



Corridor Vision Safety, Equity and Resiliency

Eric Adams, Mayor | Ydanis Rodriguez, Commissioner



Shaping a Vision BQE Central Workshop #2

December 15, 2022



Interpretation is Available

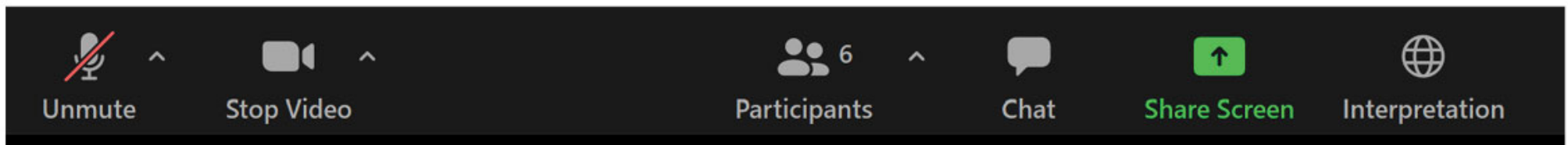
Select the globe icon at the bottom of your screen for translation services.

تامدخل تشاشلا نم يلفسلا عزجلا يف ةيضرألا ةركلا ىلع طغضلاب مق
ةمجرتلا

选择屏幕底部的地球图标获取翻译服务。

選擇屏幕底部的地球圖標獲取翻譯服務。

Seleccione el ícono con el globo terráqueo en la parte inferior de su pantalla para servicios de traducción.



Agenda



1. Process Update



2. What Did We Hear from the Community?



3. Design Concept Considerations (5 mins)



4. Design Concepts (15 mins)



5. Q&A (20 mins)



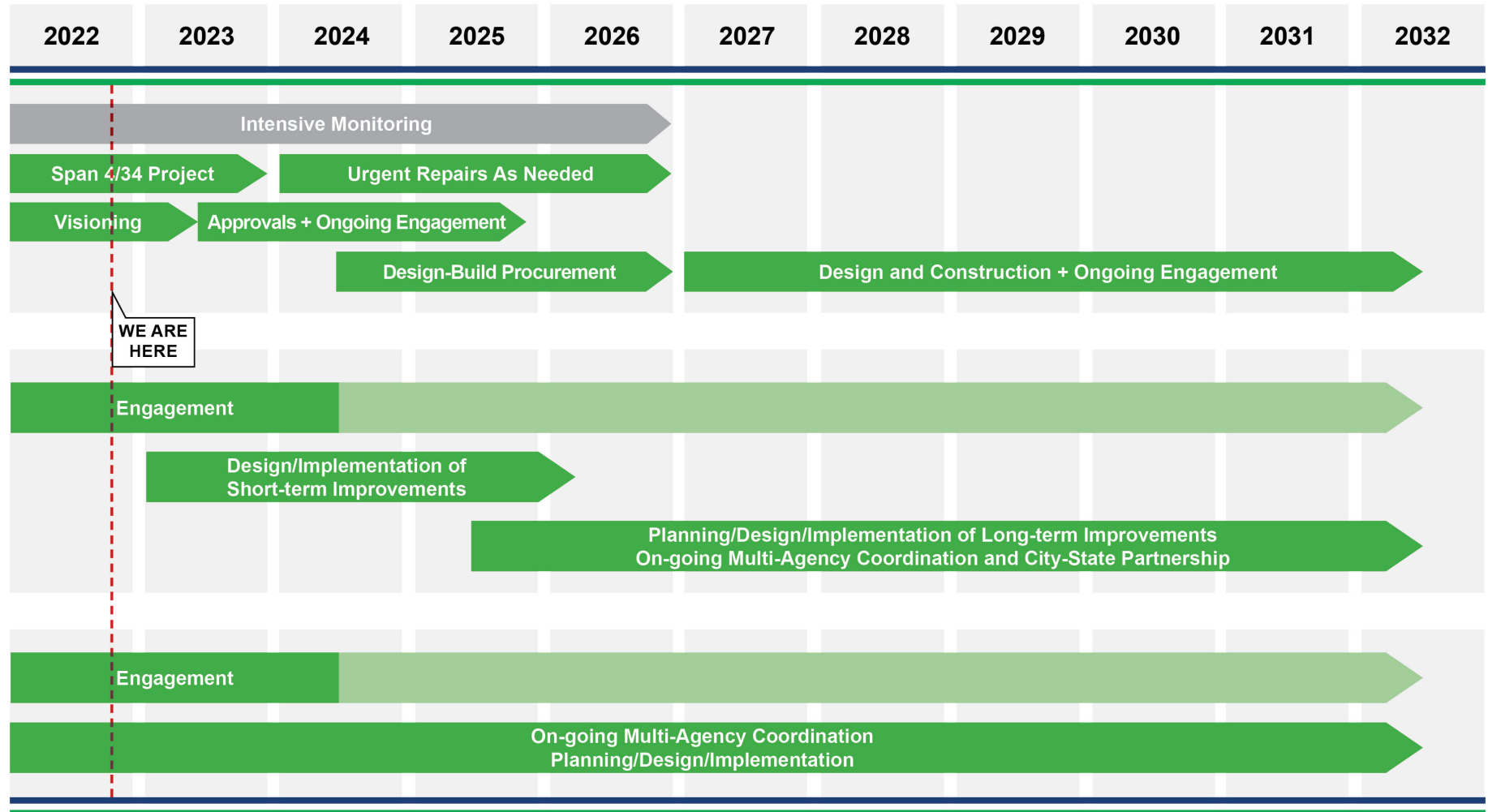
6. Breakout Rooms (35 mins)

Process Update

1

Project Timeline

BQE Corridor Vision Anticipated Timeline

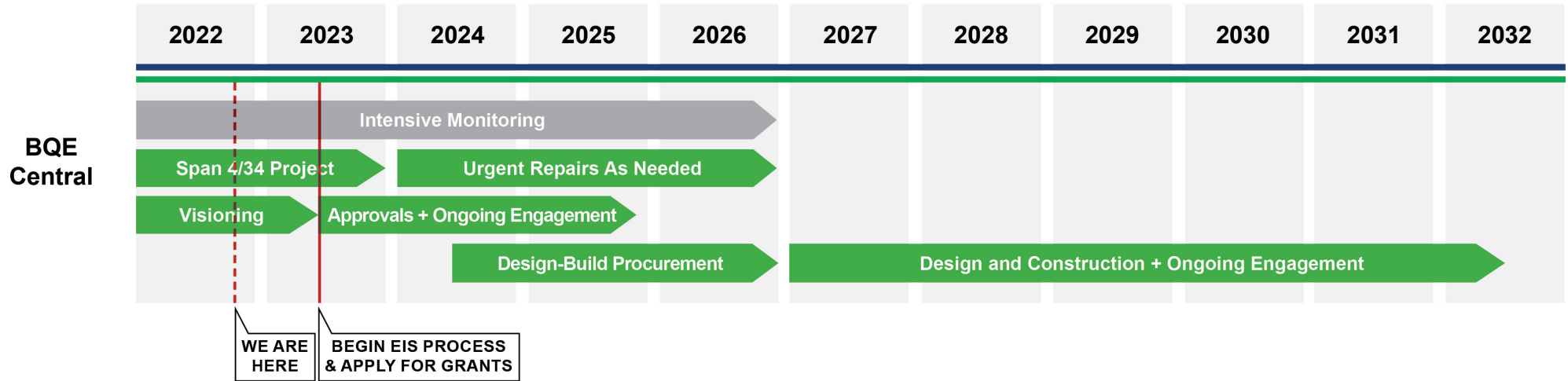


WE ARE
HERE



Project Timeline

BQE Central: Previous Events



BQE Central Workshop 1

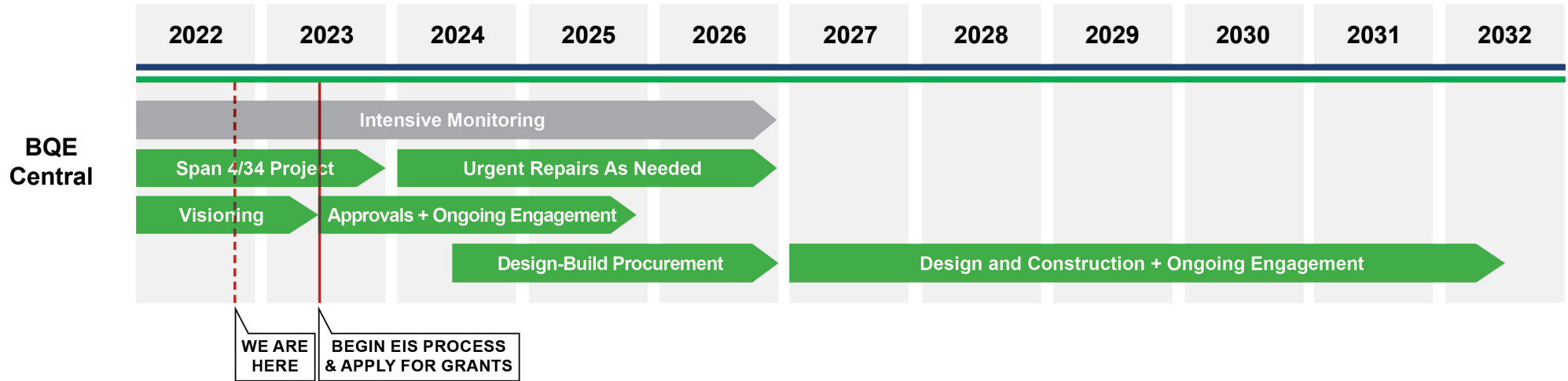
Thursday, October 13, 2022

LAST TIME



Project Timeline

BQE Central: Upcoming Events



BQE Central Workshop 1

Thursday, October 13, 2022

BQE Central Workshop 2

Feedback on Initial Concepts

In-Person
 Tuesday, December 13, 2022
 6:30 PM to 8:30 PM
 New York City College of Technology
 285 Jay Street, Brooklyn, NY 11201

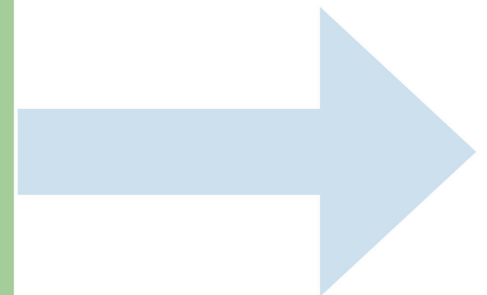
Virtual
 Thursday, December 15, 2022
 6:30 PM to 8:30 PM
 Please register in advance:
bit.ly/bqecentral-2

