



BQE

in context

Report from AIANY BQE Task Force

July 2019

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Early in 2019, members of the American Institute of Architects New York Chapter's (AIANY) Planning & Urban Design and Transportation & Infrastructure committees formed an ad hoc task force to examine issues and opportunities related to various proposals by NYSDOT and NYCDOT to reconstruct the deteriorating Brooklyn-Queens Expressway (BQE) cantilever structure adjoining Brooklyn Heights. By reframing the response within the larger context of the neighborhood, city, and region, we sought to broaden the consideration of project scope and design possibilities for the BQE rebuilding process. Several alternative proposals were released during the spring and were presented to the local community, NYCDOT, and political leaders. Following this, Mayor de Blasio appointed an Expert Panel to advise NYCDOT on a revised design scope for the project.

In support of this expanded dialogue, the AIANY BQE Task Force has provided a forum for the design community to apply its expertise in urban design and transportation planning to help move the project forward. Using defined goals and criteria, the task force evaluated each proposal's issues and opportunities within a broader context in workshop format. Moreover, we encouraged workshop participants to examine design assumptions in the light of known and unknown future conditions. This report summarizes the results of these workshops, exploring a vision for the BQE that looks to the future of mobility in the City.

Introduction

New York, like many American cities, was founded long before the advent of the automobile. In the historic trajectory of global urbanism, reliance on cars is but a blip. And today, given the advent of relatively recent transportation-related developments, such as bike infrastructure and ride-share, we don't even know how much longer—or to what extent—we will be using private vehicles in our densest districts.

For some sense of how quickly things can change, look at our waterfronts, which were the original impetus for founding cities like New York as centers of trade and transfer of goods. Who would have imagined that the advent of something as simple as the shipping container in the 1950s, along with ships large enough to move containers economically and a global economy that allows for cheaper goods to be fabricated off-shore, would so quickly and thoroughly result in the abandonment of waterfront activity? With the loss of associated jobs, the flight of the middle-class from urban areas to the suburbs quickly followed, ravaging cities.

At the same time, the interstate highway system, developed first as a civil defense strategy in the 1950s, then as a means to connect suburbs with cities, resulted in major interchanges within urban areas. Designed for high-speed travel through both urban and rural environments, water's edge became the location of least resistance for locating highways. Today, these roadways impede connections between urban residential neighborhoods and their waterfronts, the very areas that now represent the major repositories of real estate available for public use and development.

At the same time, climate change and associated rising sea levels pose an existential challenge to coastal cities like New York. The role that livable cities have in this looming environmental crisis is critical: the mixed-use density of cities is the most efficient approach for patterns of settlement. Consolidating construction in cities preserves open space and farmland while minimizing the distances and costs of required infrastructure. Making urban areas more livable, with walkable neighborhoods, is a key sustainable strategy.

Today, cities are reinvesting in urban infrastructure that privileges the pedestrian experience. Across the country, cities are now demolishing elevated roadways that once divided districts and are replacing them with at-grade boulevards—and finding that they experience a renaissance in so-doing. When an elevated highway was damaged by an earthquake in Oakland, the city did not rebuild it, but removed it. The Embarcadero freeway

in San Francisco, a blighting influence that created a barrier between the city and its waterfront, has likewise been removed. In New York City, elevated portions of the West Side Highway have been removed, opening up the Hudson River Park to public uses. New York State has decided to take down the freeway bisecting the city of Syracuse and replace it with a landscaped boulevard.

Before undertaking any design, designers seek first to identify the goals and parameters. What purpose will it serve? How will it be used? What should the design-life be, and how can it be maintained? How will it work in its context?

This is the conundrum for the BQE: there are so many known unknowns. Given current NYC Congestion Pricing plans, drivers in the future may be less likely to use this portion of the BQE roadway that currently funnels cars on and off the East River bridges. New transit modes, from driverless cars to micro-transit, are being tested. Who could have predicted, just a few years ago, the burgeoning demand for safer bicycle infrastructure we are seeing today? The truth is, no one knows what even the near-future will hold for urban transportation systems. So we should be careful, with any proposal, to allow for a future that cannot be predicted.

Successful cities are in a continuous state of transformation. They recognize and leverage the valuable assets they have and continuously grow denser. A vision for a safer, more sustainable, resilient, and equitable city will take time and many phases to implement. Let us ensure that each step along the way provides meaningful benefits to the affected communities, that each investment is proportional to the benefits gained, and that each phase contributes towards building out the overall vision.

Background of BQE Project

The deterioration of the cantilevered section of the Brooklyn-Queens Expressway (BQE) below the Brooklyn Heights Promenade is a festering problem that has been too long ignored. Discussions with NYC and NYSDOT over the condition of the roadway structure, held as part of the due diligence analysis done for the Brooklyn Bridge Park Feasibility Study in 1986, revealed concern over its condition. These concerns were reinforced with increasing urgency every ten years or so until today, almost 35 years later, when they represent a full-blown crisis.

This part of the BQE was built by Robert Moses in the late 1940s and early 1950s, after abandoning his misguided call for the expressway to cut through the middle of the Brooklyn Heights neighborhood. The resolution to this controversy resulted in the creation of the Brooklyn Heights Promenade above the stacked and cantilevered expressway lanes, as well as the establishment of Brooklyn Heights as the city's first historic district.

NYCDOT's initial plan for reconstruction of the cantilever roadway structure, released in 2018, was to build a 'temporary' six-lane surface expressway in place of the Promenade in

order to facilitate replacement of the roadway below. The proposal ran into unanimous community opposition and was taken 'off the table' by the agency.

