Create pedestrian and bicycle gateway to Manhattan Waterfront Greenway at W 143 St entrance with on-street bicycle markings from bridge to greenway. Explore off-street shared use path through Colonel Charles Young Playground.

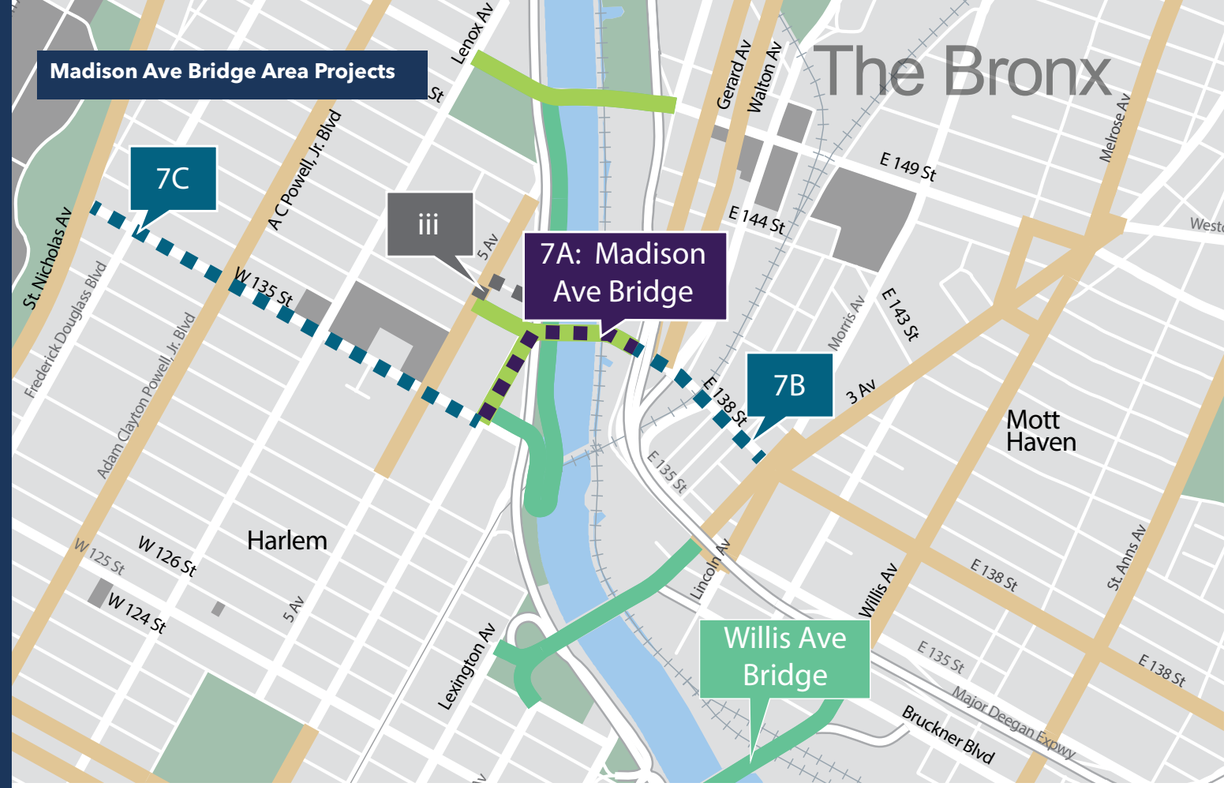
6D East-West Bicycle Route to Hub
Create short-term alternate route to E 149 St to connect 145 St Bridge to the Hub.

6E 145 St Bridge-Harlem River Greenway Connections
Explore future cycling connections to the existing bike network from planned connection across 145 St Bridge. Options include short one-way pair on W 143 St and W 142 St.


6A. 145 St Bridge, existing







7. Madison Ave Bridge

Existing Conditions

The Madison Ave Bridge has a relatively wide sidewalk on both sides of the bridge that could potentially accommodate shared use with bicycles; excess capacity on the Madison Ave approach is currently taken up by a wide buffered space.


7A. Madison Ave Bridge, existing

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- i Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Bicycle & Pedestrian Counts

Counts were conducted on the Madison Ave from 7am-7pm on a weekday in August, 2015

1,479 **288**

Vehicular counts were conducted on the continuously for one week in September, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (7AM): 1596 WB / 1101 EB
PM Peak Hour (4PM): 1160 WB / 1596 EB

Potential Improvements

7A Madison Ave Bridge Enhancements
Expand pedestrian and bicycle space on south side of bridge by re-purposing excess on-street space on Madison Ave approach and allowing shared-use pedestrian and bicycle access on the bridge span, or expand in capital reconstruction (preferred).

7B E 138 St Bicycle Lane Extension
Capital project to reduce pedestrian crossing distances, calm traffic, and install bicycle connection between existing bicycle route on E 138 St to Madison Ave Bridge by reconfiguring medians.