BQE Central Workshop 3

Further Refine Concepts

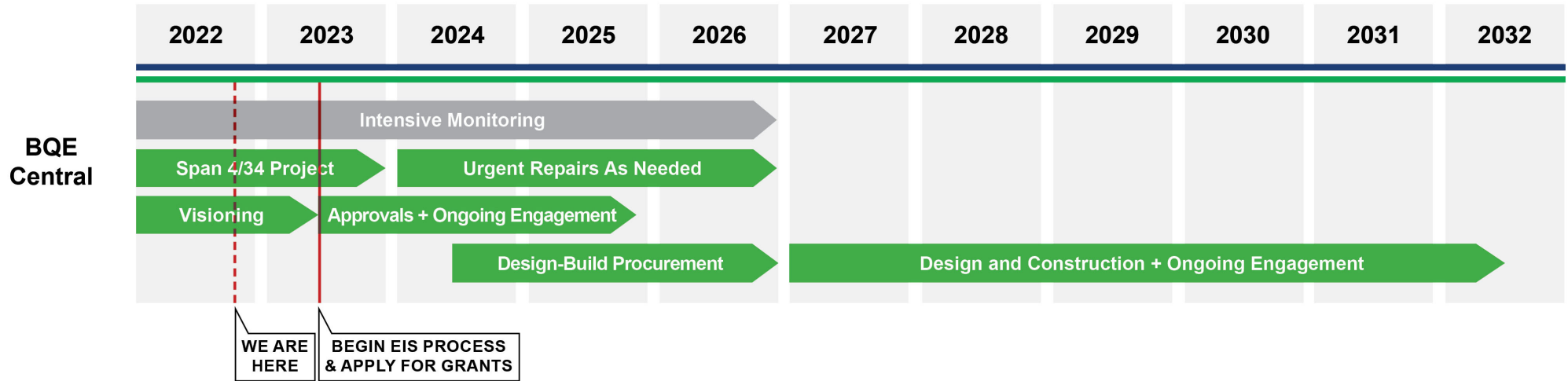
Virtual
 Tuesday, February 28, 2023
 6:30 PM to 8:30 PM
 Details coming soon

In-person
 Thursday, March 2, 2023
 6:30 PM to 8:30 PM
 Details coming soon



Project Timeline

BQE Central: Upcoming Events



BQE Central Workshop 1
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


Initiate Environmental Review Process & Apply for Grants

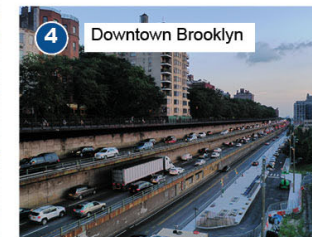
Spring 2023

There will be additional community feedback throughout environmental review.



BQE Vision Overview

-  BQE-North
-  BQE-Central
-  BQE-South
-  City-Owned
-  State-Owned



Project Focus and Engagement Approach



Urgency & Resiliency

Take action as necessary to ensure that City section remains safe; prioritize sustainable design.



Equity

Invest in communities along the full BQE corridor, not just higher income City section.



Fiscal Responsibility

Pursue federal grants; make needed repairs; focus investments on greatest impact.



Stakeholder Involvement

Work with elected officials and communities to develop BQE vision and move projects forward.

Community engagement will guide Mayor Adams' & DOT's decisions about the future of the full Brooklyn BQE Corridor.



Inclusive



Transparent



Consistent



Who's Involved?



Community Visioning Council

... Guides the Engagement Process

Representatives from elected official offices, industry, small business organizations, civic and tenant associations, environmental justice and transportation advocates



Community Partners

... Help Lead Grassroots Engagement

Engagement resources for community based organizations, with meaningful community ties, demonstrated experience in mobilizing their constituencies, and specialty in multilingual capacity



Topical Working Groups

... Facilitate Focused Discussions

Subject Matter Experts facilitate discussion around critical issues such as traffic, transportation, and logistics; open space, connectivity, and public realm; environmental justice, accessibility, and equity; and land use and economic development

Local, State, & Federal Agencies



Department of Transportation



U.S. Department of Transportation
Federal Highway Administration

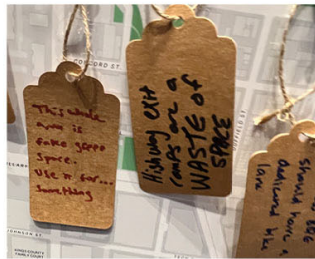
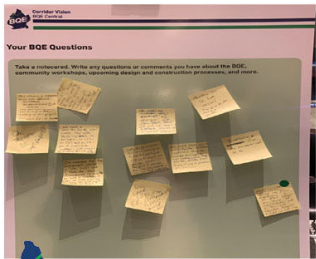
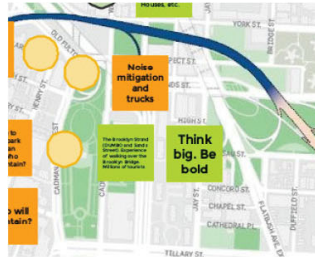
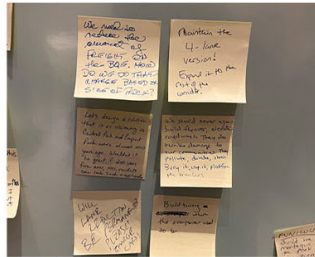
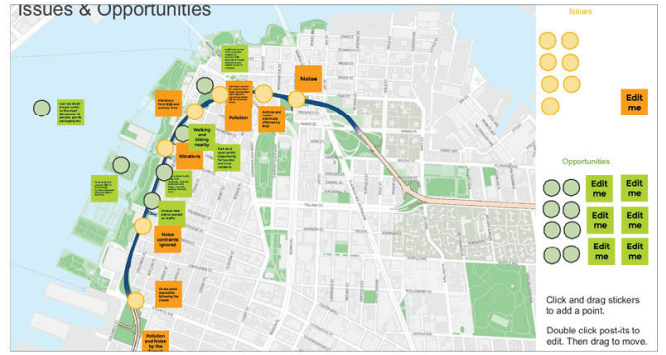
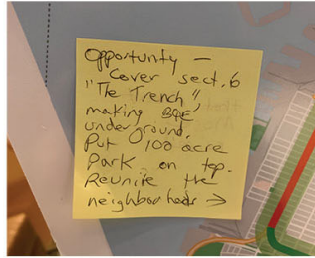


**What Did We Hear from
the Community?**

2

What Did We Hear?

What have we heard?



Throughout this process, we have heard...



Use this opportunity for a **visionary, forward-thinking project** for generations to come.



Reconnect our communities and open space in an accessible & resilient way.



Reduce pollution, noise, and traffic and negative health impacts.



Reduce or obscure the physical presence of the BQE, by covering the highway by capping, burying, tunneling, or removing the BQE and create new opportunities for open space




Respect the historic nature of the Promenade.





Be very transparent about the pros & cons of recommended design options.


Community Feedback


At a high level, key takeaways included:


 Improve existing and facilitate new connections & access points to BBP. Brooklyn Bridge Park.

 Investment and improvement in nearby parks and open space are critical. Equity, sustainability, and resiliency must be central to planning.

 Reduce reliance on trucks. Shift freight activity to other methods. Explore solutions like making the BQE truck-only, tolling, and other demand management tools.

 Do not infringe on private property. Minimize impacts on local residences.

 Reducing conflicts and improve pedestrian & cyclist access to Brooklyn Bridge Park. Improve mobility & reduce vehicular reliance.

 Focus on noise mitigation during construction and permanently. Address vibrations from the BQE on residential buildings.

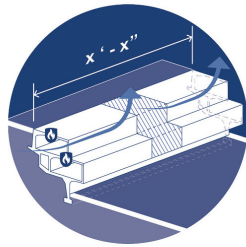


Design Concept Considerations

3

Overview

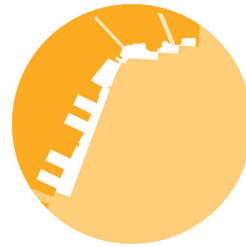
- Explore
- Review
- Avoid



Tunnels & Open Space Connections



Effects on Public Property



Brooklyn Bridge Park Connections



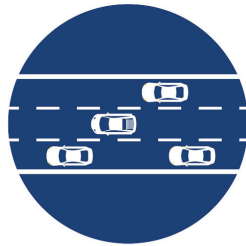
Effects on Private Property



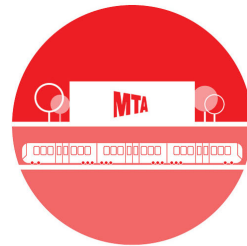
Promenade Configuration & View Shed



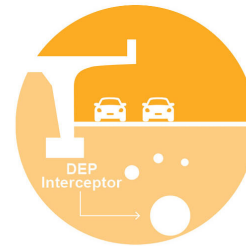
Fully or Partially Replace Retaining Wall



Roadway Width & Configuration



MTA Facilities



DEP Interceptor Sewer



Brooklyn Bridge Surface Connections



Manhattan Bridge to BQE



Atlantic Ave Interchange



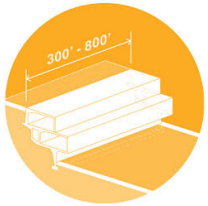
Tunnels & Open Space Connections

(Definitions per National Fire Prevention Association)



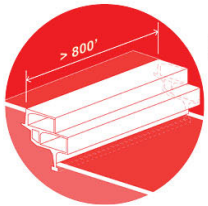
Category X:
< 300ft

Gateway Arch Park
St Louis, MO



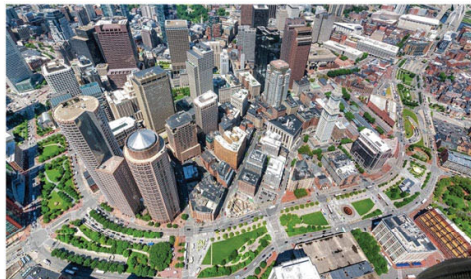
Category A:
300 - 800 ft

The Presidio
San Francisco, CA

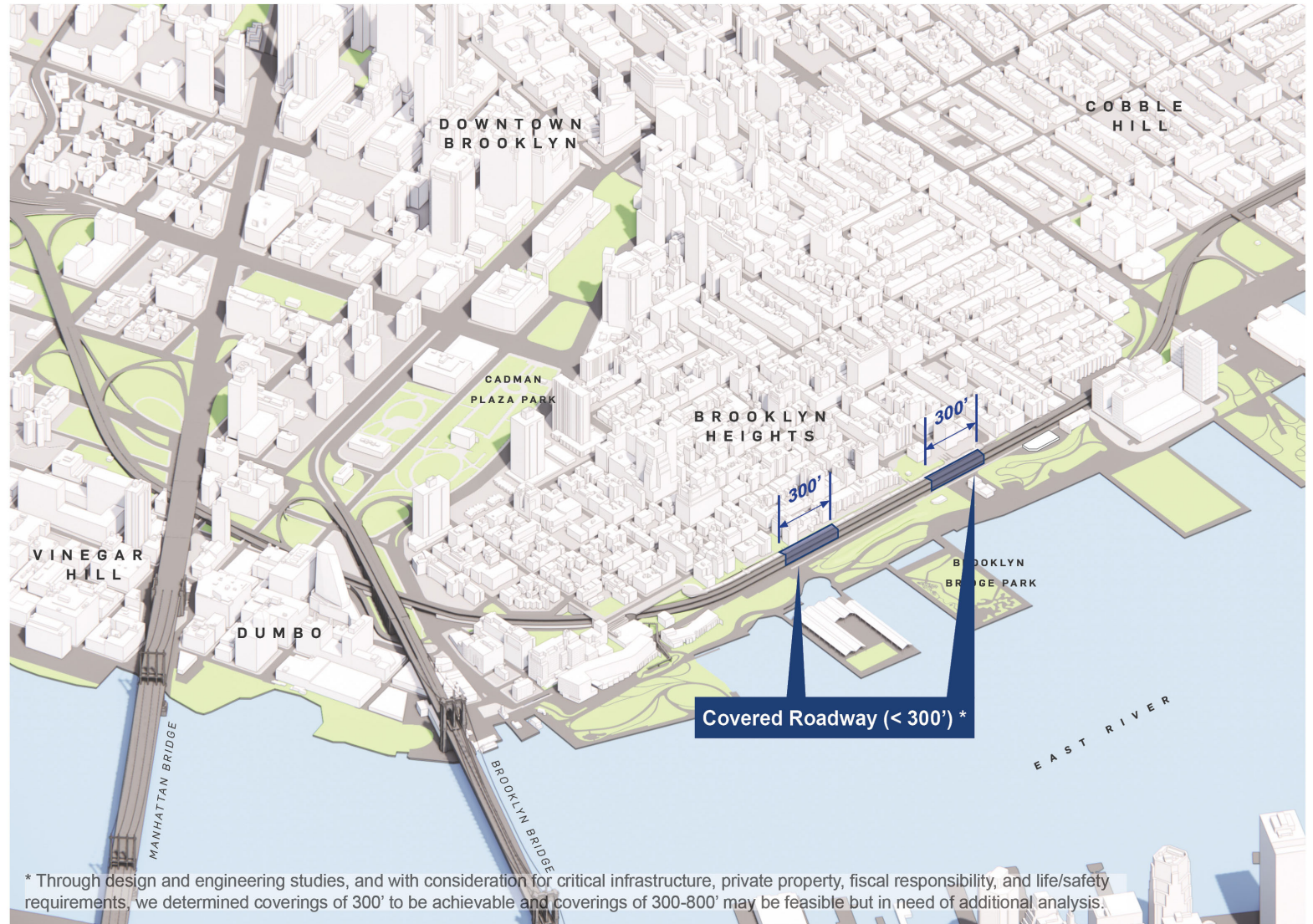
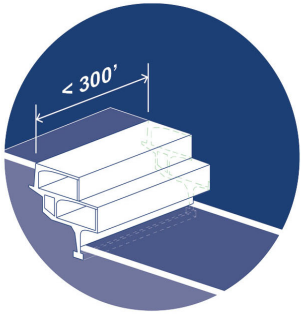