Since then, a number of alternative BQE proposals have been put forward by consultants working either with community organizations or independently as pro bono contributions, and by public officials and others suggesting regulatory and policy approaches. These schemes can be grouped into four broad categories:

Rebuild Beneath Promenade Schemes

NYCDOT / Original BHA / Marc Wouters Studios

Furman Street Tunnel Schemes

Mark Baker / BIG – Bjarke Ingels Group

Outboard / Off-Site Tunnel Schemes

Documented and examined by NYSDOT in 2016

Traffic Regulatory Schemes

Scott Stringer / RPA / Corey Johnson

A selection of BQE Schemes

1. - NYCDOT (2018)
2. - Mark Wouters
3. - Mark Wouters
4. - Mark Baker
5. - BIG
6. - NYSDOT (2016)
7. - Scott Stringer
8. - RPA

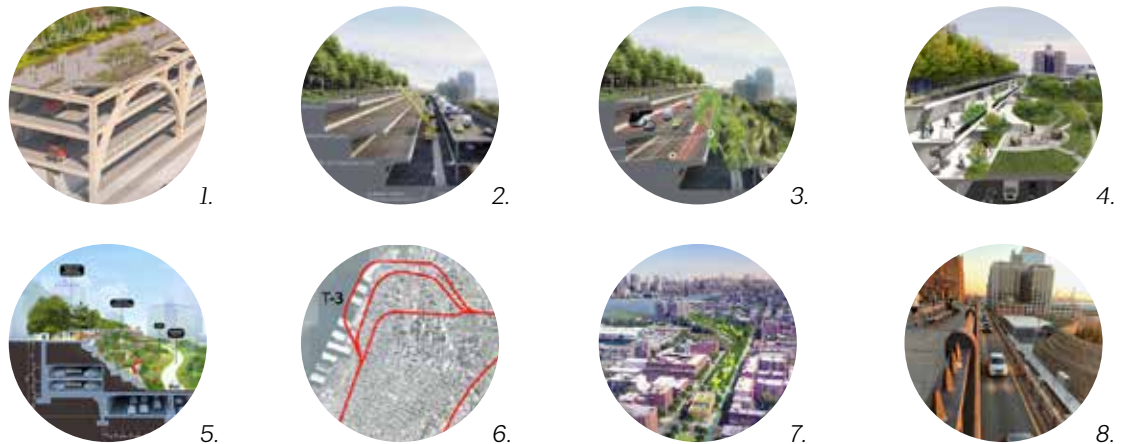


Image Credits: 1. New York City Department of Transportation, 2. & 3. Marc Wouters Studio, 4. Mark Baker, 5. Bjarke Ingels Groups, 6. New York State Department of Transportation, 7. New York City Comptroller Scott Stringer, 8. Regional Plan Association

In March 2019, Mayor de Blasio established a 17-member Expert Panel comprised of planning, construction and development leaders to evaluate the situation and make recommendations on the project scope as it goes forward into the fall. AIANY Executive Director Benjamin Prosky serves on the panel.

During this period, AIANY's BQE Task Force has used its forum to inform related explorations of issues and opportunities surrounding the BQE's role in the region's transportation network, as well as to provide input to the Mayor's Expert Panel for its deliberations. We used the approach of defining proposed goals and evaluation criteria, followed by interactive workshops—focusing on refining and expanding programmatic guidelines based on long-term considerations to build for the future of the city, rather than simply recreating the past.

AIANY Workshop I: BQE Planning Goals

Adapted from the Guiding Principles developed for the AIANY Transportation & Infrastructure Policy Framework (2017), broad planning goals were created for the BQE planning process itself. This framework was refined to reflect more specific, current issues related to the BQE during a workshop held on April 25, 2019.

Plan for Preservation and Growth

What should we try to preserve—Promenade, adjacent neighborhoods, park space?

Should we design for vehicular growth, residential growth, recreational growth (Brooklyn Bridge Park)?

How do we balance tradeoffs?

Plan for Jobs and Economic Development

The project will create jobs during design and construction. Should the project also serve as an engine for job growth upon completion?

Are there opportunities for new development created on land impacted by the reconfiguration of the roadway at access or egress points—i.e., economic development at Brooklyn and Manhattan Bridges, recreation or residential development at Carroll Gardens trench segment?

Plan Equitably

Balance the interests of local residents, local businesses, vehicular users of the current BQE, taxpayers, and future users of the resultant facilities, such as parks, by aiming for win-win solutions.

Balance the potential for increased access to the park from adjacent neighborhoods with controls or safeguards to mitigate noise, activity, pollution, etc, that can affect community stability and real estate values.

Plan Inclusively

Relevant stakeholders should be involved in a transparent but efficient planning process that is led by an agent that has their respect and confidence.

Plan for Quality

Infrastructure such as this should balance design goals for a potentially long material lifespan (100 years) with adaptive flexibility (20-year rolling renewal) based on outside changes, including technology (autonomous vehicles), land use (increased residential and business development), adjacent roadway use modifications (congestion pricing).

Guard against burdening the future with obsolete infrastructure.

Plan for Environmental Sustainability and Resiliency

The location of this facility should respond to storm surge impact and climate change; materials and practices used in construction should respond to best environmental practices.

Plan at All Scales in a Regional Context

The BQE is currently part of an interstate highway system. The project should encourage environmentally-friendly mobilities—bikeway, transit, pedestrian.

Examine traffic assumptions and program in context of regional origins and destinations.

Evaluate potential for achieving RPA Report thresholds for reducing number of vehicles.

To what degree will reducing number of lanes actually reduce total traffic or simply redistribute it to adjacent areas?

Need to maintain services to western Brooklyn, connections to Manhattan (bridges / tunnels), regional through movement to north and south.

Freight movement needs can be potentially modified by Cross-Harbor tunnel connecting to rail distribution and alternative maritime and rail networks.

Plan as a Continuing Process

The project should be continuously re-evaluated as to its success in achieving the above principles.

AIANY Workshop II: Evaluation of BQE Options

On June 10, 2019, a four-hour workshop was held with volunteer members of AIANY and associated design professionals (primarily AIANY Transportation & Infrastructure and Planning & Urban Design Committee members). The organization of the workshop, utilizing the planning goals developed in Workshop I to examine the BQE proposals and challenges from the perspective of surrounding neighborhoods and the region, proved to be an effective way to assess plans that have been developed for the BQE, as well as considerations that should be a part of any new plan. In addition to examining short- and long-term opportunities for improvement in each of three individual sub-areas along the BQE, a fourth category examined city-wide and regional issues that affect all three sub-areas.

