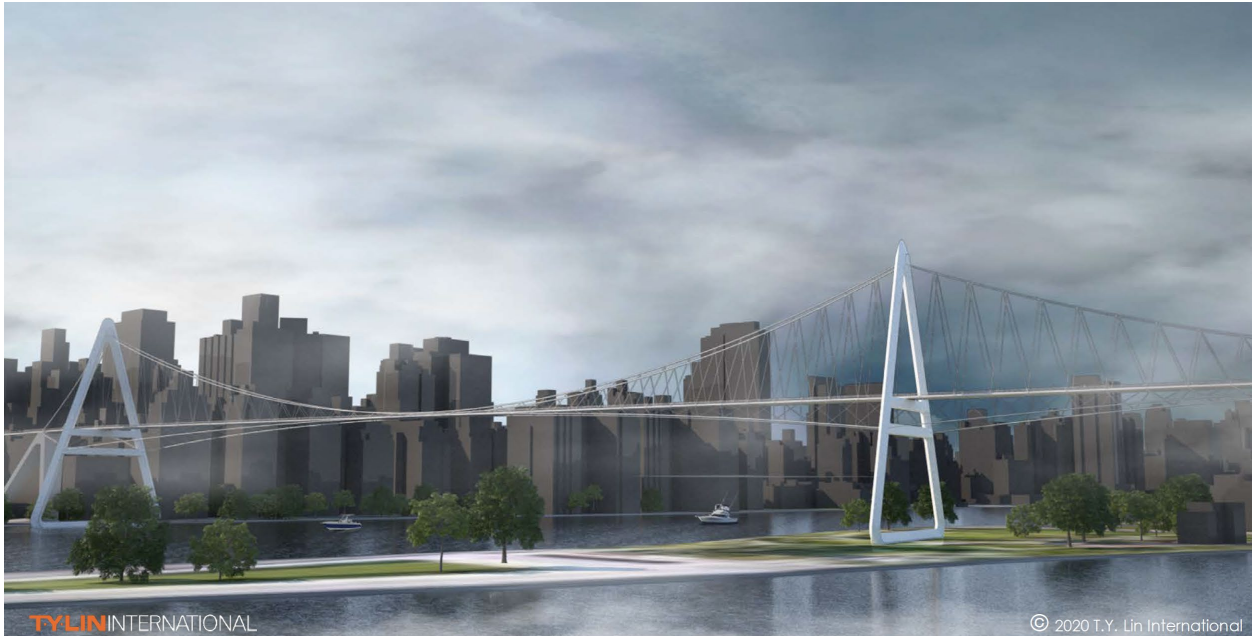


The Queens Ribbon



The proposed "Queens Ribbon" a bicycle-pedestrian bridge connecting Queens to Manhattan (rendering by T.Y. Lin International).

A plan for three new car-free bridges to Manhattan's Business District from Queens, Brooklyn, and New Jersey

June 24, 2020



TY·LIN INTERNATIONAL

Sam Schwartz

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1. Introduction

At the start of the Covid-19 crisis a group of transportation engineers began working together, on a pro bono basis, to develop a transportation system that would provide an almost risk-free method of travel to Manhattan’s Central Business District (CBD – Manhattan south of Central Park). The impetus for this grouping was the realization that the city may face similar epidemics, a severe flu season, or other man-made or natural disasters in the future. Experience told the group that the two forms of transportation that are most risk-free from both infections and crashes are walking and bicycling. These “active transportation” options are also healthy modes that burn calories, and build muscle, bone, heart, and lung strength while improving mental and emotional health. From this discussion, the idea of a bicycle-pedestrian bridge was born. Importantly, these facilities would be equitable. Costs to use them would be a pair of shoes or a bicycle.

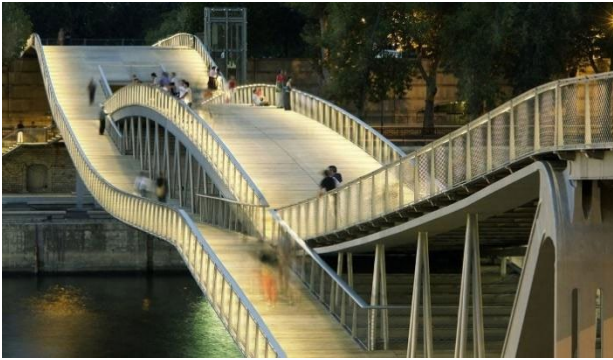
The group included teams from the Institute of Design & Construction (IDC) Innovation Hub of the NYU Tandon School of Engineering, T.Y. Lin International, and Sam Schwartz Engineering. Together, they are proposing the creation of three new bridges to connect Manhattan’s CBD from Queens, Brooklyn, and New Jersey.

Each bridge could handle approximately 20,000 people daily; the three bridges combined could carry the equivalent of 60 packed subway trains or roughly 50,000 cars per day.