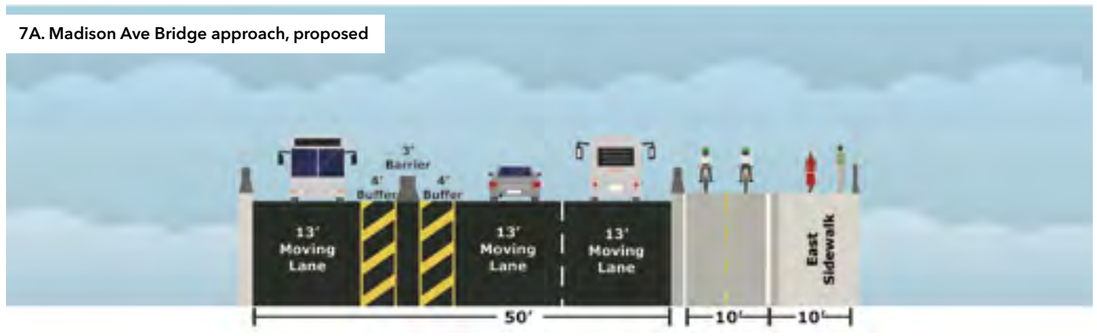
7C Madison Ave Bridge Bicycle Access (135 St)
Explore installation of bicycle infrastructure connecting to proposed Madison Ave bicycle path as part of 135 St Vision Zero traffic calming plan.

iii 5 Ave to Harlem River Greenway Connector
Work with NYSDOT and NYC Parks to re-purpose unused ramp space to provide additional pedestrian and bicycle access to Harlem River Greenway.

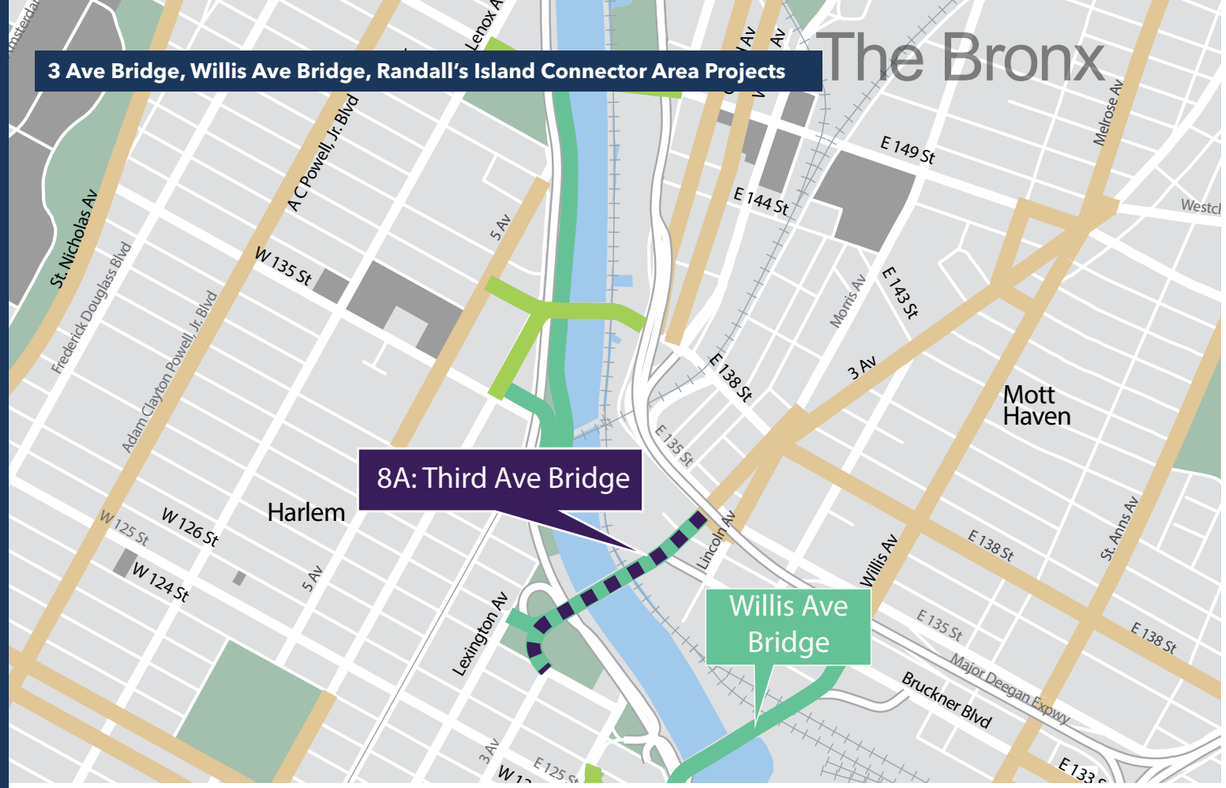

7C. On-street bicycle lanes, potential configuration


7C. Curb extensions, potential configuration

7A. Madison Ave Bridge approach, existing



7A. Madison Ave Bridge approach, proposed



8. Third Ave Bridge

Existing Conditions

The recently reconstructed Third Avenue Bridge is signed as a shared-use bicycle and pedestrian route; however, the narrow width of the path cannot accommodate two-way bicycle traffic as well as a pedestrian at the same point.

Legend

- 1 Bridge Path Potential Project
- Bicycle Path
- Protected Bicycle Path with Access Point
- Existing Bike Facility
- 1 On-Street Potential Project
- i Partnership Opportunity
- Walk Bike
- Dirt Path or Trail

Potential Improvements

8A Third Ave Bridge Bicycle and Pedestrian Improvements (Vision Zero)
Direct cyclists to preferred Willis Ave Bridge route with wayfinding signage. Improve pedestrian access to the Bronx with ADA ramp. Explore at-grade crossing from bridge to Harlem River Park. Explore bicycle connection to future Manhattan Waterfront Greenway segment.