Atlantic Av. conflicts, Cobble Hill / Carroll Garden trench

Brooklyn Heights, Promenade & BQE cantilever structure

DUMBO connections, Brooklyn and Manhattan Bridge ramps, Park Avenue viaduct

City-wide / Regional issues and opportunities

After a large-group introduction describing the workshop's problem statement, intent, current BQE proposals, program issues, and sub-area context, attendees were assigned to four sub-groups representing the three sub-areas described above plus city-wide and regional issues. Each sub-group applied the following five discussion criteria to the four broad categories of BQE proposed schemes. Their charge was twofold:

- **Use the criteria to examine the schemes**
- **Think more broadly 'outside the box' about long-term opportunities (and short-term possibilities) in each area**



Relevant Workshop II sub-areas

Design Criteria

1 Planning / Urban Design Implications

- Facilitate Better Connections between Areas
- Park / Waterfront Access – Pedestrian, Bicycle, Vehicular
- Preservation and Community Development Opportunities
- Other

2 Public Space / Parks Connections

- Waterfront Access – Pedestrian, Bicycle and Vehicular Movement
- Park Restoration / Expansion
- Views and Promenade Impact
- Other

3 Transportation Adaptability

- Temporary and Permanent Traffic Management / Construction Strategies
- Current and Future Capacity / Lane Requirements
- Local and Regional Truck / Freight Movement and Delivery
- Connections to Adjacent Areas and Bridges
- Connection to City-Wide and Regional Road Network
- Flexibility for Future Transportation Strategies / Technologies
- Other

4 Environmental / Sustainability / Resiliency

- Fossil Fuel Usage
- Air Quality (CO₂, Particulates)
- Noise
- Storm Protection
- Global Warming / Sea Level Rise
- Other

5 Feasibility / Risk Management

- Ability to Phase Construction with Minimal Disruption
- BQE Traffic During Construction
- Property Acquisitions / Easements
- Required Approvals
- Relative Costs versus Benefits
- Other

Workshop Takeaways

1. Project Parameters

NYCDOT's current BQE proposal, a response to the deterioration of the existing triple cantilever portion of the BQE, is to reconstruct the existing vehicular roadway in-kind, with self-imposed limitations for its reconstruction, generally within existing New York State right-of ways. These two parameters limit the potential to reimagine this vital infrastructure as part of a transportation and urban planning project that could leverage synergies to improve the defined scope boundaries and beyond.

2. Outside Influencers

The design should be informed by the potential to increase or reduce the current transportation requirements through transportation policy and technological change, including congestion pricing (can be assumed), autonomous vehicle use (timeline for implementation unknown), BQX implementation (unknown), additional ferry service (unknown), climate change and associated sea-level rise (can be assumed), and e-commerce, with associated improvements in goods transfer (can be assumed).

3. Project as an Influencer

Given the strategic location and scale of the project, the design can influence public policy and related projects. A design with fewer vehicular travel lanes than the current BQE, for example, would impact other future projects and policies due to a reduction of transportation capacity, which could be responded to in multiple ways, including decreased car usage or additional capacity at other transportation corridors. A design with improved pedestrian connectivity between Brooklyn Heights and the adjacent waterfront, through such strategies as a pedestrian connection from the Clark Street subway station to the Brooklyn Bridge Park waterfront area, would have multiple impacts on transportation and land-use. A solution with a BQX right-of-way, bicycle path, or ferry link could influence the use of more sustainable modes of transport than private vehicles.

4. Working Outside of the Box

Besides the project parameters in item (1), there are opportunities that can be exploited when other parameters are reduced or eliminated. The current condition of the BQE does not provide for signalization of vehicular traffic, forcing the use of ramp connections to adjacent streets that are disruptive and dangerous to pedestrians. The potential for an at-grade connection at Atlantic Avenue, for example, should be investigated within the contexts of vehicular flow, pedestrian connectivity, and improved urban environments. Note that there is precedent for interstate highways with signalized intersections.

Workshop Takeaways

5. Phasing and Staging

One of the greatest criticisms of the NYCDOT scheme relates to the phasing and staging of the project, which eliminates the Brooklyn Heights Promenade for a minimum of six years with a temporary roadway. Both adverse impacts to the surrounding urban environment, as well as temporary construction, should be reduced to a minimum. A solution that provides early public benefit, such as an at-grade connection at Atlantic Avenue, promotes the project as a beneficial influencer before construction is completed.

6. Lifespan of the Project - Flexibility of the Design

A project of this nature is typically designed for a 50-100 year lifespan. The existing triple cantilever was completed in 1954 (65 years ago). Many infrastructure projects are deemed out-of-date when they open due to technical and political changes not anticipated during their typically lengthy delivery schedule. The flexibility of the design can help respond to the expected and not expected changes previously mentioned.

7. The Current Schemes

There was general agreement within the workshop that the Furman Street concepts, as best represented by the BIG proposal, offered the most potential for responding to vehicular traffic, urban design, sustainability, resiliency, and flexibility concerns, while minimizing throw-away construction. A compelling physical solution with a complementing operational strategy, addressing the sometimes-conflicting stakeholder interests that have now been well-documented, can provide public benefit for generations to come.

8. Greenhouse Gas Emissions

Both New York City and New York State have recently begun aggressive efforts to combat greenhouse gas (GHG) emissions, doing our part to reverse climate change and sea level rise. Vehicle emissions make up 33% of New York State's carbon footprint. Championing non-polluting mobility along the Brooklyn and Queens waterfront would be an excellent place to address this critical challenge.

Appendix

AIANY Workshop II Summaries

Attendees at the June 10, 2019 workshop were divided into four sub-groups to allow for a more detailed exploration of the issues and opportunities for the BQE from the perspective of the surrounding neighborhoods and the region. The following reports summarize the discussions within these sub-groups.