The bridges are referred to as “ribbons” because of their slenderness that will appear as relatively thin lines across the water. Also, the concept design was inspired by “stress ribbon” bridge technology used to hang pipelines across expanses of rivers and gorges.

The New York bridges would be car-free with a 20-foot roadway to accommodate cyclists and walkers. It is estimated that each bridge could handle approximately 20,000 people daily; the three bridges combined could carry the equivalent of 60 packed subway trains or roughly 50,000 cars per day.

The team took inspiration from a wave of recent pedestrian-bicycle bridges built in cities around the world. Images below show some examples from other global cities such as Paris, London, Amsterdam, and Singapore. A larger inventory of pedestrian-bicycle bridges is provided in the Appendix to this report.



Passerelle Simone-de-Beauvoir. Paris, France



Millennium Bridge. London, UK



Nescio Bridge. Amsterdam, NL



Helix Bridge. Singapore

2. Background

The current long-term growth in bicycling in New York City could not have happened without ready access to the CBD via the four venerable bridges – the Brooklyn, Manhattan, Williamsburg and Ed Koch Queensboro. The well-used bicycle and pedestrian paths on these bridges have nearly or already reached their capacity allowing for very limited future growth in bicycling. If bicycling achieved a respectable 3% share of total trips to the CBD, up from the current 0.5% from Queens and Brooklyn, the existing bridges would greatly exceed their capacity creating a condition of bike-lock. Battle cries have already emerged from Queens bike riders and walkers regarding the insufficient capacity at the Ed Koch Queensboro Bridge.

If bicycling achieved a respectable 3% share of total trips to the CBD, up from the current 0.5% from Queens and Brooklyn, the existing bridges would greatly exceed their capacity creating a condition of bike-lock.

In addition, the Covid-19 pandemic has affected the world in previously unimagined ways. Clearly, the health and well-being of citizens is of paramount importance. With New York City having had the unfortunate distinction of being the epicenter of Covid-19 in the U.S., many areas of focus—in addition to the pressing health need for a vaccine—have become apparent. One is mobility. Transit has become crippled and the public, in NYC and worldwide, has been looking for alternatives to the automobile. Walking and biking have become mode choices for many more urban dwellers.

Major world cities including London, Paris, Berlin, Milan, and Bogotá have redefined themselves by adapting their street networks to active transportation (walking and biking) and micro-mobility (scooters, e-bikes, Segways, etc.). New York City is following suit and is expanding its bike network and adding street space for pedestrian use.

People are looking for more options that are cost-effective and responsive to their travel needs with walking and bicycling becoming ever more popular. However, much more is needed to truly accommodate this amazing response. As substantiation of this, during the pandemic, bicycle shops became overwhelmed and needed to restock their supply of bikes. However, without substantial expansion of the bike network, the growth in active forms of transportation will be stunted. Now is the time to explore expanded options to get to the CBD. The optimal solution would be one that is easy to navigate, cost effective, and sustainable. Bicycle-pedestrian bridges beautifully fit these needs. No new bridge serving the CBD has been constructed since 1909 with the completion of the Manhattan Bridge. Elected officials and others have been calling especially for more access on the Ed Koch Queensboro and Brooklyn bridges. Moreover, there is no direct bridge crossing of the Hudson River for bicycle and pedestrian travel from New Jersey to the Manhattan CBD. The time is ripe for action!

3. The Need for Bicycle-Pedestrian Bridges

New York City is home to the largest bicycle network in North America, with over 1,200 miles of bike routes. Each weekday, 3.8 million people enter the CBD with about 0.1% currently arriving by bicycle (0.5% from Queens and Brooklyn, virtually none from New Jersey). Usage of the four East River bridges has been growing steadily in the past decade, and their bicycle and pedestrian paths will soon be overwhelmed as commuters turn more and more to relying on walking and bicycling. As stay-at-home restrictions resulting from Covid-19 are relaxed, the “old ways” of getting around will no longer be as attractive. Streets will need to be more welcoming to all travelers as shared streets grow in popularity and acceptance. Congestion charging of motorists entering the CBD will dampen the desire for many to travel by auto. Other commuters will be looking for alternatives to the subways and buses as these services adjust their operations in response to concerns about personal hygiene and social distancing.

To accelerate the growth of bicycling, the New York City Department of Transportation (NYCDOT) is building a robust system of bicycle routes, including Protected Bike Lanes, to traverse and connect all five boroughs. Nearly 800,000 New Yorkers ride a bike regularly. It is estimated that over 490,000 cycling trips are made each day in New York City—triple the amount taken 15 years ago. NYCDOT is predicting that one out of every 10 trips in the City will be taken by bicycle by 2050. Pedal assisted e-bikes, cargo bikes, and e-scooters will

No new bridge serving the CBD has been constructed since 1909 with the completion of the Manhattan Bridge.