Bicycle & Pedestrian Counts

Counts conducted from 7am-7pm on a weekday in August, 2015

793 **215**

Vehicular counts were conducted on the continuously for one week in September, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (7AM): 1474 SB
PM Peak Hour (5PM): 1159 SB


Manhattan community workshop

Bronx community workshop

9. Willis Ave Bridge, Randall's Island Connector

Existing Conditions

The recently completed Randall's Island Connector provides new bicycle and improved pedestrian access to Randall's Island from the Bronx. Improved access to this new facility along Bruckner Blvd and Willow Ave is proposed for 2017. The Willis Ave Bridge was reconstructed in 2010 to include a wide, shared-use pedestrian and bicycle path.

Willis Ave Bridge shared-use path

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- i Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Bicycle & Pedestrian Counts

Counts conducted from 7am-7pm on a weekday in August, 2015

Willis Ave Bridge 527 996

Vehicular counts were conducted on the continuously for one week in September, 2015. Data represents the average midweek counts Tuesday - Thursday.

AM Peak Hour (7AM): 3535 NB
PM Peak Hour (7PM): 3209 NB

Potential Improvements

9A Willis Ave Protected Path
Shorten crossing distances at bridge approach. Upgrade existing bicycle route to two-way protected bicycle path from bridge to E 140 St.

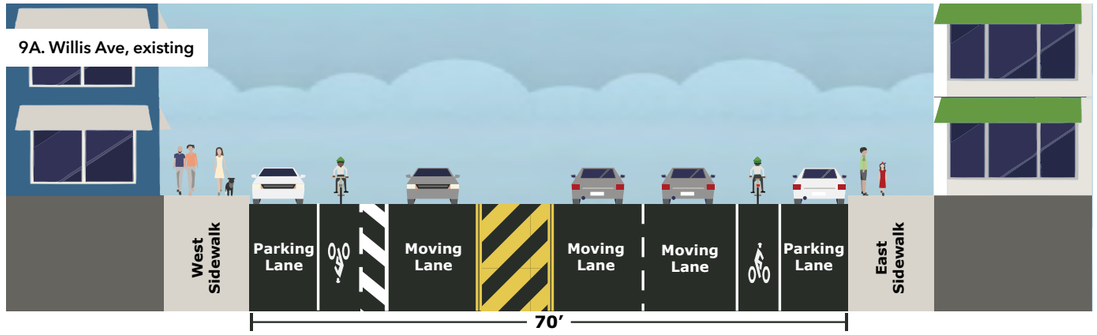
9B Bruckner Blvd
Install protected two-way path on E 132 St and Willow Ave from Randall's Island Connector to existing bicycle network at E 138 St. Future extension along Bruckner Blvd to Longwood Ave.

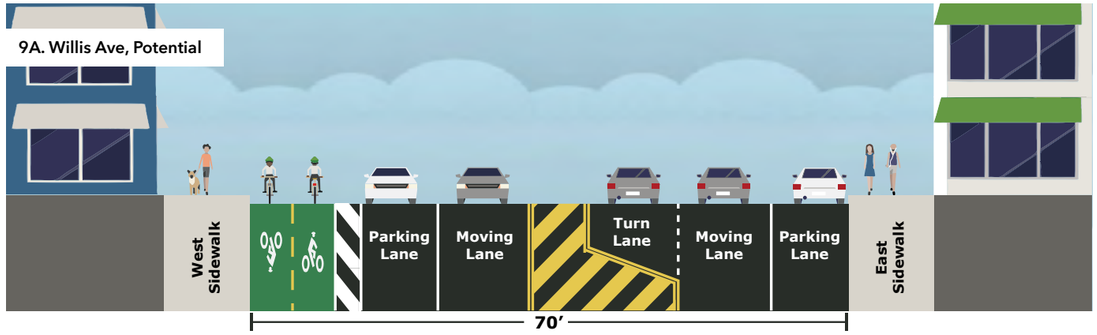
9C Willis Ave-Randall's Island Connector
Upgrade existing bicycle route to protected two-way path on E 133 St from Randall's Island Connector to existing bicycle network at St. Ann's Ave. Future extension to Willis Ave Bridge.

9D Willis Ave Bridge Access Routes and Intersection Improvements
Improve Willis Ave Bridge access with on-street bicycle markings on 1 Ave and E 124 St from bridge path to 2 Ave.

9E Willis Ave Bridge Access Routes and Intersection Improvements
Explore crosstown bicycle connection between Hudson River Greenway entrance at W 129 St and Willis Ave Bridge. Possible routes include one-way pair along portions of 124 St and 126 St.

9A. Two-way parking protected bicycle lanes, potential configuration





10. Wards Island Bridge

Existing Conditions

The Wards Island Bridge is a heavily used, exclusively pedestrian and bicycle bridge connecting the Manhattan Waterfront Greenway to Randall's Island Park.

Bicycle & Pedestrian Counts

Counts were conducted on the Wards Island Bridge from 7am-7pm on a weekday in August, 2015

1,479 **288**

Legend

- 1 Bridge Path Potential Project
- 1 On-Street Potential Project
- Bicycle Path
- i Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail


Wards Island Bridge, existing

Potential Improvements

10A E 111 St
Create pedestrian and bicycle gateway to Manhattan Waterfront Greenway at E 111 St entrance. Install two-way parking-protected path at greenway entrance.