Category B/C/D:
> 800 ft

Big Dig
Boston, MA



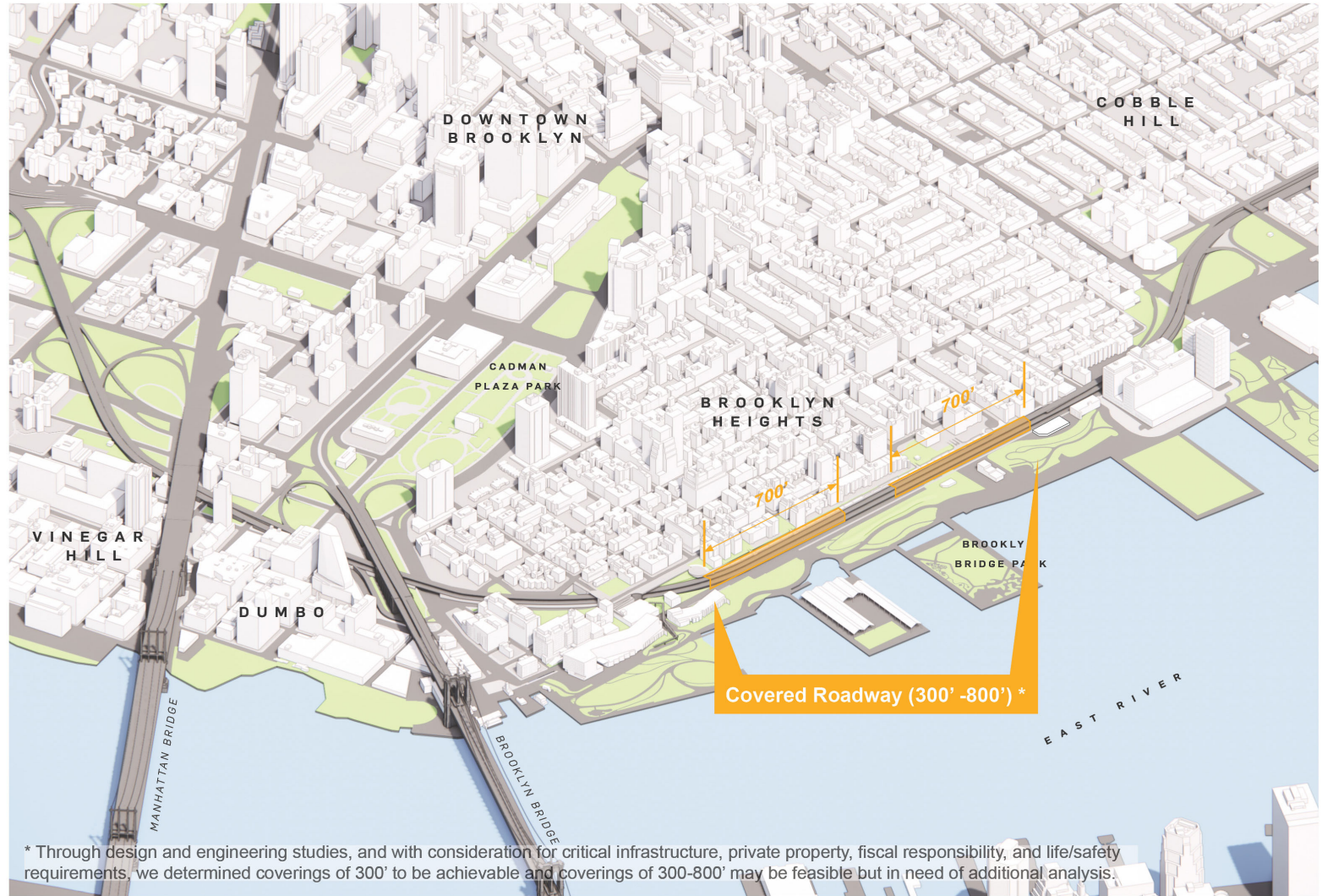
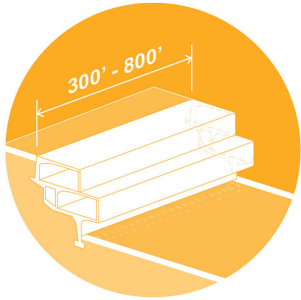
(Category X: < 300')



* Through design and engineering studies, and with consideration for critical infrastructure, private property, fiscal responsibility, and life/safety requirements, we determined coverings of 300' to be achievable and coverings of 300-800' may be feasible but in need of additional analysis.



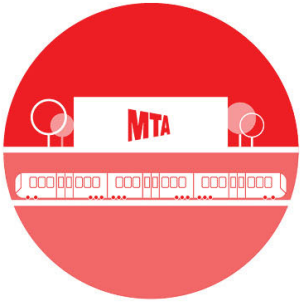
Tunnels & Open Space Connections (Category A: 300' - 800')



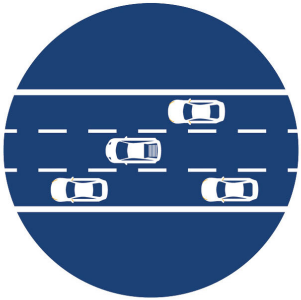
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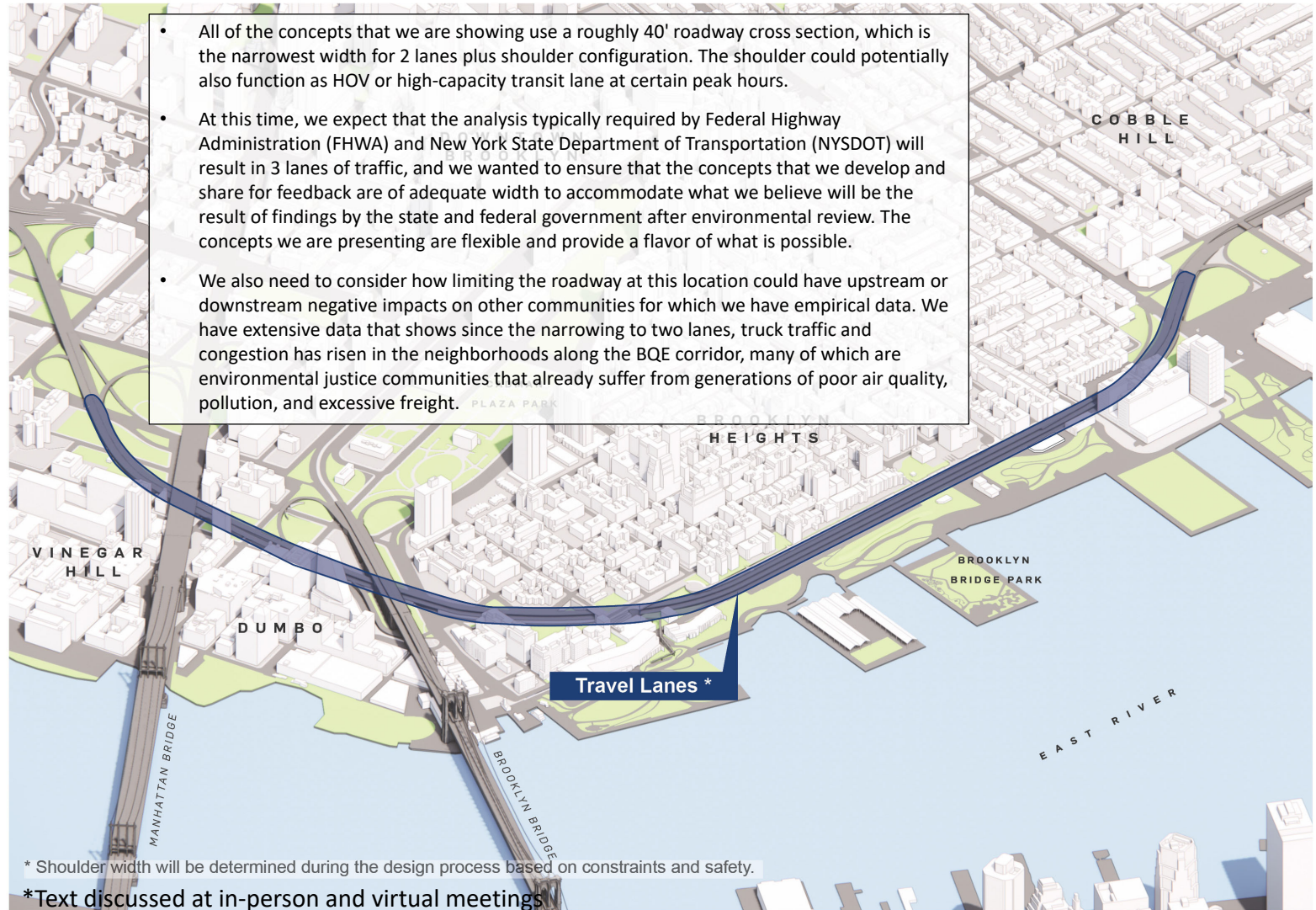
MTA Facilities



Roadway Width and Configuration

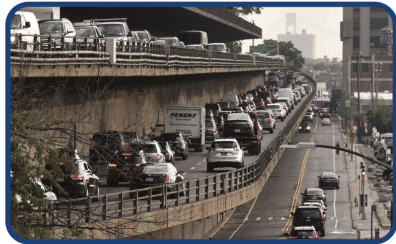


- All of the concepts that we are showing use a roughly 40' roadway cross section, which is the narrowest width for 2 lanes plus shoulder configuration. The shoulder could potentially also function as HOV or high-capacity transit lane at certain peak hours.
- At this time, we expect that the analysis typically required by Federal Highway Administration (FHWA) and New York State Department of Transportation (NYSDOT) will result in 3 lanes of traffic, and we wanted to ensure that the concepts that we develop and share for feedback are of adequate width to accommodate what we believe will be the result of findings by the state and federal government after environmental review. The concepts we are presenting are flexible and provide a flavor of what is possible.
- We also need to consider how limiting the roadway at this location could have upstream or downstream negative impacts on other communities for which we have empirical data. We have extensive data that shows since the narrowing to two lanes, truck traffic and congestion has risen in the neighborhoods along the BQE corridor, many of which are environmental justice communities that already suffer from generations of poor air quality, pollution, and excessive freight.