NYCDOT is predicting that one out of every 10 trips in the City will be taken by bicycle by 2050.

complement this growth. Limitations of our existing infrastructure, especially for access to Manhattan, will constrain this growth.

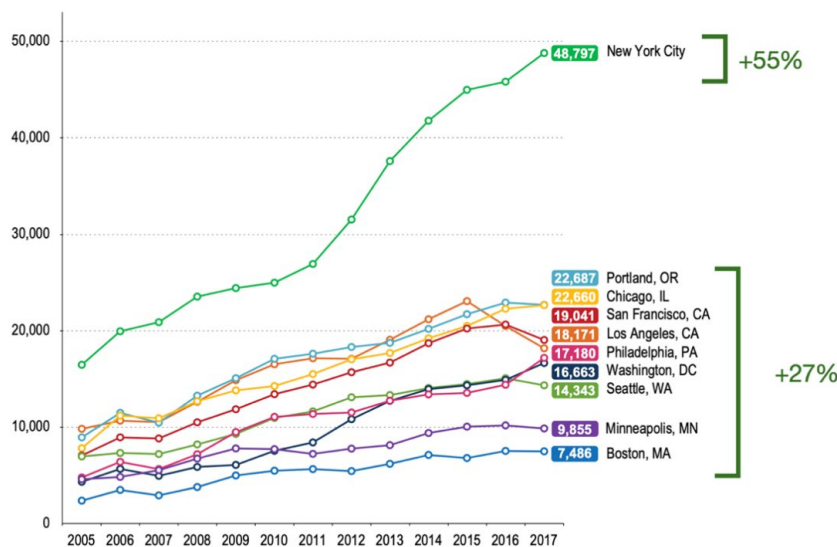
As an example, the bike paths over the East River have experienced a 132% growth in usage over the past decade, but with little to no increase in capacity. The Brooklyn Bridge Promenade is experiencing the most acute congestion, earning the moniker “Times Square in the Sky” for its intense concentration of tourists, cyclists, and others crossing the river. While we recognize the City’s efforts to relieve overcrowding by increasing the capacity of the Brooklyn Bridge Promenade—including one proposal to double the width of the mid-span between the two bridge towers—this is not sufficient. The Manhattan Bridge also shares significant capacity issues, having experienced a 10% growth in cycling from 2013 – 2018. On the Ed Koch Queensboro Bridge—which experienced the highest bicycle growth of any East River bridge from 2013 – 2018 at 19%—pedestrians and bicyclists must share limited space on the north outer roadway, creating safety and capacity issues.

The bike paths over the East River have experienced a 132% growth in usage over the past decade.

As the City grows, and more people bike, congestion on the bridges will only worsen. The tremendous development along the waterfront in Brooklyn, Queens, Jersey City and Hoboken, and the increasing popularity of “active transportation” is bringing our infrastructure to a breaking point. Should cycling’s share of work-trips to Manhattan increase from the current 0.5% to 3% (Portland, OR already sees 6%), congestion on the bridges would reach conditions of *bike-lock*; ultimately many would be forced to walk their bikes; many more would give up.

COMMUTE TO WORK ROLLING 3-YEAR AVERAGE 2012-17

Cycling to work in NYC has grown nearly 2x faster than in other major cities.



Graph from NYCDOT

In response to this, we propose the construction of three new bridges to Manhattan—from Queens, Brooklyn, and New Jersey (Hoboken/Jersey City)—to accommodate the growing surge in bicycling and walking.

4. Three New Bridges – Alignment Options

Three new bridges would serve the Manhattan CBD, one each from Queens, Brooklyn and New Jersey. The bridges would be an integral part of the region’s transportation network, complementing new and proposed bike routes, subway and PATH lines, ferry, and light rail options. The bridges are:

1. Queens-Roosevelt Island-Midtown Manhattan
2. Brooklyn-Governors Island-Lower Manhattan
3. New Jersey-Hudson Crossing-Midtown Manhattan

The construction of these bridges would be in the vicinity of \$100 million each, less than half the cost of construction of the popular High Line, and perhaps a hundredth the cost of a new subway line.

We estimate that the construction of these bridges would be in the vicinity of \$100 million each, less than half the cost of construction of the popular High Line, and perhaps a hundredth the cost of a new subway line. The bridges would be built in a similar manner, using a 20-ft wide bridge deck and stress-ribbon engineering to yield a slender yet strong footprint.

These bicycle-pedestrian bridges could be one of the most efficient investments the city could make per trip, not to mention the health benefits for those using the bridges and the reduction of our carbon footprint, which would aid all New Yorkers. It is not too early to begin planning for new river crossings; we need to invest now or risk stifling the continued growth in cycling.

Queens-Roosevelt Island-Midtown Manhattan Crossing

The first of the new ribbon bridges would connect Long Island City, Roosevelt Island (including its Cornell Technion Campus), and Midtown Manhattan, enhancing the prudent development potential for Long Island City and the surrounding area.