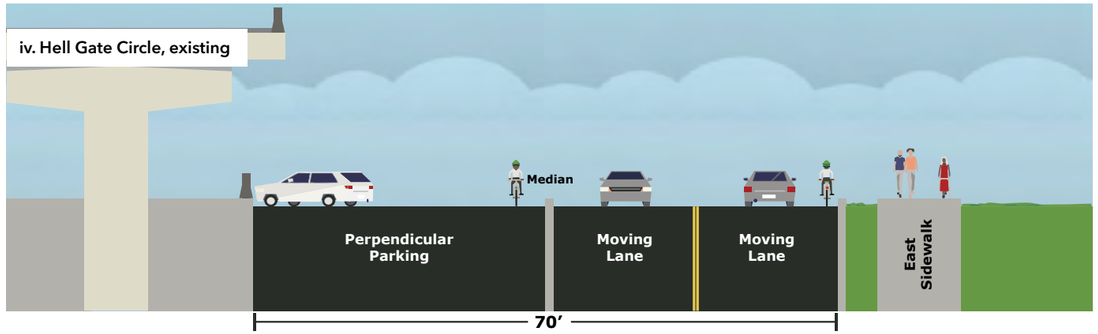
10B Wards Island Bridge Access Improvements
Install street-end improvement with pedestrian and bicycle gateway to Manhattan Waterfront Greenway and the Wards Island Bridge.

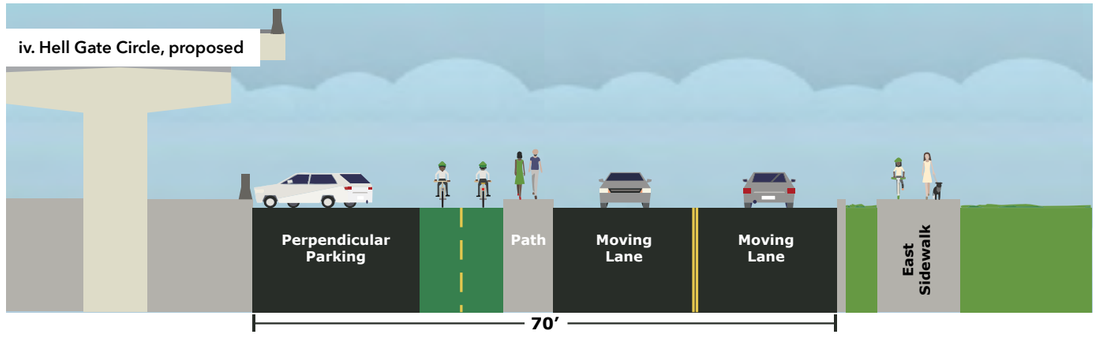
10C 110 St and 111 St and Cathedral Parkway
Explore crosstown bicycle connection to Greenway entrance at E 111 St, connecting to Wards Island Bridge and Randall's Island. Possible routes include one-way pair on E 110 and E 111 St and Cathedral Parkway.

iv Central Road / Hell Gate Circle
Work with NYC Parks to install on-street bicycle markings and build off-street shared use path connecting The Bronx, Queens, and Manhattan access points.