* Shoulder width will be determined during the design process based on constraints and safety.

*Text discussed at in-person and virtual meetings



Considerations

Overall Considerations

- 

Tunnels & Open Space Connections



Roadway Width & Configuration
- 

Effects on Public Property



MTA Facilities
- 

Brooklyn Bridge Park Connections



DEP Interceptor Sewer
- 

Effects on Private Property



Brooklyn Bridge Surface Connections
- 

Promenade Configuration & View Shed



Manhattan Bridge to BQE
- 

Fully or Partially Replace Retaining Wall



Atlantic Ave Interchange



Design Concepts

4

Our Process



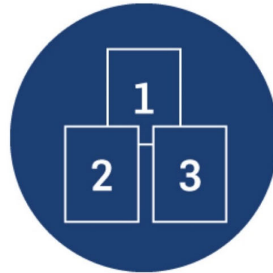
1.

Digested What We Heard



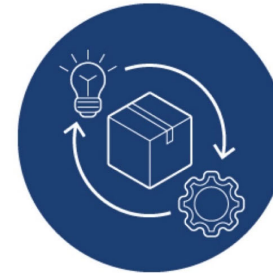
2.

Evaluated a Variety of Options Against Our Considerations



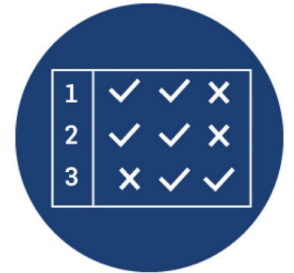
3.

Developed Focused Concepts



4.

Reviewed and Tested Concepts with the Engineering Team & Revised in a Feedback Loop

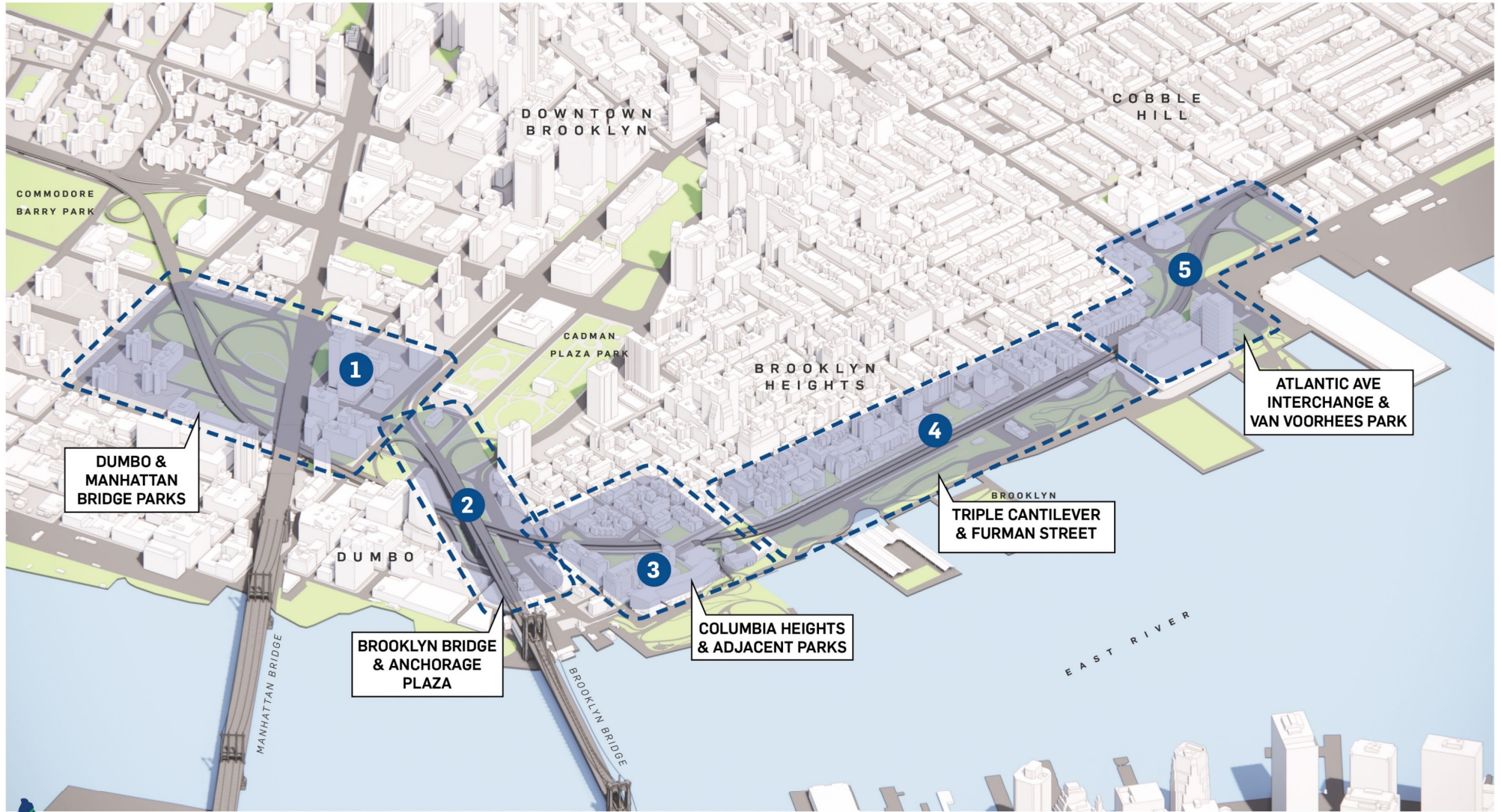


5.

Evaluated Each Option According to Our Considerations. Focused on Equity & Ensuring Fiscal Responsibility