These new ribbon bridges would have a cross-section of 20’ in width.

Brooklyn-Governors Island-Lower Manhattan Crossing

The second bridge would serve Brooklyn commuters with a span across the New York Harbor. Connections could be made to the Brooklyn Bridge Park pier area, bicycle-friendly Governors Island, and the Financial District of Lower Manhattan where connections could be provided within the right-of-way of the south portion of the FDR Drive.

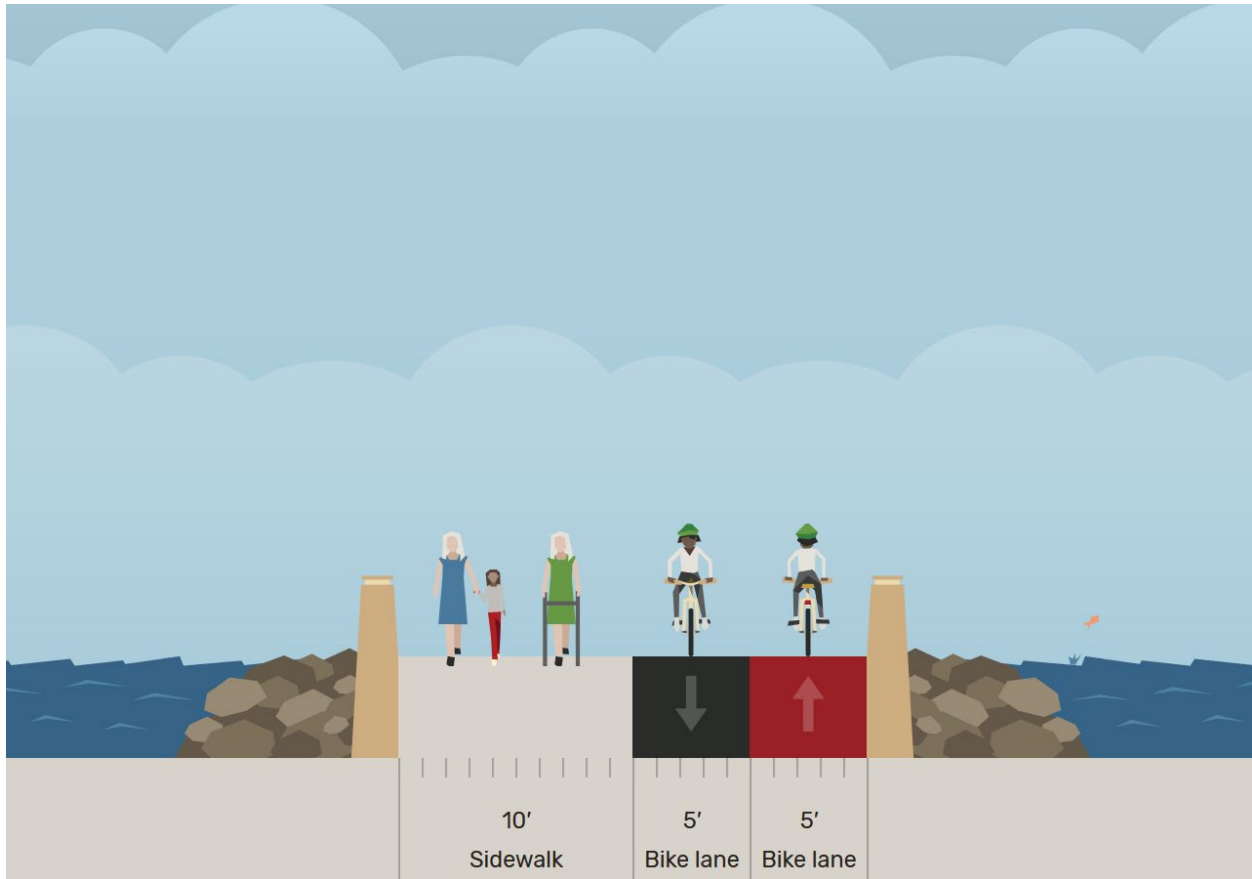
New Jersey-Midtown Manhattan Crossing

The third crossing would serve commuters primarily from Hudson County, including Hoboken and Jersey City. The bridge would cross the Hudson River and provide access to Midtown Manhattan utilizing the bicycle facilities in New Jersey. The bridge would connect readily with the existing light rail line along the New Jersey waterfront and possibly the High Line on the West Side of Manhattan.



Proposed new bridge alignments

These new ribbon bridges would have a cross-section of 20' in width, with no grade separation between bicyclists and pedestrians, perhaps using different colored paint-treatments to differentiate travel lanes.