Sub-group A | Atlantic Avenue/Carroll Gardens/Cobble Hill

Area

Atlantic Ave. Connection and Carroll Gardens / Cobble Hill Trench

Participants

Benjamin Baxt, Braham Berg, Honey Berk, Susannah Drake, Jessica Morris, Brian Pape, Yasmine Pessar, Theo Pollack, Rob Eisenstat

Summary

The group engaged in open discussion about the assigned area, prioritizing local knowledge to identify opportunities and synergies that would emerge given the deployment of various schemes.

Matrix assessment

Rebuild Beneath Promenade

We did not identify any opportunities or synergies relative to this scheme. Elevation change is the primary negative factor when considering the connection to Atlantic Ave. The identification of elevation as a driver in assessing the sub-group A connection spurred further discussion about opportunities around Atlantic Ave. for trench area neighborhoods such as Carroll Gardens, Columbia Street, and Cobble Hill.

Furman Street Tunnel Schemes

There are many opportunities across the matrix criteria that support the BQE Planning Goals when considering sub-group area A relative to the Furman Street Tunnel Schemes. These opportunities primarily result from the combination of changes made to roadway elevation as it approaches the Atlantic Ave. connection from the north, traffic management strategies compatible with the range of Furman Street schemes, and opportunities around the existing trenched area.

Outboard / Off-Site Tunnel Schemes

The sub-group did not discuss the specific opportunities of these schemes. If considered, the opportunities are an amplification of the localized urban design and neighborhood-focused benefits resulting from elevation and traffic management strategies identified in the Furman Street schemes.

Traffic Management Strategies

As part of the sub-group's assessment of the implications of the Furman Street schemes relative to the Atlantic Ave. connection and Carroll Gardens Trench, a number of essential traffic management strategies emerged and should be considered.

- Evaluate necessity of on / off ramps at Atlantic Avenue connection
- Declassification – for some length of the roadway
- Traffic light – introduce signalized T-intersection at Atlantic Avenue
- Support for light rail spur

Sub-group A | Atlantic Avenue/Carroll Gardens/Cobble Hill

Opportunities Summary

The Furman Street schemes offer many opportunities to better connect the thriving Cobble Hill and Carroll Gardens neighborhoods to Columbia Street and the adjacent waterfront districts, extending as far south as Red Hook. These additional considerations would address the reconstruction in a forward-thinking, integrated, and progressive way, potentially increasing the value of public land and private assets throughout the area. As a general strategy, bringing the roadway down to grade at the cantilevered section envisions a more integrated connection at Atlantic Ave. The opportunity to shift the character of the roadway, possibly gradually throughout the duration of the construction project, would ultimately and fundamentally change the roadway to be more connected to urban streets, enabling a reintegration of communities with the waterfront.

Considering an at-grade or below-grade solution with surface road for the BQE reconstruction offers a flexible set of outcomes. Integrating an Atlantic Ave. connection redesign as a phase option increases the transportation adaptability of the capital investment. An assessment of the closing of the on / off ramps at Atlantic Ave. would begin to identify immediate public space benefits that this project is positioned to offer its surrounding communities. The Furman schemes enable consideration of various traffic management strategies in the long term that would integrate well as a flexible set of solutions, increasing the local opportunities for bringing the roadway down to neighborhood scale, while allowing the transport function to be adequately served as industries and scenarios adapt in coming decades. The necessary integration of resilience strategies when considering “going low” near the water’s edge should be considered as both a cost and a potential opportunity.

The Atlantic Ave. connection and potential effects of redesign on surrounding areas and neighborhoods has not been adequately studied but should be considered during short- and long-term BQE reconstruction integration strategies.



BQE Connection at Atlantic Avenue.

Consideration of the boundaries of the BQE scope and initiating a study of the effects of the Furman Street Scheme on the Atlantic Ave. connection could inform decision-making and reconsideration of overall impact for goals of the investment. For instance, decking over segments of the trench area would provide opportunities to increase public open space and integrate across the existing roadway. An area of study worth noting is West St. / 9A in Manhattan from the Battery Tunnel to 59th Street. While not perfect for pedestrian crossing and waterfront access, this example carries many parallels regarding infrastructure and quality of life issues, including better connectivity to a waterfront recreational area, though with the downside of public health concerns related to near-road air quality. West St. / 9A carries commercial traffic but is divided with stoplights to control speed and allow for safe crossing. Vision Zero is a necessary frame of reference when considering the potential of integrating people, public space, and transportation networks more closely. This should be considered an opportunity, not a deterrent.

Sub-group A | Atlantic Avenue/Carroll Gardens/Cobble Hill

Detailed Discussion Outline: Furman Tunnel Schemes

Criteria | Public Space / Parks



Connecting to neighborhoods.

Trench not a bad starting place, if treated.

Mitigating trench.

Trench opportunities are a piggyback on triple cantilever work.

Trench opportunities independent of cantilever fix.

Segmented treatment of trench would create open space opportunities with coverage short of “tunnel” definition.

Street section adjustment (along BQE path) and along Atlantic Avenue.

Trench-Tunnel symbiosis.

Effects of Furman Tunnel on Atlantic.

Effects of **programmatic** use of neighborhood (waterfront) TBD.

Opportunity for larger **urban design vision**.

Resilience issues (flooding / stormwater).

Eliminating on / off ramps at Atlantic reunites the bifurcated van Vorhees Park, opens the opportunity for a significant urban place at the foot of Atlantic, a major arrival point at BBP, BQX, ferry terminal, the Brooklyn Greenway, and a bus turnaround.



No comprehensive planning.

Disconnection on either side of the roadway (neighborhoods to waterfront / industry / recreation).

Lack of trench evaluation / study.

Programmatic unknowns (neighborhood).

Gap in leadership or a **comprehensive plan**.

Resilience issues (flooding / stormwater).

Sub-group A | Atlantic Avenue/Carroll Gardens/Cobble Hill

Detailed Discussion Outline: Furman Tunnel Schemes

Criteria | Planning / Urban Design



Connecting to neighborhoods.

Transitions.

Trench not a bad starting place, if treated.

Mitigating trench.

Trench opportunities are a piggyback on triple cantilever work.

Trench opportunities independent of cantilever fix.