BQE Central Sub-areas



Atlantic Ave Interchange & Van Voorhees Park

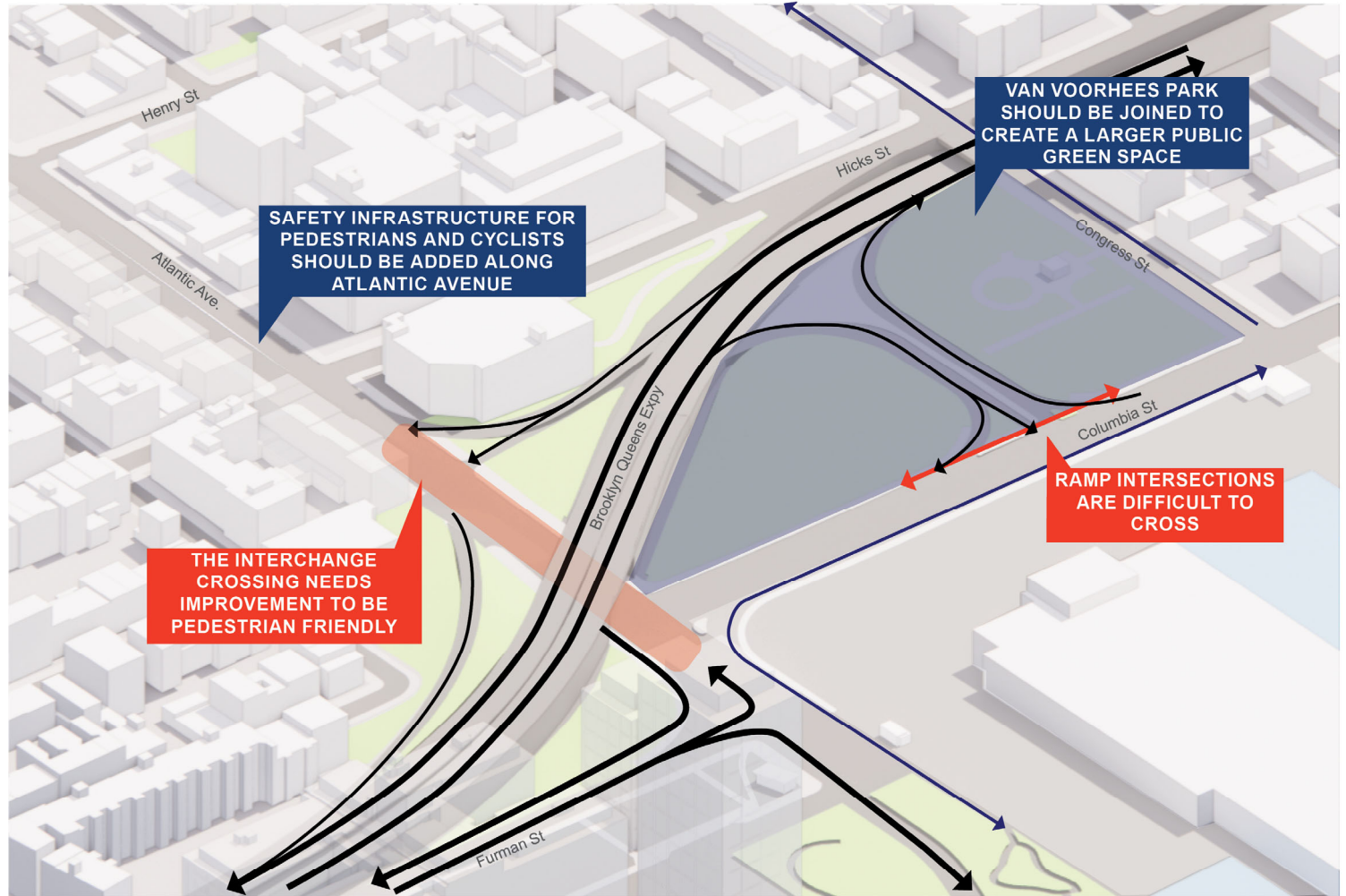


Atlantic Ave Interchange & Van Voorhees Park

What We've Heard



- ← Vehicular Circulation
- ← Existing Cyclist Circulation



SAFETY INFRASTRUCTURE FOR PEDESTRIANS AND CYCLISTS SHOULD BE ADDED ALONG ATLANTIC AVENUE

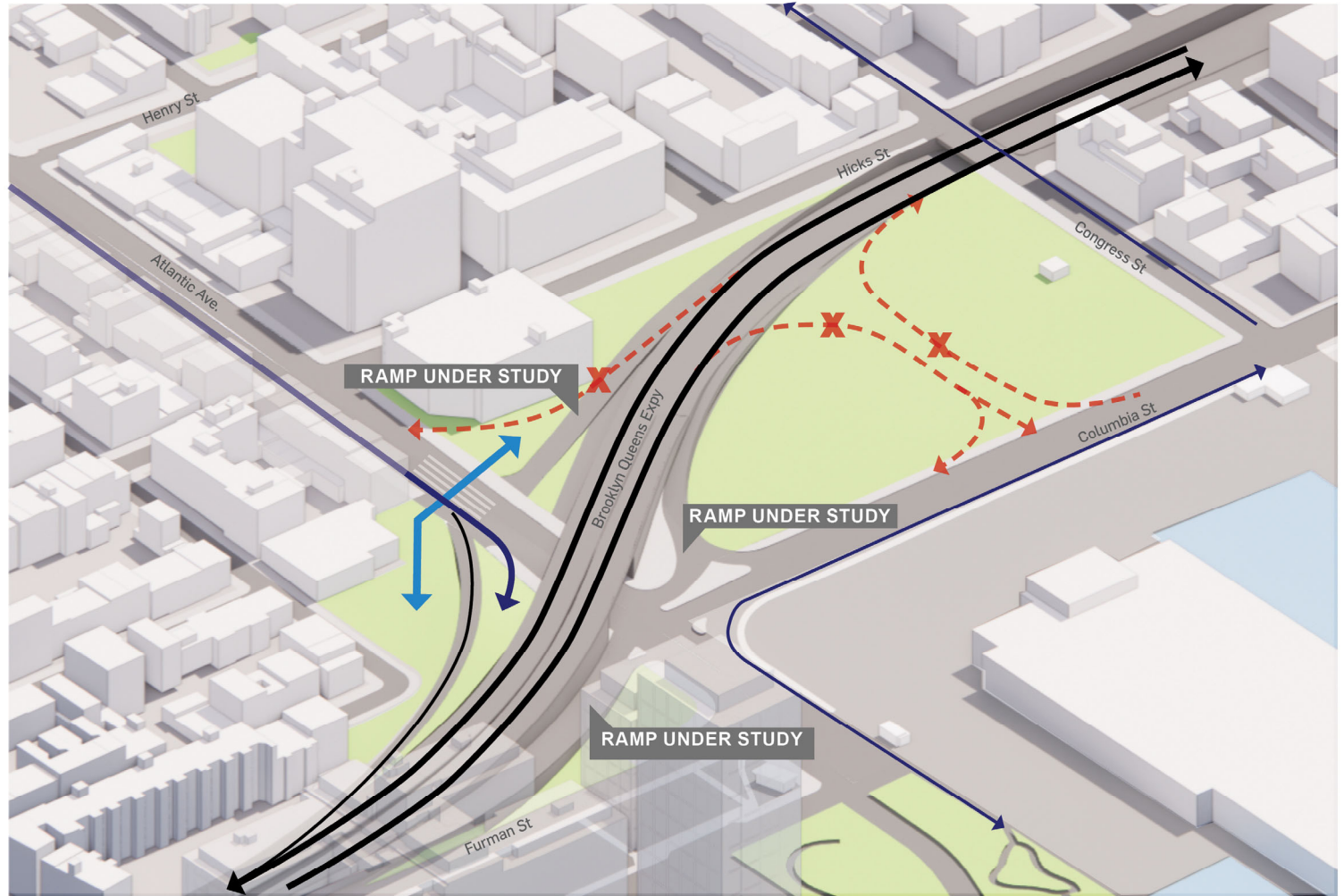
VAN VOORHEES PARK SHOULD BE JOINED TO CREATE A LARGER PUBLIC GREEN SPACE

THE INTERCHANGE CROSSING NEEDS IMPROVEMENT TO BE PEDESTRIAN FRIENDLY

RAMP INTERSECTIONS ARE DIFFICULT TO CROSS



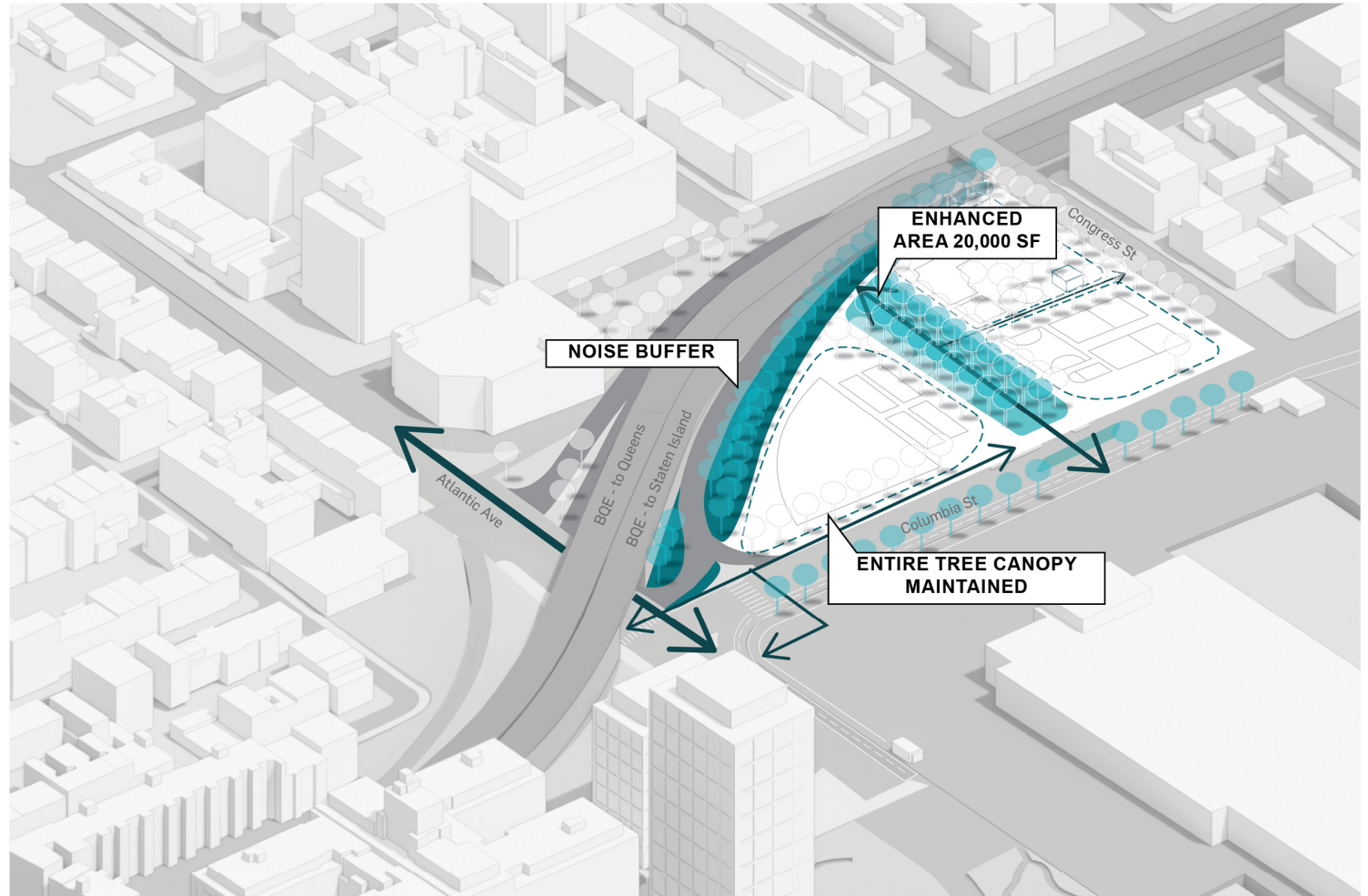
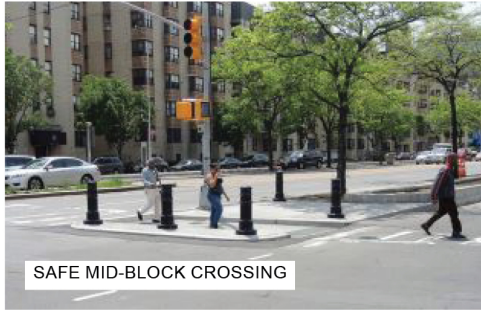
Atlantic Ave Interchange & Van Voorhees Park



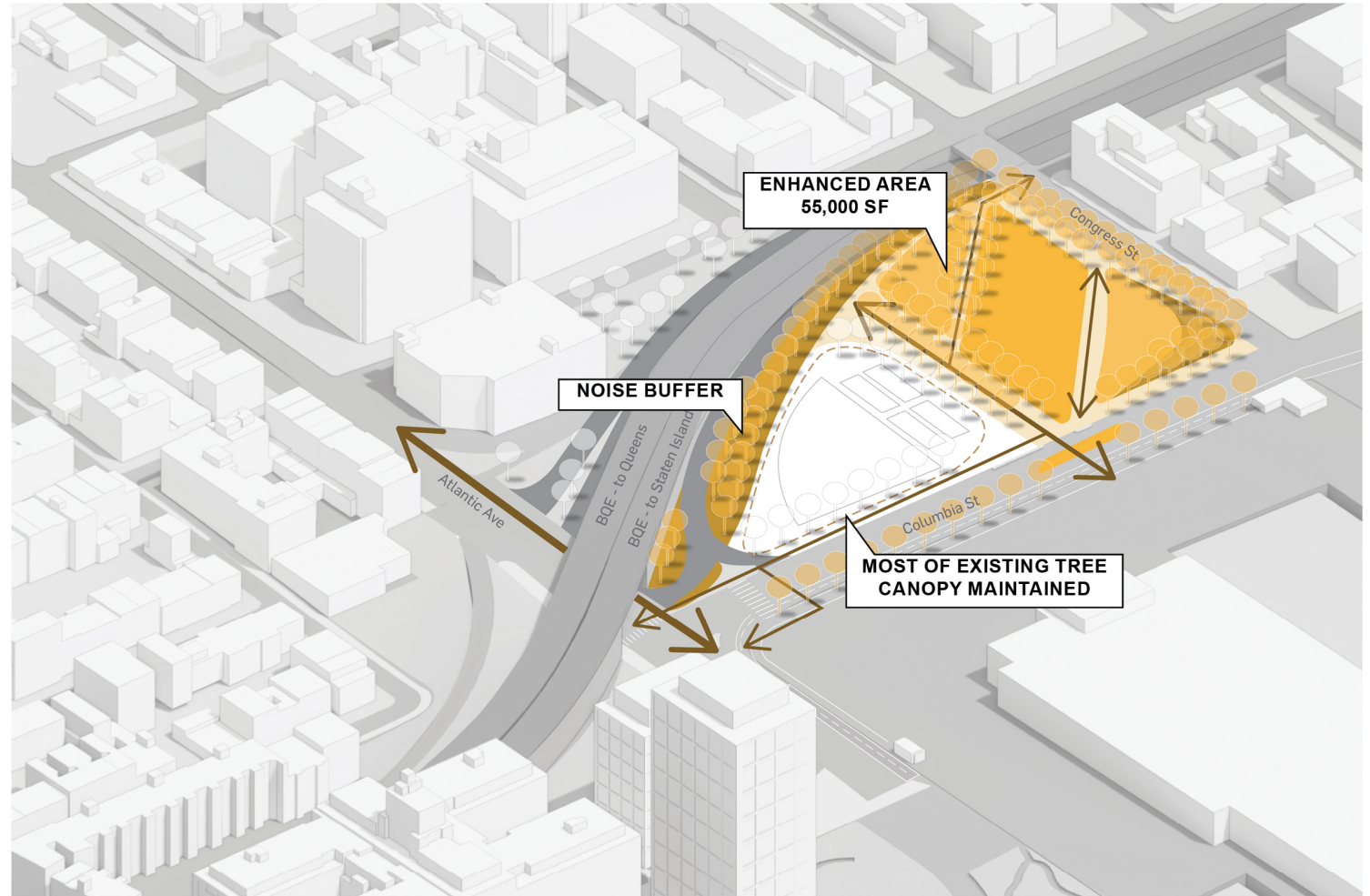
- ← Vehicular Circulation
- ← Existing Cyclist Circulation
- ←X Removed Vehicular Circulation
- ← Proposed Cyclist Connection
- ↔ Proposed Pedestrian Connections