Ribbon Bridge Typical Cross-section

5. Queens – Roosevelt Island – Midtown Manhattan Ribbon Bridge Case Study

The focus of this report is the concept design for the pedestrian-bicycle bridge that will connect midtown Manhattan, Roosevelt Island (including a connection to the Cornell Technion campus) and Long Island City (perhaps the budding development at Anable Basin). This bridge consists of a very slender concrete ribbon supported by suspension cables in three planes, one vertical and two inclined, creating a structure that is immensely light yet inviting and functional for both pedestrians and bicycles.

The pedestrian-bicycle bridge will connect midtown Manhattan, Roosevelt Island (including a connection to the Cornell Technion campus) and Long Island City.

The suspension cables are supported by three delta shaped towers located near the Manhattan shore, at Roosevelt Island, and near the Long Island shore. The form of the towers permits the suspension of the cables in the vertical plane as well as providing support for the stiffening cables in the near horizontal planes.

The slender concrete deck is prestressed by internal cables that follow the arching vertical profile of the deck. The gravity load of the concrete deck is supported by two main catenary

cables in the vertical plane and stabilized against lateral loads by the two near horizontal stiffening cables. The aerodynamic stability of the bridge is ensured by the geometric stiffness of the deck and the external suspension cables.

The bridge consists of two back-to-back suspension bridges, each with a span of 1150 feet. The deck is very slender with a total width (including roadway and parapets) of 27 feet and a depth of only 2 feet. The deck has a vertical clearance of 125 feet over the navigation channels of the East River.

The delta shaped towers are about 300 feet tall and 200 feet wide. The triangular form of the towers is functional yet futuristic, lending a strong presence to an otherwise transparent structure.

The deck would have observation belvederes near the towers to provide panoramic views and will provide elevator access to Roosevelt Island and the Cornell Technion campus.

The triangular form of the towers is functional yet futuristic, lending a strong presence to an otherwise transparent structure.

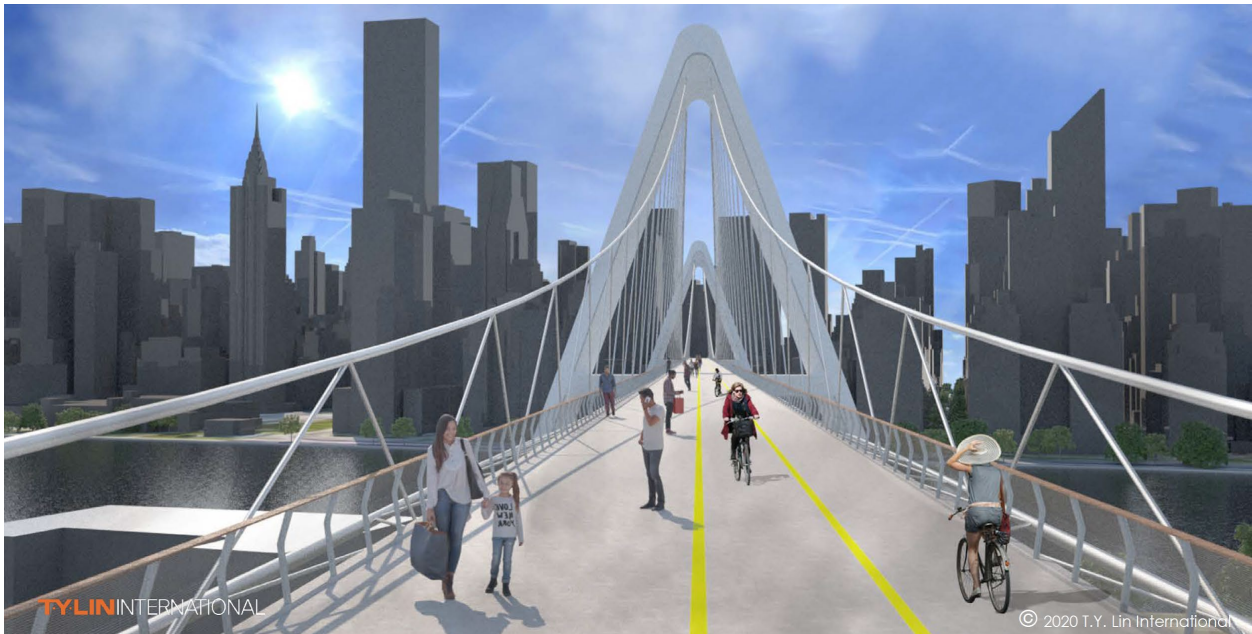
The deck would have observation belvederes near the towers to provide panoramic views.



View from Queens to Manhattan (rendering by T.Y. Lin International).



View from Manhattan's eastside (rendering by T.Y. Lin International).



View of bridge deck looking towards Manhattan showing dedicated facilities for bicyclists and pedestrians (rendering by T.Y. Lin International).