10A. Two-way parking protected path, potential configuration

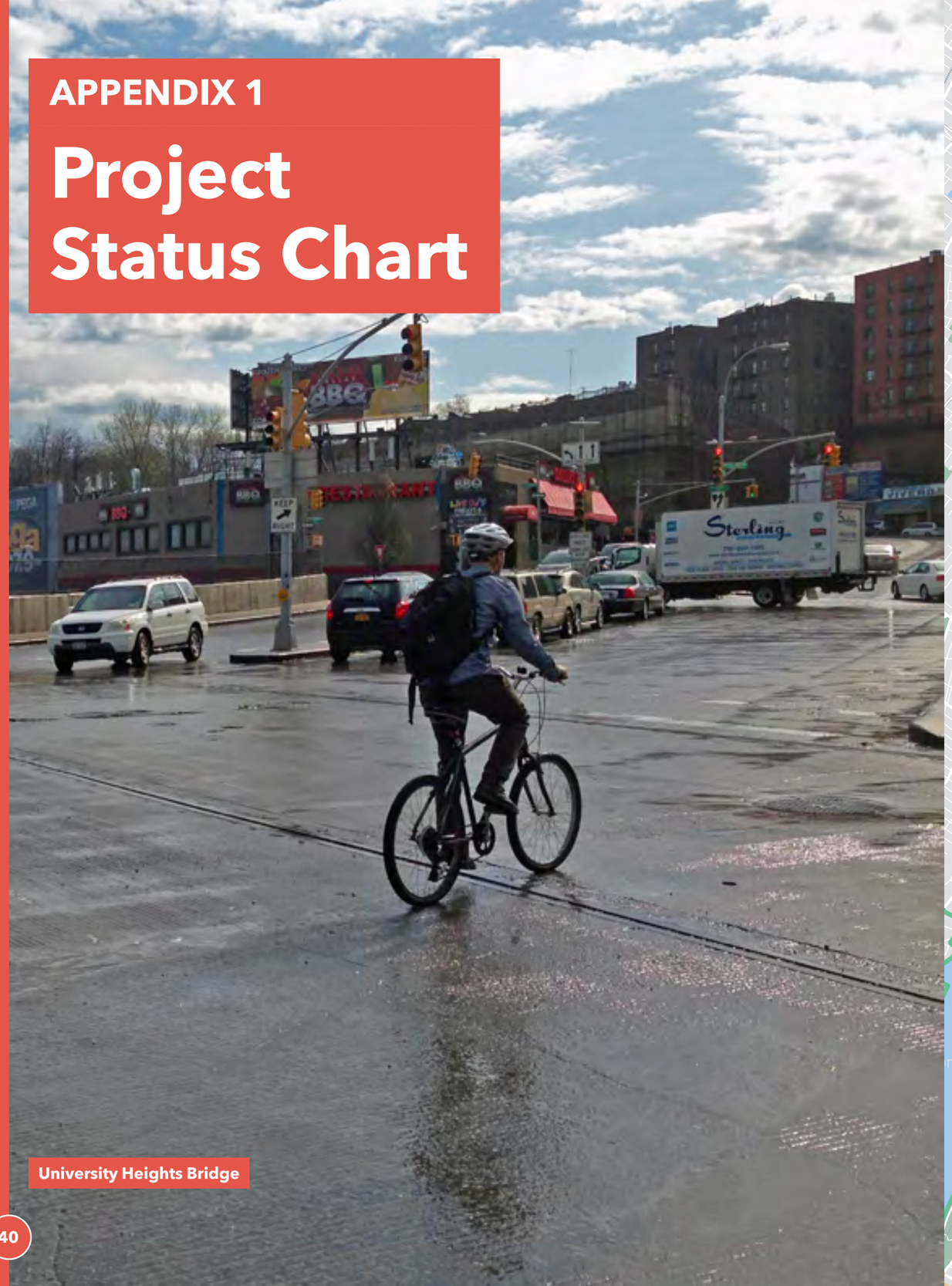

10B. Street end park, gateway to Greenway, potential configuration





APPENDIX 1

Project Status Chart



University Heights Bridge

Project Map

Legend

- Bridge Path Potential Project
- On-Street Potential Project
- Bicycle Path
- Partnership Opportunity
- Protected Bicycle Path with Access Point
- Walk Bike
- Existing Bike Facility
- Dirt Path or Trail

Project		Overview of Potential Improvements		Street Improvement Project		Capital Project		
ID	Project Lead	Bridge / Project Title	Project Description	Design	Construction	Planning	Design	Construction
Henry Hudson Bridge								
i	MTA	HH Bridge Access Improvements	Work with MTA to build out sidewalk, accommodate bicycles on bridge; install crossing/wayfinding at HH Bridge entrance	N/A	N/A			
1. Broadway Bridge								
1A	DOT Bridges	Broadway Bridge Enhancements	Install on-street, buffered bicycle lanes as part of planned bridge replacement	N/A	N/A	Complete	Partially complete	2017 (projected)
1B	DOT	W 225 St & Bailey Ave	Install traffic calming, wayfinding and on-street bicycle markings from bridge to Van Cortlandt Park	Ongoing				
1C	DOT	10th Ave & Broadway	Install intersection improvements, wayfinding, on-street bicycle markings on Broadway & 10th Ave from bridge to existing bicycle network					
1D	DOT	Van Cortlandt Park Greenway Connector	Explore traffic calming, enhanced pedestrian connections, and bicycle infrastructure connecting Mosholu-Pelham Greenway to Broadway and Van Cortlandt Park					
2. University Heights								
2A	DOT Bridges	207 St/University Heights Bridge	Install pedestrian, traffic, and transit improvements on W 207 St between bridge and Post Rd. Long Term: Explore on-street protected bicycle path on bridge with 4-to-3 conversion or cantilever (preferred)	N/A	N/A			
2B	DOT	West Fordham Rd, University Heights Bridge Approach	Shorten crossing distances at bridge approach; install bicycle connection continuing to north side of bridge					
2C	DOT	9 Ave Bridge Access Enhancements	Improve pedestrian, vehicular, and transit access to University Heights Bridge from 9th Ave; explore future bicycle connections as part of bridge improvements					
2D	DOT	University Heights Bicycle Route Connection	Explore bicycle route connection between Grand Concourse and University Heights Bridge					
2E	DOT	Sedgwick Ave	Create north-south bicycle route connection between University Heights Bridge and Roberto Clemente State Park					
3. Washington Bridge								
3A	DOT Bridges	Washington Bridge Bicycle Path	Install 2-way bicycle path on north side of bridge as part of full bridge reconstruction. Explore replacing south stairs with at-grade pedestrian crossing	N/A	N/A	Recommended for CPSD		
3B	DOT	Edward L Grant Highway	Create pedestrian and bicycle gateway to bridge as part of planned SDOT capital project. Upgrade existing bicycle route on E L Grant Hwy to protected path from E 167 St to Tremont Ave	Partially complete				
3C	DOT	Amsterdam Ave/Washington Bridge Approach Improvements	Shorten crossing distances at bridge approach. Install 2-way bicycle path on west side of street from W 180 St to bridge					
3D	DOT	Tremont Ave	Extend the bicycle route on Tremont Ave & Sedgwick Ave to connect to Roberto Clemente State Park.	Complete	Ongoing	Ongoing		
3E	DOT	Hudson River Greenway WB Cycling Route Enhancement	Install westbound cycling route to link Washington Bridge to Hudson River Greenway Entrance					
4. High Bridge								
4A	DOT	High Bridge Bronx Connections	Install pedestrian crossing and protected path from Bridge Park on Depot Pl to upland neighborhood, High Bridge and existing bike network. Install sidewalk on Undercliff Ave.	Complete	Completed in 2015	Ongoing		
4B	DOT	High Bridge Manhattan Connections	Upgrade existing bicycle route to off-street path where feasible from Hudson River Greenway to High Bridge	Complete	Completed in 2015	Ongoing		
4C	DOT	170 St Extension	Explore possible eastward extension of existing bicycle route on 170 St in the Bronx as part of Vision Zero traffic calming					
5. Macombs Dam Bridge								
5A	DOT Bridges	Macombs Dam Bridge Bike/Ped Enhancements	Enhance ramp crossings with markings, signage and signal changes where feasible; install off-street shared-use path on north side of bridge through cantilevered expansion	N/A	N/A	Recommended for CPSD		
5B	DOT	Yankee Stadium--Grand Concourse Connector	Install on-street bicycle lanes on E 161 St between Macombs Dam Bridge/Yankee Stadium/Heritage Field and Grand Concourse	Ongoing				
5C	DOT	Harlem River Park Connection	Install signalized pedestrian crossing at E 155 St and ACP Blvd. Install safety improvements and on-street bicycle markings on ACP Blvd from bridge to W 150 St					
ii	NYS DOT	Mill Pond Park Waterfront Connection	Work with NYS DOT and NYC Parks to improve connection to Mill Pond Park from Macombs Dam Bridge, as outlined in the Harlem River Brownfields Opportunity Area plan (2015).					