Segmented treatment of trench would create open space opportunities with coverage short of “tunnel” definition.

Street section adjustment (along BQE path) and along Atlantic Avenue.

Trench-Tunnel symbiosis.

Effects of Furman Tunnel on Atlantic.

Effects of **programmatic** use of neighborhood (water-front) TBD.

Opportunity for larger **urban design vision**.

Opportunity to adjust the urban strategy (an effect of need to reconstruct).

Facilitate better connections.

Eliminating on / off ramps at Atlantic reunites the bifurcated van Vorhees Park, opens the opportunity for a significant urban place at the foot of Atlantic, a major arrival point at BBP, BQX, ferry terminal, the Brooklyn Greenway, and a bus turnaround.



No comprehensive planning.

Lack of Trench evaluation / study.

Programmatic unknowns (neighborhood).

Gap in leadership or a **comprehensive plan**.

Resilience issues (flooding / stormwater).

Sub-group A | Atlantic Avenue/Carroll Gardens/Cobble Hill

Detailed Discussion Outline: Furman Tunnel Schemes

Criteria | Transportation Adaptability



Street section adjustment (along BQE path) and along Atlantic Avenue.

Trench-Tunnel symbiosis.

Effects of Furman Tunnel on Atlantic.

Effects of **programmatic** use of neighborhood (waterfront) TBD.

Opportunity to adjust the urban strategy (an effect of need to reconstruct).

Facilitate better connections.

Eliminating on / off ramps at Atlantic reunites the bifurcated van Vorhees Park, opens the opportunity for a significant urban place at the foot of Atlantic, a major arrival point at BBP, BQX, ferry terminal, the Brooklyn Greenway, and a bus turnaround.



No comprehensive planning.

Radii of Atlantic pinch point.

Comprehensive Downtown Brooklyn Plan / Traffic Management plan.

Gap in leadership or a **comprehensive plan**.

Path of least resistance is the **ownership** model (streamlined), which seeks to **maintain**, not necessarily open up, opportunities.

Criteria | Sustainability / Environmental



Connecting to neighborhoods.

Mitigating trench.

Trench opportunities are a piggyback on triple cantilever work.

Trench opportunities independent of cantilever fix.

Segmented treatment of trench would create open space opportunities with coverage short of “tunnel” definition.

Trench-Tunnel symbiosis.

Effects of Furman Tunnel on Atlantic.

Effects of **programmatic** use of neighborhood (waterfront) TBD.



No comprehensive planning.

Disconnection on either side of the roadway (neighborhoods to waterfront / industry / recreation).

Lack of Trench evaluation/study.

Gap in leadership or a **comprehensive plan**.

Resilience issues (flooding/stormwater).

Sub-group A | Atlantic Avenue/Carroll Gardens/Cobble Hill

Detailed Discussion Outline: Furman Tunnel Schemes

Criteria | Feasibility / Risk Management



Transitions.

Street section adjustment along BQE path & along Atlantic Ave.
Trench-Tunnel symbiosis.
Facilitate better connections.



No comprehensive planning.

Path of least resistance is the **ownership** model (streamlined), which seeks to **maintain**, not necessarily open up, opportunities.

Resilience issues (flooding / stormwater).

Criteria | Unknowns

- No comprehensive planning.
- Future unknowns.
- /+ Future of distribution (trend projection).
- /+ Lighter vehicles.
- /+ Lower volume of vehicles.
- /+ What is the boundary of study for the fix? What should it be?

Given a wish list:

- **What are the impacts of fulfillment?**
- **In what timeframe?**
- **For what outcomes?**

Sub-group B | Brooklyn Heights/Promenade

1. Summarize the results of the matrix comparison of schemes in the way that makes sense for your sub-group. A description of the sub-group's approach to the assignment would be useful. (OK if the matrix approach was not used).

The cantilever section sub-group focused on transportation adaptability, public space and public connections, park program, and economic development opportunities and concerns. We did not go through an option-by-option assessment, but looked at the impact of these issues on BQE development and then discussed concerns and generated ideas for BQE using the proposals as a reference.

2. Summarize other elements, opportunities, limitations, etc. discussed that the sub-group considered to be important in assessing the future of the BQE project. This could include elements directly related to the project, off-site improvements, relationship to larger context and/or development policies, etc.

In terms of limitations posed by the BQE, the cantilever group saw the lack of access between Brooklyn Heights and Brooklyn Bridge Park (BBP) as a major limitation caused by the existing BQE. The group also felt strongly that the notion that trucks carrying hazardous materials or fuel oil not be able to use the BQE if there was a tunnel component should in no way be a hindrance to the development of tunnel options. The group went so far as to postulate that any non-tunnel allowable freight be shipped by alternative freight means.

In terms of limitations presented by alternatives, the group felt that there could be opportunity to bring rail freight along the waterfront from Sunset Park, extending through the park and that, if needed, trucks could be precluded from using the BQE. The group felt strongly that any BQE alternative scheme should focus on intermodal connections. The theme of using water as infrastructure really resonated with the group and the ability to connect ferries from Manhattan, or other points, with Brooklyn was seen as a viable way to reduce the need for automobile access to BBP and on the BQE. The group was very interested in schemes that could return the BQX to the waterfront and access the BBP. The group proposed a loop for the BQX that included both downtown Brooklyn access and waterfront access. The group also saw the Atlantic Avenue tunnel as a potential source of connection, bringing an LRT system from inland and out along the waterfront. Suggestions were also made to bring LRT along Atlantic Avenue if the tunnel option was not viable.

The group also emphasized that multiple modes of transportation should be brought to the site under any scheme and that provisions should be made to improve pedestrian and bicycle connections. The group suggested the creation of a pedestrian bridge between Manhattan and Brooklyn as a way of increasing pedestrian usage of the BBP site. In terms of connections between Brooklyn Heights and BBP, these need to be carefully considered, with a hierarchy of connections; a few carefully placed connections may be preferable.