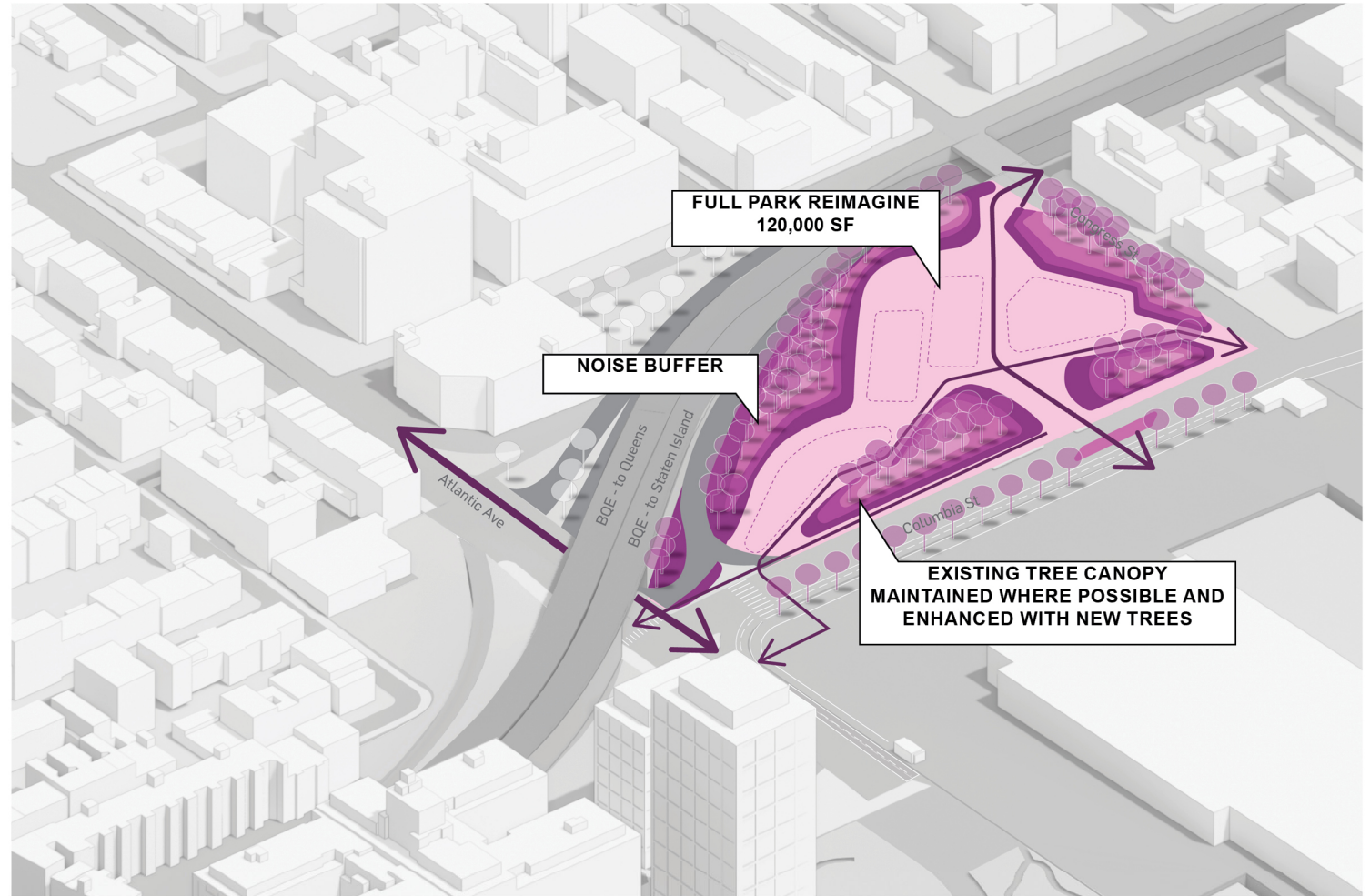
Atlantic Ave Interchange & Van Voorhees Park Concept 1



Atlantic Ave Interchange & Van Voorhees Park Concept 2



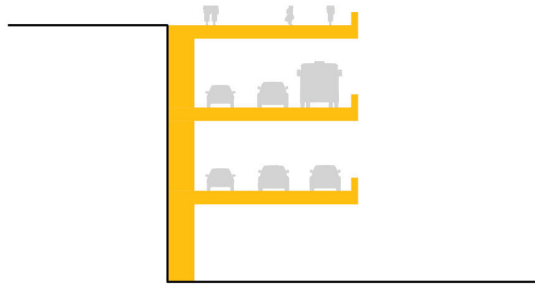
Atlantic Ave Interchange & Van Voorhees Park Concept 3