To provide improved access by bike, several new and enhanced bike routes need to be provided. These include protected bike lanes in Queens on 11th Street, 44th Drive, and Center Boulevard and new bike facilities on Jackson Avenue, Borden Avenue, Review Avenue, and Rust Street. In Manhattan, reliance on First and Second avenues' protected bike lanes would serve the new bridge. Upgrading of the existing bike rights-of-way on 48th and 51st streets in Manhattan would be beneficial as well as completion of the East River Greenway.

The technical planning and design of the bridge would be subject to an environmental review process, culminating in an Environmental Impact Statement. It would also require a Uniform Land Use Review Procedure. Critical stakeholders during the planning and design process include the U.S. Army Corps of Engineers and the Coast Guard, as well as other appropriate agencies.

Based on trends in growth of bicycle volumes on the Ed Koch Queensboro and Williamsburg bridges, it is estimated that more than 17,000 bicyclists and 5,000 pedestrians per weekday in 2028 will want to use these two bridges creating a strong desire for a new connection.

6. Conclusion

As we continue to deal with the effects of COVID-19 in so many ways—social, health, and economic—we also know that other epidemics, superstorms, blackouts, transit strikes, and man-made disasters affecting our transport systems are likely to follow in the ensuing years. We need to be prepared on as many levels as possible. From a transportation perspective, a pedestrian-bicycle means of travel can prove invaluable. However, even without these damaging and tremendously concerning epidemics or other disasters, having a means of travel such as the Queens-Roosevelt Island-Midtown Manhattan (*Queens Ribbon Bridge*), the Brooklyn-Governors Island-Lower Manhattan Bridge, and the New Jersey-Hudson Crossing-Midtown Manhattan Bridge would be tremendous assets.

Imagine the ability to use active transportation in a safe and simple manner to get to work—free of automobiles—knowing that you are contributing to a reduction in air pollution. Imagine walking or cycling with family and friends for a leisurely outing along the water, gazing at the New York skyline knowing that you are participating in a heart-healthy activity. Imagine having tourists and New Yorkers alike finding a new and iconic “destination” and marveling at the beauty of a ribbon bridge knowing that sustainability is at the core of this entire venture.

Imagine no more. It is time to make imagining reality.

Imagine no more. It is time to make imagining reality. New York deserves nothing less.

APPENDICES

A. Worldwide Bicycle-Pedestrian Bridges

Bridge	City	Crosses over	Modes	Width (ft)	Length (ft)	Built (or repurposed)	Cost (Million \$)	Notes
Tilikum Crossing	Portland, OR	Willamette River	Bike, Ped, Light Rail, Buses	75	1720	2015	135	
Walkway over the Hudson	Poughkeepsie/Highland, NY	Hudson River	Ped, Bike, Roller blades	35	6768	1889 --> 2009	39	Second longest in world
Bob Kerrey Pedestrian Bridge	Omaha/Council Bluffs	Missouri River	Ped, Bike	20	3,000	2008	22	Longest to connect two states
John Seigenthaler Pedestrian Bridge	Nashville, TN	Cumberland River	Ped, Bike	36	3150	1909-->2003	15 (refurbished)	
Big Dam Bridge	Little Rock, AS	Arkansas River/Dam	Ped, Bike	14	4226	2006	13	
Blaauwe Loper (Blue Carpet)	Netherlands	multiple	Ped, Bike		2600	Under construction	7	
James D. Pfluger Pedestrian and Bicycle Bridge	Austin	Lady Bird Lake	Ped, Bike	42	812	2001		
Don Burnett Bicycle-Pedestrian Bridge	Cupertino, CA	I-280	Ped, Bike		503	2008	15	
Nescio Bridge	Amsterdam, NL	Amsterdam-Rhine Canal	Ped, Bike		2600	2006	15	Cost in Euros
Knickerbocker Bicycle Bridge	Eugene, OR	Willamette River	Ped, bike	14	523	1980	0.44	also carries water main
Peter DeFazio Bridge	Eugene, OR	Willamette River	Ped, Bike		590	2000	2.8	
Autzen Footbridge	Eugene, OR	Willamette River	Ped, Bike	14	667	1970	0.175	also included steam pipe
BP Bridge	Chicago	Columbus Drive	Ped, Bike	20	935	2004	14.5	
Pedro e Ines Bridge	Coimbra, Portugal	Rio Mondego	Ped, Bike	13	825	2006	3.5	Cost in Euros
Passerelle Simone-de-Beauvoir	Paris, France	Seine	Ped, Bike	39	997	2006	21	Cost in Euros
Infinity Bridge	Stockton, England	Tees River	Ped, Bike	16	787	2008	15	Cost in British pounds
Kurilpa Bridge	Brisbane, AU	Brisbane River	Ped, Bike	21	470	2009	63	Cost in AUSS
Te Rewa Rewa Bridge	New Plymouth, NZ	Waiwhakaio River	Ped, Bike	8	210	2010	2.8	Cost in NZ \$
Big Four Bridge	Louisville to Jeffersonville	Ohio River	Ped, Bike		2525	1895-->2014		
Mohawk Valley Gateway Overlook	Amsterdam, NY	Mohawk River	Ped	30	511	2016	18	
Lille Langebro	Copenhagen	Harbor	Ped, Bike	21	574	2019	9	Cost in British pounds
Hovenring	North Brabant	Roadways	Bike	15	72m diameter	2012	6.3	Cost in Euros
Millennium Bridge	London	Thames	Ped	13	1066	2000	27	
Gateshead Millennium Bridge	Tyneside, UK	Tyne River	Peds, Bikes	26	413	2001	35	
Helix Bridge	Singapore		Peds		918	2010	50	