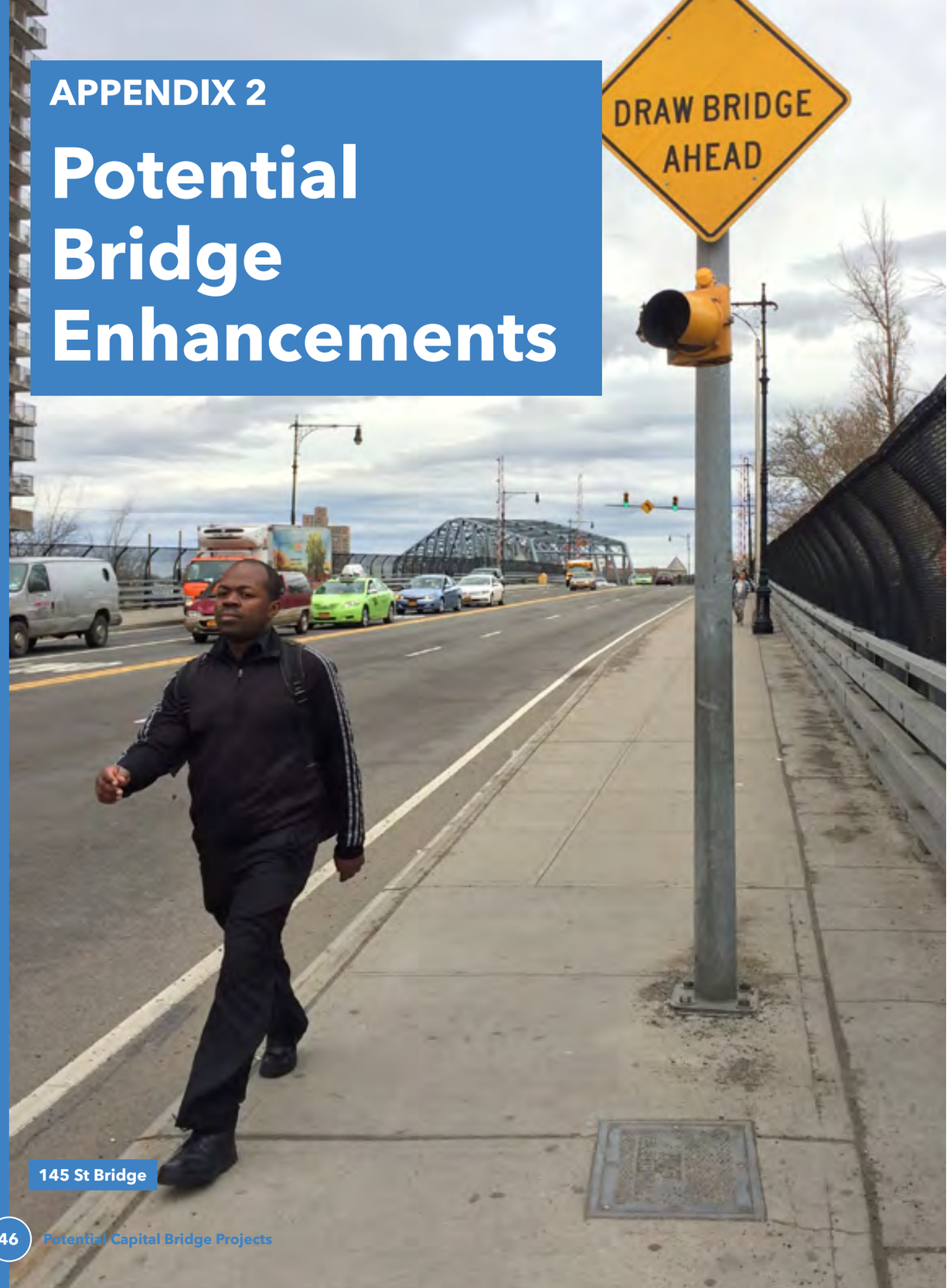
Project status chart will be updated periodically.