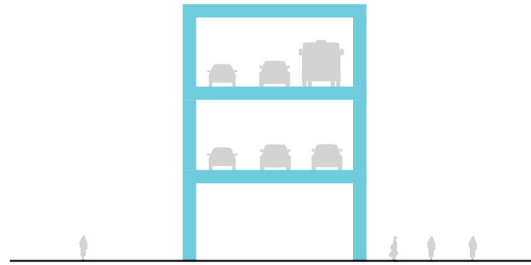
Triple Cantilever & Furman Street



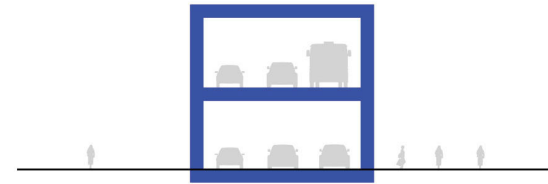
Roadway Typologies - Potential Sections



Triple Cantilever



Stacked Above Street-Level



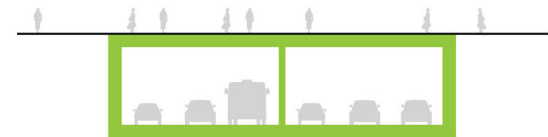
Stacked At Street-Level



Flat Above Street-Level



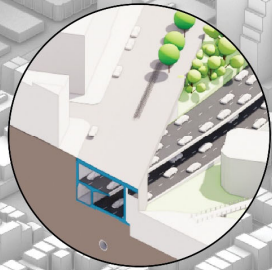
Flat At Street-Level



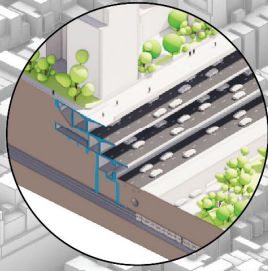
Flat Below Street-Level

Design Concepts

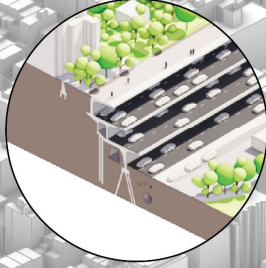
Existing Conditions



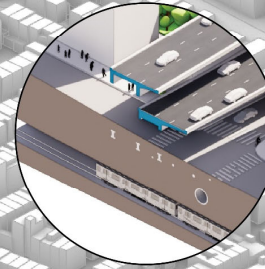
1. COLUMBIA HEIGHTS



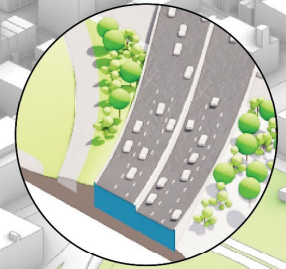
2. CLARK STREET FAN PLANT



3. TRIPLE CANTILEVER



4. JORALEMON

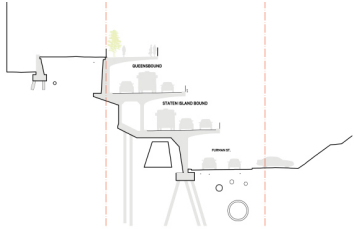


5. ATLANTIC AVENUE

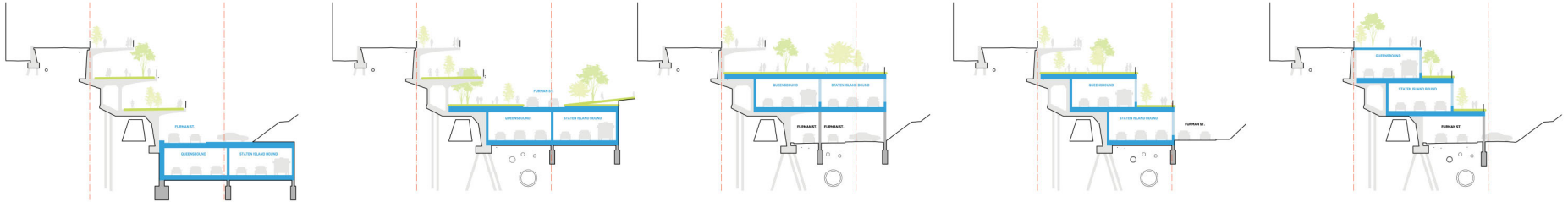


Section Matrix - Triple Cantilever

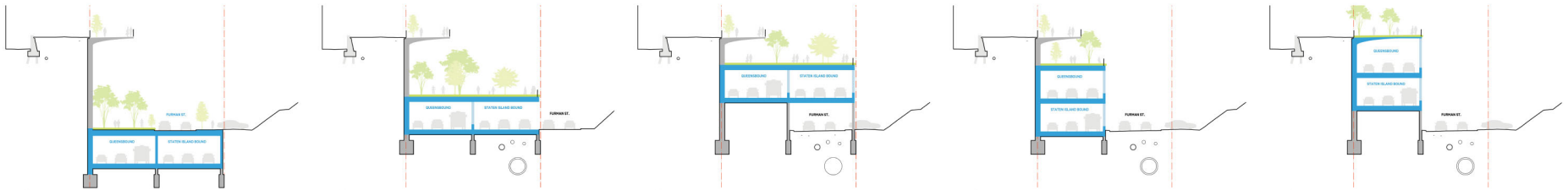
Existing



Partial Replacement



Full Replacement



Flat Below Street-Level

Flat At Street-Level

Flat Above Street-Level

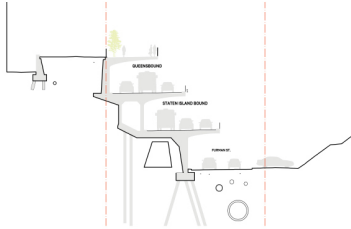
Stacked At Street-Level

Stacked Above Street-Level

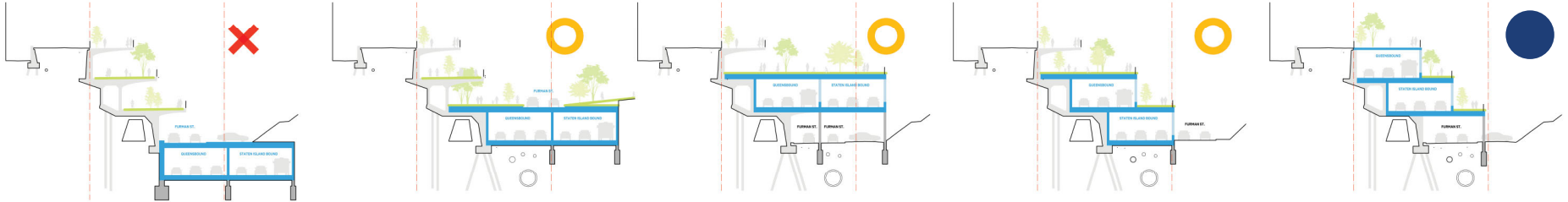


Section Matrix - Triple Cantilever

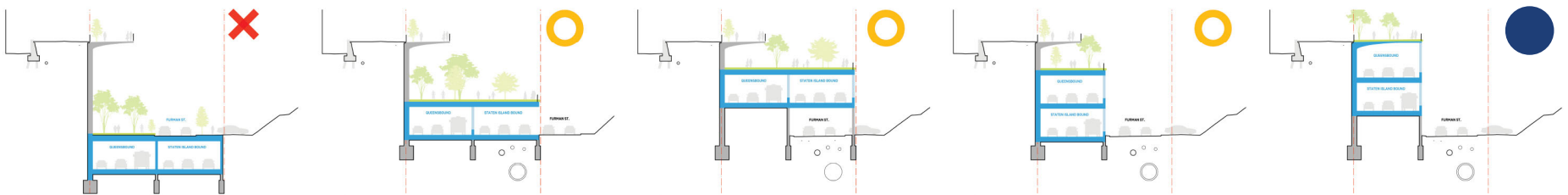
Existing



Partial Replacement



Full Replacement



Flat Below Street-Level

Flat At Street-Level

Flat Above Street-Level

Stacked At Street-Level

Stacked Above Street-Level



Triple Cantilever Concepts

Existing Condition

Roadway Structure

Potential Open Spaces

The Stoop



The Terraces



The Lookout



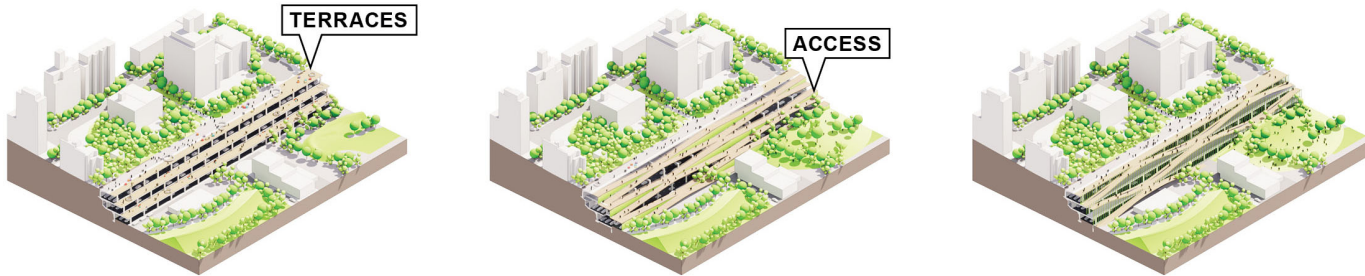
Triple Cantilever Concepts

Design Studies (Ongoing) →

The Stoop



The Terraces



The Lookout



Triple Cantilever Concepts



The Terraces



The Lookout



The Stoop

The Terraces | Partial Replacement



**Stacked
Above
Street**

>



**Stacked
Above
Street**

>



**Stacked
Above
Street**

The Terraces | Partial Replacement



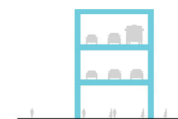
**Stacked
Above
Street**

>



**Flat
at
Street**

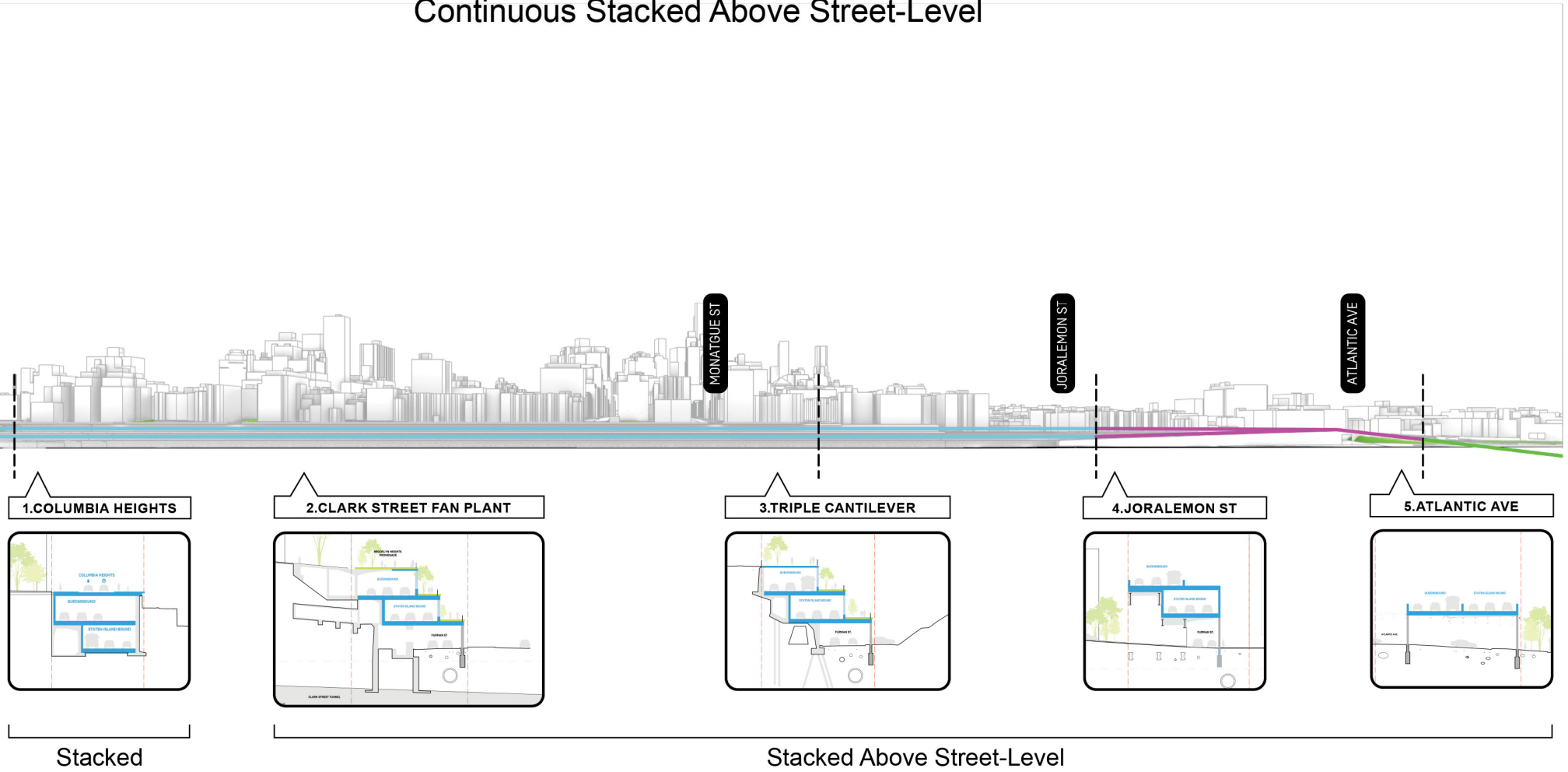
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**Stacked
Above
Street**