Tilikum Crossing, Portland, OR.



Passerelle Simone-de-Beauvoir, Paris, France



Bob Kerrey Pedestrian Bridge, Omaha, NE/Council Bluffs, IA



Millennium Bridge, London, UK



John Seigenthaler Pedestrian Bridge, Nashville, TN



Helix Bridge, Singapore



Big Dam Bridge, Little Rock, AS



Gateshead Millennium Bridge, Tyneside, UK



Blauwe Loper, Netherlands (rendering)



Peter DeFazio Bridge, Eugene, OR



James D. Pfluger Pedestrian and Bicycle Bridge,
Austin, TX



Knickerbocker Bicycle Bridge, Eugene, OR



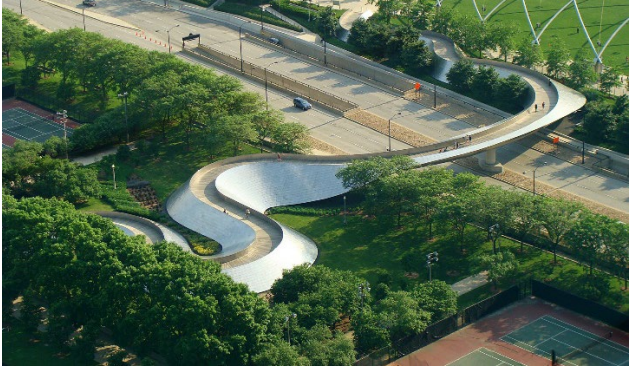
Don Burnett Bicycle-Pedestrian Bridge, Cupertino, CA



Autzen Footbridge, Eugene, OR



Nescio Bridge, Amsterdam, NL



BP Bridge, Chicago, IL



Pedro e Ines Bridge, Coimbra, Portugal



Infinity Bridge, Stockton, UK



Kurilpa Bridge, Brisbane, Australia



Te Rewa Rewa Bridge, New Plymouth, New Zealand



Big Four Bridge, Louisville, KY/Jeffersonville, IN



Mohawk Valley Gateway Overlook, Amsterdam, NY



Lille Langebro, Copenhagen, Denmark



Hovenring, North Brabant, Netherlands

B. Bicycling Growth in New York City

In recent years, New York City has experienced a sea change in the way that people ride bikes: new bike lanes and greenways encourage New Yorkers to use bikes to commute, get around their own neighborhoods for recreation, and for the deliveries of essential goods and services. Protected lanes and Citi Bike make cycling a comfortable and convenient transportation option.

- Since the adoption of Vision Zero in 2014, New York City has increased the miles of bicycle lanes by a quarter from 911 to 1,243, including 83 miles of protected lanes.
- NYCDOT has added an average of 62 miles of bicycle lanes per year for the last three years, the largest increase in the country. This includes an average of 20 additional miles of protected bicycle lanes each year, creating a network of 480 protected lane miles.
- In the last five years, NYCDOT has expanded and enhanced the on-street bike network by nearly 330 miles, including more than 82 protected lane miles, with 20 miles installed in 2018. NYC DOT installed over 55 miles of dedicated cycling space in 2018. On a typical day, there are over 490,000 cycling trips made in New York City.

With the expansion of the bicycle network on City streets, miles of new greenway paths in public parks, and the introduction of bike share, there have never been more people biking throughout New York City.

- Citywide Total and Frequent Cyclists
 - 26% growth in the number of New Yorkers who ride a bike several times a month, 2012-2017
 - 175,000 increase in the number of New Yorkers who bike at least once a year, 2012-2017
- Daily Cycling
 - 134% growth in daily cycling, 2007-2017
 - 55% growth in daily cycling, 2012-2017
 - 9% average annual growth rate of daily cycling, 2012-2017
- Peer Cities
 - Cycling to work has grown nearly twice as fast in NYC as in other major cities (55% growth in NYC compared to 27% growth in peer U.S. cities)
- East River Bridges
 - 6% average annual growth rate of cycling on the East River Bridges, 2008-2018
 - 19% growth in cycling on the Ed Koch Queensboro Bridge, 2013-2018—the fastest of the East River Bridges
- Midtown
 - 9% average annual growth rate of cycling at 50th Street, 2008-2018
- Uptown
 - 42% growth in cycling at 86th Street, 2015-2018
 - 7% growth in cycling at 86th Street, 2017-2018