The pinch point at Joralemon was brought up as a major challenge for any alternative BQE scheme and that led to a discussion about access to the park and how limited access is actually a challenge for the Brooklyn Heights community as it focuses traffic onto Joralemon. The group felt that access from Joralemon to a surface street above a buried BQE might not be desirable. It was noted that a surface road where Hicks Street currently stands does not necessarily need to maintain a vehicular connection to Joralemon.

3. In discussing these opportunities (such as eliminating access ramps or bridge connections, or providing surface highways, subway connections, trolley loops, freight movement alternatives, etc), to what extent are these opportunities compatible with currently proposed schemes?

The group talked about creating additional program on the cantilever section of the BQE (if it no longer is used for vehicular conveyance) and about access between Brooklyn Heights and BBP. Several suggestions for the reuse of the cantilever for adaptive reuse were considered; the group was not necessarily opposed (although some were concerned) with a strategy to put new residential, commercial, or community amenity on the site, with the preferred location placing new program at the height of the first cantilever against the Brooklyn Heights wall, which would line up with the new dedicated street, bike path, or BQX system proposed in one of the plans. Adding new development, while not forefronted in any schemes, could be integrated into schemes that reposition the BQE off of the cantilever into a recessed tunnel underneath a raised BBP.

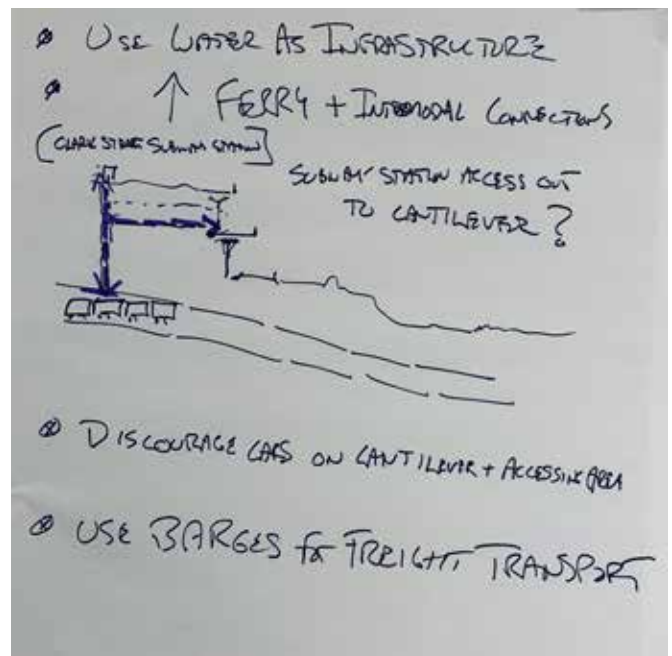
Sub-group B | Brooklyn Heights/Promenade

4. As part of a longer term strategy, could any of the proposed schemes be adapted to phase in such potential opportunities once the basic approach is implemented?

Re-programming of the cantilever could certainly be phased in as a future component of park development as part of a longer-term strategy for filling in the space between the current BBP and Brooklyn Heights and activating public space that is no longer encumbered by the BQE.

5. Finally, based on your group's discussion, do you see any short-term projects in your sub-area that might be accomplished in advance of (or independent of) actual BQE restoration?

Although not a short-term solution, the group did consider the opportunity of making a direct pedestrian / transit connection from the Clark Street Station of the 2 / 3 line, which comes out at Clark and Henry (served from the lobby of the Hotel St. George, which is closed). The entrance at street level is roughly 1,000 feet east of the park and also more than 100 feet deep. It is on the long-term closure list of the MTA because it is not currently ADA accessible (elevators run between mezzanine level and street level). In addition, the three elevators that service the station need replacement. The thought was to propose a new station exit (instead of coming up at Clark) that would access the park directly at either the NB or SB cantilever levels. Could be served by shorter elevators and passageways and / or by escalators and passageways and would be an exciting new portal gateway connection into the hillside of the park, creating that elusive subway connection without the expense of installing an entirely new station, with the added benefit of remodeling and updating a station that is in need of ADA upgrades and a facelift.



Connection from Clark Street Subway Station to Brooklyn Bridge Park.

Sub-group C | Dumbo/Bridge Ramps

What if the BQE and its ramps did not exist through this part of town?

How would the streets be re-stitched?

What is the potential for the new blocks?

Sub-group C examined the area immediately to the north of the promenade, where the BQE weaves through the Brooklyn Bridge and Manhattan Bridge supports, skirts the DUMBO neighborhood, slides by the Farragut and Ingersoll Houses, and then tops Park Avenue as a viaduct. Our challenge was to unlock the economic development and housing potential for the blocks and parks currently used for on-ramps and off-ramps to the highway.

The sub-group referenced:

- An aerial map locating 14 blocks that could be available for buildings and parks, should the BQE and its ramps be removed. Suffice it to say, the economic development potential is huge.
- The Park Avenue Pedestrian Safety Plan, a proposal to promote pedestrian safety and calm traffic on Park Avenue between Navy and Steuben Streets in the Wallabout area of Fort Greene and Clinton Hill, which was published by Architecture for Humanity and the Myrtle Avenue Revitalization Project Local Development Corporation in 2012. Some of the changes have been embraced by DOT.¹
- The Brooklyn Strand Urban Design Action Plan, which was produced by WXY for the Downtown Brooklyn Partnership in 2016. It is a “community-driven effort to connect Downtown Brooklyn to its waterfront through a re-imagined series of parks and plazas that would create a grand gateway into Brooklyn”. This document showed the pre-BQE urban grid, noted the ambient noise levels associated with the highway, and identified a number of parks and parcels that could be enhanced.²
- Two renderings showing the BQE passing over the Brooklyn Bridge walkway and obstructing the view of the bridge itself and the skyline beyond.³
- A number of parks and playgrounds (Trinity Park, Bridge Park, Clumber Corner, Golconda Playground) have been co-opted by the BQE and its ramps.
- Trucks make up a mere nine percent of the volume on the BQE (see RPA Report). One often hears that the BQE is a vital freight corridor and to remove it would cause truck-aggodon on local streets. At 9%, this fear appears overblown.
- There are fewer people driving on the BQE than walking through Grand Central Terminal.
- The BQE is designated Interstate-278 (I-278). As such, it is supposed to be a loop road connected to I-78 (the road from the Holland Tunnel to Harrisburg PA), but it does not really loop around NYC. It allows drivers to exit the New Jersey Turnpike in Elizabeth and drive through Staten Island, Brooklyn, and Queens to the Bronx. Is this a travel pattern we really want to facilitate?
- Placing the BQE in a tunnel is immediately attractive, not the least because it shunts the traffic elsewhere and provides a tabula rasa for urban design; however, the (mostly negative) externalities at the tunnel openings would have to be mitigated. And there is question of cost.
- The possibility of incorporating the proposed BQX transit line into a reimagined BQE.⁴