Project		Overview of Potential Improvements		Street Improvement Project		Capital Project		
ID	Project Lead	Bridge / Project Title	Project Description	Design	Construction	Planning	Design	Construction
6. 145th St Bridge								
6A	DOT Bridges	145 St Bridge Enhancements (Vision Zero)	Short-Term: Move crossing gates to cantilevered space to create shared-use path on both sides.	N/A	N/A	Recommended for CPSD		
6B	DOT	E 149 St Vision Zero Enhancements	Install traffic calming and pedestrian enhancements at VZ intersections on E 149 St. Future capital project: Remove pedestrian fencing; add curb extensions and bicycle facilities connecting bridge to bicycle network; explore 4-to-3 conversion.			Ongoing		
6C	DOT	Harlem River Greenway Connections	Create pedestrian and bicycle gateway to Manhattan Waterfront Greenway at W 143 St entrance with on-street bicycle markings from bridge to greenway; explore off-street shared use path through Colonel Charles Playground					
6D	DOT	East-West Bicycle Route to Hub	Create short-term alternate route to E 149th St to connect 145th St Bridge to the Hub					
6E	DOT	145 St Bridge/Harlem River Greenway Connections	Explore future cycling connections to existing bike network from planned connection across 145 St bridge. Options include short one-way pair on W143rd St and W 142nd St.					
7. Madison Ave Bridge								
7A	DOT Bridges	Madison Ave Bridge Enhancements	Expand pedestrian and bicycle space on south side of bridge by re-purposing excess on-street space on Madison Ave approach; allow shared-use pedestrian and bicycle access on the bridge span	N/A	N/A	Recommended for CPSD		
7B	DOT	E 138th St Bicycle Lane Extension	Capital project to reduce pedestrian crossing distances, calm traffic, and install bicycle connection between existing bicycle route on 138th St to Madison Ave Bridge by reconfiguring medians	Complete	Completed in 2017	Ongoing		
7C	DOT	Madison Ave Bridge Bicycle Access (135th St)	Explore installation of bicycle infrastructure connecting to proposed Madison Ave bicycle path as part of 135th St Vision Zero traffic calming plan					
iii	NYC Parks / NYSDOT	5th Ave to Harlem River Greenway Connector	Work with NYS DOT and NYC Parks to re-purpose unused ramp space to provide additional pedestrian and bicycle access to Harlem River Greenway	N/A	N/A			
8. Third Ave Bridge								
8A	DOT Bridges	Third Ave Bridge Pedestrian/ Bicycle Improvements (Vision Zero)	Direct cyclists to preferred Willis Ave Bridge route with wayfinding signage; improve pedestrian access to Bronx with ADA ramp. Explore at-grade crossing from bridge to Harlem River Park. Explore bicycle connection to future Manhattan Waterfront Greenway segment.			Recommended for CPSD		
9. Willis Ave Bridge, Randall's Island Connector								
9A	DOT	Willis Ave Protected Path	Shorten crossing distances at bridge approach. Upgrade existing bicycle route to 2-way protected bicycle path from bridge to E 147 St	Ongoing		N/A	N/A	N/A
9B	DOT	Bruckner Blvd	Install protected 2-way path on E 132 St and Willow Ave from RI Connector to existing bicycle network at E 138 St. Future extension along Bruckner Blvd to Longwood Ave	Complete	2017 (projected)	Ongoing		
9C	DOT	Willis Ave--Randall's Island Connector	Upgrade existing bicycle route to protected 2-way path on E 133 St from RI Connector to existing bicycle network at St Ann's Ave. Future extension to Willis Ave Bridge	Complete	2017 (projected)	Ongoing		
9D	DOT	Willis Ave Bridge Access Routes & Intersection Improvements	Improve Willis Ave Bridge access with on-street bicycle markings on 1 Ave and E 124 St from bridge path to 2 Ave	Complete	Completed in 2016			
9E	DOT	Willis Ave Bridge Access Routes & Intersection Improvements	Explore crosstown bicycle connection between Hudson River Greenway entrance at W 129th St and Willis Ave Bridge. Possible routes include one-way pair along portions of 124th St and 126th St.					
10. Wards Island Bridge								
10A	DOT	E 111 St	Create pedestrian and bicycle gateway to Manhattan Waterfront Greenway at E 111 St entrance	Partially complete	2017 (projected)			
10B	DOT	Wards Island Bridge Access Improvements	Install street-end improvement with pedestrian and bicycle gateway to Manhattan Waterfront Greenway and Wards Island Bridge	Complete	Completed in 2015	Ongoing		
10C	DOT	110 & 111 St/Cathedral Parkway	Explore crosstown bicycle connection to Greenway entrance at E 111th St, connecting to Wards Island Bridge and Randall's Island. Possible routes include one-way pair on E 110th and E111th St and Cathedral Parkway.	Partially complete	2017 (projected)	N/A	N/A	N/A
iv	NYC Parks	Central Rd	Work with parks to install on-street bicycle markings and build off-street shared use path connecting Bronx, Queens and Manhattan access points	Complete	2018 (projected)	N/A	N/A	N/A

Project status chart will be updated periodically.

APPENDIX 2

Potential Bridge Enhancements



145 St Bridge

Washington Bridge

Overview

This appendix describes the details of 11 potentially feasible capital projects to improve access across the Harlem River for people walking and biking. These projects are proposed to be implemented over time and as funds become available, leveraging planned bridge maintenance projects as they come on line. NYC DOT will also pursue short-term improvements along selected routes using in-house crews and existing resources to improve the greenway, when and where feasible.

Community response was overwhelmingly in favor of creating new cycling facilities to cross between Manhattan and the Bronx. This plan recommends prioritizing projects that will allow for bicycle crossings roughly every one mile along each shoreline. In general and where feasible, projects that create new, cantilevered space are preferred over those the repurpose space within existing bridge structures. In addition, it is recommended that further study investigate the feasibility of installing new, exclusive pedestrian and bicycle crossings instead of retrofitting existing structures.