Bike Share

Lyft's Citi Bike is the largest bike share system in the U.S. Citi Bike experienced an 8% growth in daily use between 2017-2018; 17.6 million Citi Bike trips were made in 2017. The on-going expansion of Citi Bike will double the current service area and triple the number of available bikes to 40,000 in the coming years. It is bringing docked bike share to the Bronx for the first time, with stations in the South Bronx along with expanded service in Manhattan from the current northern boundary at 130th Street to 155th Street. NYCDOT and Lyft plan to double its current footprint and triple its fleet by 2023. There have been more than 82 million Citi Bike trips since its launch. The system has a record of 85,000 trips per day, with an average of more than 70,000 trips on fair-weather business days.

New Jersey Joins the Bicycling Experience

Jersey City has a comprehensive bike share Citi Bike network. Hoboken is recognized as a Bronze Bicycle Friendly Community by the League of American Cyclists, making Hoboken the only municipality in New Jersey with the distinction of being recognized as both bike-friendly

and walk-friendly. Hoboken is making a concerted effort to better rationalize its valuable public space. The more people riding bikes in New Jersey, the more drivers will become familiar with them, so the choice to ride helps contribute to the balancing of the public use of streets.

C. Level of Service on East River Bridges

Levels of Service: 2018
 8 – 9 AM
 Highway Capacity Manual
 Off Street Bicycle Facilities (Chapter 23 page 23-15)

Bridge	Bike Share	Segment I	Segment II
Brooklyn	Now	C	C
	3%	E	F
	5%	F	F
Manhattan	Now	B	C
	3%	F	F
	5%	F	F
Williamsburg	Now	D	D
	3%	F	F
	5%	F	F
Ed Koch Queensboro	Now	B	C
	3%	E	F
	5%	F	F

* Although theoretically these bridges could accommodate some limited growth, current conditions exhibit considerable congestion and safety concerns because of mixed use by bicyclists and pedestrians.

D. Our Team

To accomplish this undertaking, we assembled an interdisciplinary team with experts in:

- Transportation Planning & Engineering;
- Bridge Design & Structural Engineering;
- Navigable Waterways Infrastructure; and
- Academia & Research.

Our team consists of:

NYU Tandon School of Engineering, IDC Innovation Hub

Made possible through the generous support of the IDC Foundation, the Institute of Design and Construction (IDC) Innovation Hub serves as a catalyst among technology, business, and academia to join forces and ignite imaginations while seeking solutions to the most pressing needs of the time. It provides a transformational framework to enable the construction industry to build faster, in a more cost-effective manner, and more creatively while maintaining stringent safety standards. The Innovation Hub works with its member firms to achieve construction excellence by driving change, asking probing questions, and posing “what if” scenarios. In addition, the Innovation Hub recently joined with INTERCEP, NYU’s International Center for Enterprise Preparedness, to form Project *NEXT*, a global initiative that brings stakeholders together to best adapt and re-imagine operations in response to current emerging threats – while also innovating for the better.

T.Y. Lin International

T.Y. Lin International is a global, multi-disciplinary engineering services firm recognized for solving some of the most significant infrastructure challenges of our age.

Ever mindful that its work has a significant impact on people's daily lives, as well as on the lives of future generations, the firm ensures project success and sustainability by strategically mobilizing the collective power and diverse expertise of its global organization; assembling multi-disciplinary teams; leveraging experience and state-of-the-art technical solutions; and sharing knowledge among regions.

This value-driven approach and unwavering commitment to excellence consistently results in award-winning projects, delivered on schedule and within budget, for satisfied clients. T.Y. Lin proudly continues to stand as one company, driven by one vision.

Sam Schwartz Engineering

This industry-leading team specializes in developing context-sensitive transportation solutions for urban mobility in New York, nationally, and globally. It identifies transportation and social impacts and provides creative, multi-modal plans that are grounded in technically rigorous analysis and industry-accepted design standards, working towards larger policy goals such as Vision Zero, economic development, social equity, environmental and climate resiliency, and design excellence. The firm also works to balance the needs and improve the quality-of-life of all users, including those using transit, walking, biking, driving, hailing rides, and moving freight.

Unlike large, multinational engineering firms, our planning, engineering, and design services are not “add-on” services but instead comprise Sam Schwartz’s core business practice. As a mid-sized firm, it is able to offer flexibility, responsiveness, and a tactical approach to solving transportation challenges which is made possible by its size and emphasis on collaboration – creating local and long-lasting relationships. The firm’s project experience reflects this strategic, integrated approach, spanning modes, disciplines, communications media, and technology. We are Urban Alchemists!