1. <https://myrtleavenue.org/dot-proposes-safety-changes-park-avenue/>

2. <http://downtownbrooklyn.com/about/publications/brooklyn-strand-urban-design-action-plan>

3. <https://bklyner.com/bqe-fix-would-build-overpass-above-brooklyn-bridge/>

4. http://www.bqx.nyc/wp-content/uploads/2016/05/BQX_Map_Final.png

Sub-group C | Dumbo/Bridge Ramps

- A sketch showing a series of boulevards in lieu of the BQE and its ramps:

The approach to Brooklyn Bridge culminating in a grand circular plaza at the junction of Adams and Sands Streets. The plaza would have a direct connection to the High Street Station on the A line.

Sands Street culminating in a grand entrance to the Brooklyn Navy Yard.

Park Avenue connecting to Tillary Street.

A network of greenways along the boulevards and protected bicycle lanes on other streets.

Reclaimed parks and playgrounds—minus noise and exhaust.

Eminently safer streets minus the BQE traffic.



Sketch showing new boulevards, parks, plaza, subway connections, and 14 development parcels if the BQE and its ramps were removed.

Ultimately, the sub-group settled on these items:

1. Rebuilding the BQE is not merely an infrastructure issue. It is not akin to rebuilding aging infrastructure, like repairing a leaky water main. It presents the opportunity, not unlike when part of the West Side Highway collapsed, to rethink this transportation linkage for the next 50 years.
2. The BQE represents a mobility system (urban highways) that precipitated and facilitated late-20th-century auto-centric transportation planning, with often unacknowledged negative health, social equity, safety, and racial impacts. If not now, then when do we correct that wrong?
3. Advanced, progressive transportation planning considers highways as a single element in a multi-modal corridor. Accordingly, there should be facilities for various modes—driving, transit, cycling—in any rebuild of the BQE.
4. What should AIANY advocate for?
What design solutions should AIANY promote?
What “principles” have been established in defining the task force’s work?

Sub-group D | Larger City/Region/BQE Corridor Context

Introduction

Discussion within the sub-group was divided between explorations of the relationship of mobility and land use along the Brooklyn waterfront within a city-wide / regional context and analyses of specific aspects of the various reconstruction schemes. Evaluation criteria developed for the workshop were selectively used where applicable to the schemes. An overall numerical rating was deemed unsuitable so a + / - / ? rating system was used to highlight the distinguishing characteristics of the schemes.

Evaluation of Schemes

Rebuild Beneath Promenade Schemes (NYCDOT, Marc Wouters Studio)

- Retains poor connectivity between Brooklyn Heights and BBP
- Reconstructed promenade out-of-scale
- Promenade retains “exclusive” status to adjacent Brooklyn Heights neighborhood
- In NYCDOT’s scheme, temporary roadway imposes severe impact on BH neighborhood
- + In Wouters’ scheme, reuse of temporary roadway allows for future park expansion
- Road reconstruction assumes existing traffic design criteria / scope
- Does not address environmental / sustainability / resiliency issues
- Very disruptive during construction
- + NYCDOT’s scheme stays within existing R.O.W. – easier approvals and inter-agency coordination
- Unnecessary costs of temporary roadway

Commentary

These schemes accept the basic premise of the Moses-era roadway design for the replacement—including the basic configuration and current traffic assumptions. By staying within these parameters, the risk of delays in design and construction can appear to be reduced, though the impacts and cost of a temporary roadway during construction would be severe. By excluding broader community, land-use, and transportation factors, the project has stalled. The schemes were considered mostly negative for designing for transportation functions in isolation from a broader planning / urban design perspective.

Sub-group D | Larger City/Region/BQE Corridor Context

Furman Street Tunnel Schemes (Mark Baker, BIG)

- + Potential for improved connectivity between Brooklyn Heights and BBP
- + Access to Brooklyn Heights promenade improved
- + Potential to create public amenity in existing cantilever roadway structures
- + No temporary roadway needed
- Road reconstruction assumes existing traffic design criteria / scope
- + On-grade tunnel provides opportunity to expand green planting, reduce noise
- ? On-grade tunnel possibly susceptible to sea-level rise and storm surge impacts
- Expanded roadway R.O.W. needed – more complex approvals and inter-agency coordination

Commentary

These schemes reimagine how a new roadway can be constructed in the same general alignment as the existing roadway, but enclosed so that other uses can occur over the structure. This broader planning approach provides an opportunity to better integrate the roadway within the adjacent neighborhoods. By allowing the existing cantilever roadway to remain in use during construction, complications of a temporary roadway would be avoided. However, current traffic assumptions are unchallenged, thus missing the opportunity to anticipate the nature of future mobility networks. The sub-group debated the best use of the reclaimed public space within the existing cantilever structure over the reconstructed roadway. Some argued that the highest use—i.e., waterfront residential development—would generate revenue that could be used to support BBP. Counter-arguments emphasized the principle that public space should be used for public benefit, such as expanded park land and / or an educational facility related to waterfront uses—marine, environmental, or industrial innovation. The principle of equity favors maintaining public access through open space and public community / educational uses, rather than private development.