Potential projects to enhance bridges not originally designed to accommodate cyclists have been developed with consideration of structural feasibility and potential to add value to bicycle and pedestrian networks. All proposals will require additional study and analysis in order to determine traffic impacts and necessary mitigations during and post-construction.

All projects will be subject to the standard review process, including review by the appropriate Community Boards, before implementation.

Project		Overview of Potential Improvements		Cost	Length		Length	Notes
ID	Bridge	Short Term	Long Term		Begin	End	Approx Linear Feet	
1	**Broadway Bridge**							
1(a)	**Broadway Bridge Pedestrian Enhancements**		Install additional pedestrian crossing at W 225 St to connect to MetroNorth					
1(b)	**Broadway Bridge Bicycle Enhancements**	Install on-street, buffered bicycle lanes in both directions as part of planned bridge replacement		Funded	W 225 St	9 Ave	630	Estimated completion date: 2020
2	**University Heights Bridge**							
2A	**207 St/University Heights Bridge**	Conduct traffic study to analyze potential for 4-to-3 conversion	Build out curb extensions at W 207 St and 9 Ave and W Fordham Rd between Hampden Pl to Major Deegan Expy; enhance pedestrian access to planned waterfront park at Exterior St	$$$	9 Ave	Cedar Ave	1,500	Expanded cantilevered space should be considered as part of any full bridge reconstruction. minimum clear width for two-way bicycle path is 12′
3	**Washington Bridge**							
3A(i)	**Washington Bridge Bicycle Path**		Install two-way barrier-protected bicycle path on north side of bridge connecting to Laurel Hill Terrace by removing one WB travel lane between I-95 and off-ramp	$$$	Edward L Grant Hwy	Amsterdam Ave	2,600	Expanded cantilevered space should be considered as part of any full bridge reconstruction. Ideal width for shared-use path is 14′
3A(ii)	**Washington Bridge Access Enhancements**	Install wayfinding to direct pedestrians to existing at-grade pedestrian crossing from Laurel Terrace; work with NYC Parks to enhance lighting on underpass on south side of bridge	Install at-grade crossing from Amsterdam Ave to Washington Bridge path on south side of bridge	$$$	Edward L Grant Hwy	Amsterdam Ave	2,600	
5	**Macombs Dam Bridge**							
5A(i)	**Macombs Dam Bridge Approach Bike and Pedestrian Enhancements**		Install off-street shared-use path on north side of bridge by re-allocating space from south side on 155 St approach	$$$	Harlem River Dr	Adam Clayton Powell Jr. Blvd	1,700	Expanded cantilevered space should be considered as part of any full bridge reconstruction. Ideal width for shared-use path is 14′
5A(ii)	**Macombs Dam Bridge Bike and Pedestrian Path Enhancements**		Cantilever out immobile section of bridge to create min. 11′-wide path on north side; possible footing location for cantilever (if necessary) is in parking lot below bridge. Swing portion of bridge to remain as-is	$$$	Eastern end of swing bridge	Major Deegan Expy	415	Immobile section of bridge can be more easily expanded than swing portion of bridge; swing bridge is wide enough to accommodate limited shared use between cyclists and pedestrians; additional width may be needed at gates; likely that a new substructure could be located to support an expanded path
5A(iii)	**Macombs Dam Bridge Ramp Crossing Enhancements**	Enhance ramp crossings with markings, signage, and signal changes	Add signalized crossing for pedestrians at 155 St and Adam Clayton Powell Jr Blvd		Adam Clayton Powell Jr. Blvd	E 161 St	1,900	
6	**145 St Bridge**							
6A	**145 St Bridge Enhancements**	Install curb extensions at intersections on both approaches	Move crossing gates to cantilevered space to create shared-use or two-way bicycle path on one or both side s	$$$	Malcolm X Blvd	Exterior S	1,800	Potential to move crossing gates on both sides
7	**Madison Ave Bridge**							
7A	**Madison Ave Bridge Enhancements**	Expand pedestrian and bicycle space on south side of bridge by re-purposing excess on-street space on Madison Ave approach and removing one southbound lane from merge; allow shared-use pedestrian and bicycle access on the bridge span	Reconstruct Bronx approach to expand shared pedestrian/ bicycle space on south side of the Madison Ave Bridge	$$	135 St	E 138 St/Swing Bridge	1,000	May be possible to construct short-term improvements as in-house project; swing bridge to remain as-is; eastbound approach to the Bronx side (Exterior Street /183th Street) widens from approximately 25′ (end of swing bridge) to 29′ (end of bridge) to 33′ (stop bar); southern Jersey barrier separating EB travel lanes from pedestrian path could potentially be moved by a maximum of 3′ to widen the pedestrian path, reducing width of travel lanes to approximately 30′ (3x10′) at intersection
8	**Third Ave Bridge**							
8A	**Third Ave Bridge Bicycle and Pedestrian Improvements**	Direct cyclists to preferred Willis Ave Bridge route with wayfinding signage; improve pedestrian access to Bronx with ramp improvements	Widen path on one side to 10′ to allow two-way bicycle traffic by expanding span width; explore at-grade crossing from bridge to Harlem River Park; explore bicycle connection to future Manhattan Waterfront Greenway segment.	$$$			n/a	Third Avenue Bridge was recently replaced. Expanded cantilevered space should be considered as part of any future full bridge reconstruction. Ideal width for shared-use path is 14′