Sub-group D | Larger City/Region/BQE Corridor Context

Outboard / Off-Site Tunnel Schemes (NYSDOT)

- + Redevelopment opportunities for former BQE segment along waterfront
- + Potential for integration of adjacent neighborhoods with waterfront public areas
- Road reconstruction assumes existing traffic design criteria / scope
- Noise reduced along former waterfront BQE segment and contained at a new tunnel
- Future tunnel adaptability / flexibility very low
- High cost for on-going tunnel maintenance and repair
- Very long construction period due to tunnel boring methodology
- Property acquisition at tunnel ramps and ventilation structures very high

Commentary

A number of variations of a tunnel scheme have been proposed. Those that redirect truck and auto traffic away from the existing BQE waterfront corridor create tremendous opportunities to reclaim public space along the existing corridor for other uses. However, those that maintain auto-only traffic on the BQE waterfront corridor do not have that advantage. Any tunnel scheme poses high risks due to the need to acquire property for tunnel entrances and ventilation structures, as well as very high costs and time for tunnel boring construction. Once built, the structures are inflexible for future alteration and costly to maintain. The sub-group considered these schemes unfavorably.

Sub-group D | Larger City/Region/BQE Corridor Context

Trucks-Only Scheme (NYC Comptroller Scott Stringer)

- Retains poor connectivity between Brooklyn Heights and BBP
- Promenade retains “exclusive” status to adjacent Brooklyn Heights neighborhood
- + Potential to create linear public park in existing cantilever roadway structures
- + Covering over Cobble Hill / Carroll Gardens open-cut trench creates tremendous opportunities to reclaim public space
- Unrealistically assumes existing roadway can be sufficiently repaired without reconstruction
- Environmental / sustainability / resiliency issues not addressed
- Ending southbound BQE traffic in Dumbo could have severe impacts on neighborhood
- Traffic analysis justifying elimination of cars at BQE waterfront segment not addressed

Commentary

This scheme appears to be mostly aspirational by relying on previous proposals to cover the Cobble Hill / Carroll Gardens open-cut trench that would connect to a new linear park along the existing BQE cantilever structure. Truck-only traffic would be retained on two at-grade lanes, with the auto traffic dispersed to other routes or diverted to alternative modes. Absent a thorough analysis of how auto traffic would redistribute throughout the adjacent neighborhoods and region, the scheme was not considered to be viable.

Sub-group D | Larger City/Region/BQE Corridor Context

Related Planning Criteria

Traffic Management Strategies

- Encourage mode shift to most efficient systems (passenger and freight)
- Invest in public transit options serving unmet demands
- Develop infrastructure for underutilized rail and marine freight networks
- Reduce roadway lanes where better alternatives exist or can be created
- Implement 'supercharged' Manhattan congestion pricing—dynamic to smooth peak use
- Implement broad array of traffic management strategies to maximize efficiency of roadways

Commentary

Considering transportation networks within the urbanized NYC region to be a limited resource, rebalancing of modes and developing underutilized networks can provide better, more efficient service. RPA's "Reimagining the BQE" report illustrated that transportation policies that reduce demand also reduce congestion and increase capacity of the system through more efficient usage. The group endorsed RPA's analysis of NYC's recently enacted congestion pricing program, indicating that the number of travel lanes in the BQE reconstruction segment could be reduced from six to four lanes in both directions. Implementation of two-way tolls on the Verrazano Narrows Bridge and other management policies would also reduce traffic on the BQE. The sub-group supported measures to shift freight traffic to rail and marine infrastructure where feasible. Improvements in public transit networks provide options to shift from auto dependency. NYCDOT should take these strategies into account when conducting traffic planning studies for any BQE option.

Sub-group D | Larger City/Region/BQE Corridor Context

Related Planning Criteria

Future Mobility

- Align forward-looking land-use planning with forward-looking transportation planning
- Plan for hierarchical transportation networks: long haul→distribution→local delivery
- Anticipate cultural and technological changes that will transform mobility needs such as automation and e-commerce
- Intelligent data sharing
- Cut fossil fuel usage and carbon emissions in the transportation sector.

Commentary

Transportation policies need to support social, land use, and environmental goals in a synergistic way when applied to planning major transportation projects. Discussion in the sub-group ranged from the merits of macro—replacing the BQE and FDR roadways entirely with a new super-tunnel for vehicles below the East River—to localized micro networks providing more integrated mobility throughout the city. Societal trends such as automation, e-commerce, and an emerging service economy are affecting transportation needs in fundamental ways that have not been reflected in transportation planning. Decentralizing Manhattan-centric development to neighborhood nodes of higher-density housing, jobs, and goods distribution with improved public transit can more efficiently use limited land and environmental resources.

Sub-group D | Larger City/Region/BQE Corridor Context

Wrap-up

Other topics discussed by the sub-group

Industrial Districts Along the Brooklyn / Queens Waterfront

Noting the city's goals to retain and expand waterfront industrial zones for existing maritime uses, traditional manufacturing businesses, and new creative incubators, the sub-group saw a need for a network of roadways and alternative transportation modes to serve these businesses. A distribution road network is necessary for the businesses to survive. It was also noted that localized delivery facilities taking advantage of the concentration of freight networks are developing in certain of these industrial zones, including Red Hook and Sunset Park.

BQX Streetcar

Without weighing in on the merits of the proposed BQX streetcar system itself, the sub-group felt that the current proposed route through downtown Brooklyn rather than the initial route along Furman Street makes sense, since it would serve more residents and job centers and would create more connections to the subway system. BQX stops in Dumbo and Atlantic Avenue / Columbia Street would provide good access to Dumbo and BB Park.

BQE Configuration

Design assumptions about the future of the BQE need to be challenged with a forward-thinking approach rather than relying on current or outdated conditions. RPA's report demonstrated how traffic management strategies can reduce and level demand, thus downsizing the number of travel lanes needed. Development of underutilized regional transportation networks can shift passenger and freight mobility needs to other more efficient modes. Challenging the nature of the BQE itself can reduce impacts of high-volume roadways. Declassifying the BQE from an interstate highway to a local feeder could eliminate the BQE design scope requirement for additional service lanes, which effectively adds the equivalent of two travel lanes to the roadway.

BQE Report Credits

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