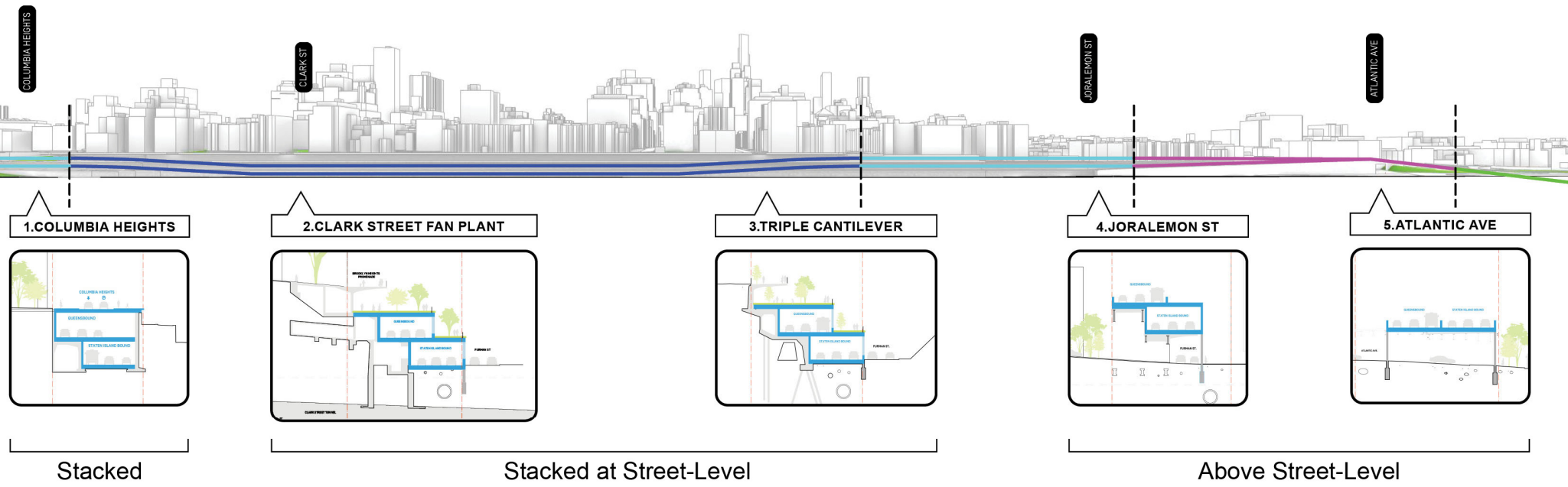
The Terraces - Elevation

Continuous Stacked Above Street-Level

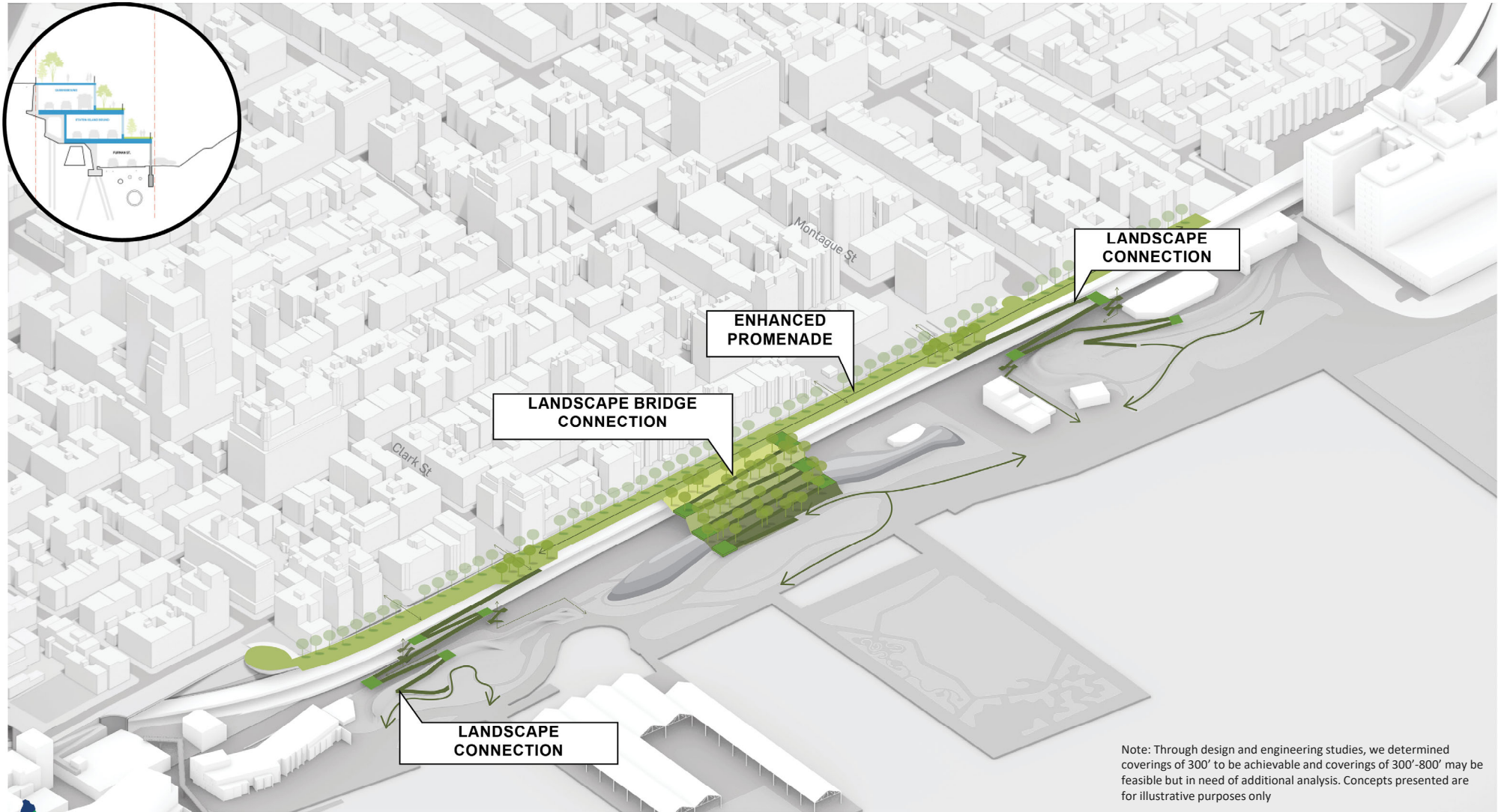


The Terraces - Elevation

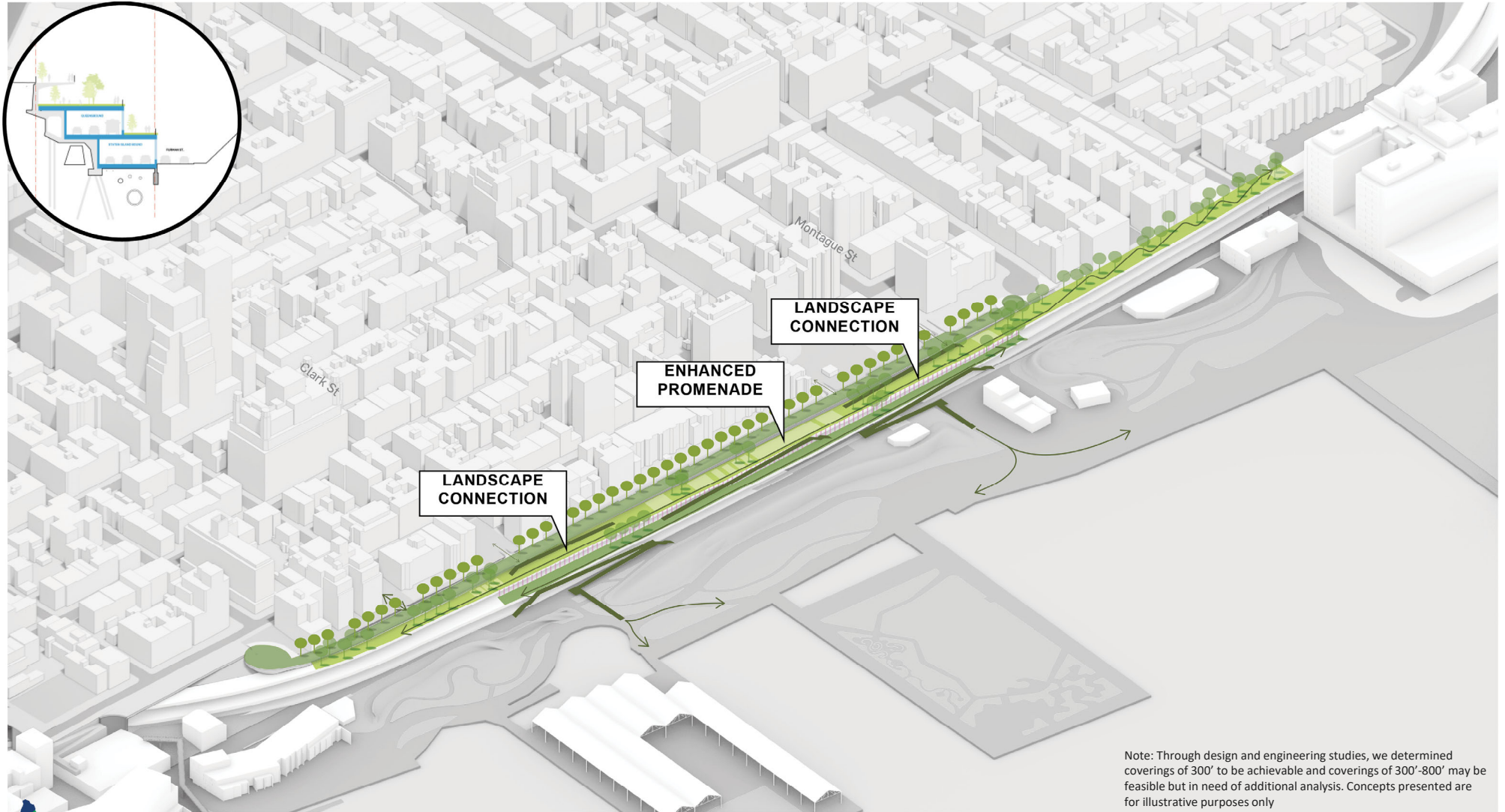
Stacked to Stacked at Street-Level to Stacked Above Street-Level



The Terraces | Partial Replacement

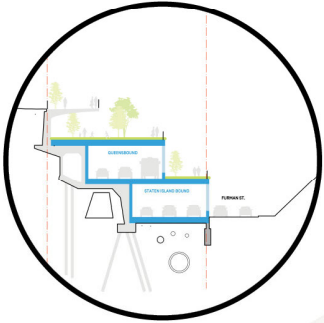


The Terraces | Partial Replacement



The Terraces - Existing Conditions

Partial Replacement At Street-Level



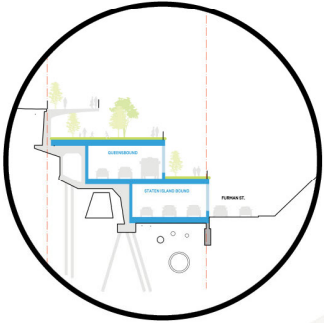
The Terraces - Roadway Structure

Partial Replacement Above Street-Level



The Terraces - Roadway Structure

Partial Replacement At Street-Level



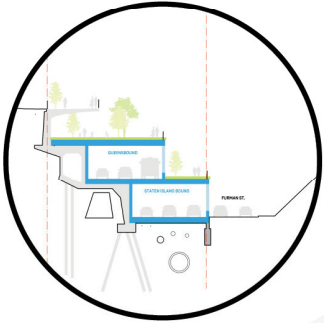
The Terraces - Potential Open Space

Partial Replacement Above Street-Level



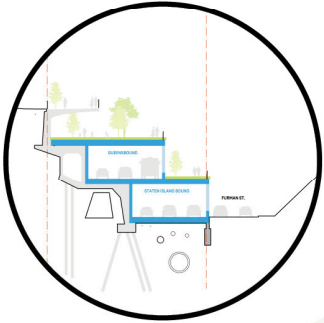
The Terraces - Potential Open Space

Partial Replacement At Street-Level



The Terraces - Design Studies

Partial Replacement At Street-Level



The Terraces - Design Studies

Partial Replacement Above Street-Level



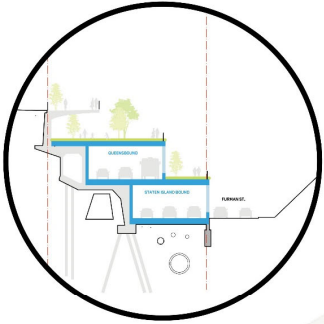
The Terraces - Design Studies

Partial Replacement Above Street-Level



The Terraces - Design Studies

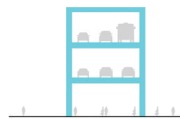
Partial Replacement Above Street-Level



The Terraces | Partial Replacement

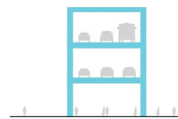


The Lookout | Full Replacement



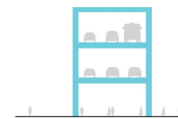
**Stacked
Above
Street**

>



**Stacked
Above
Street**

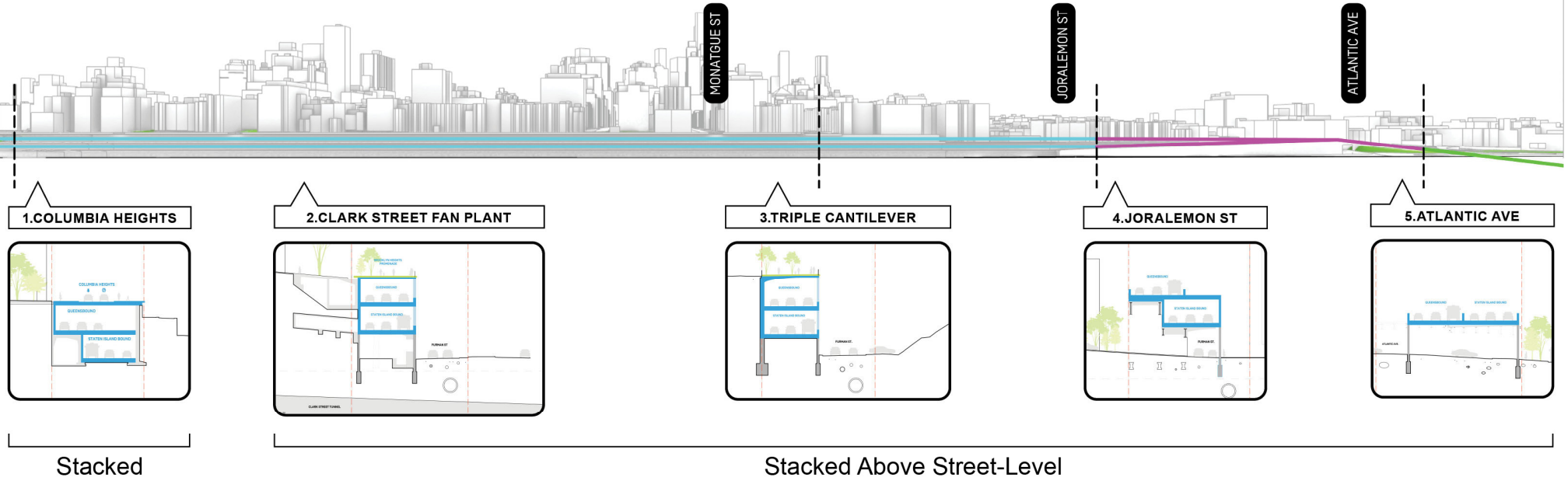
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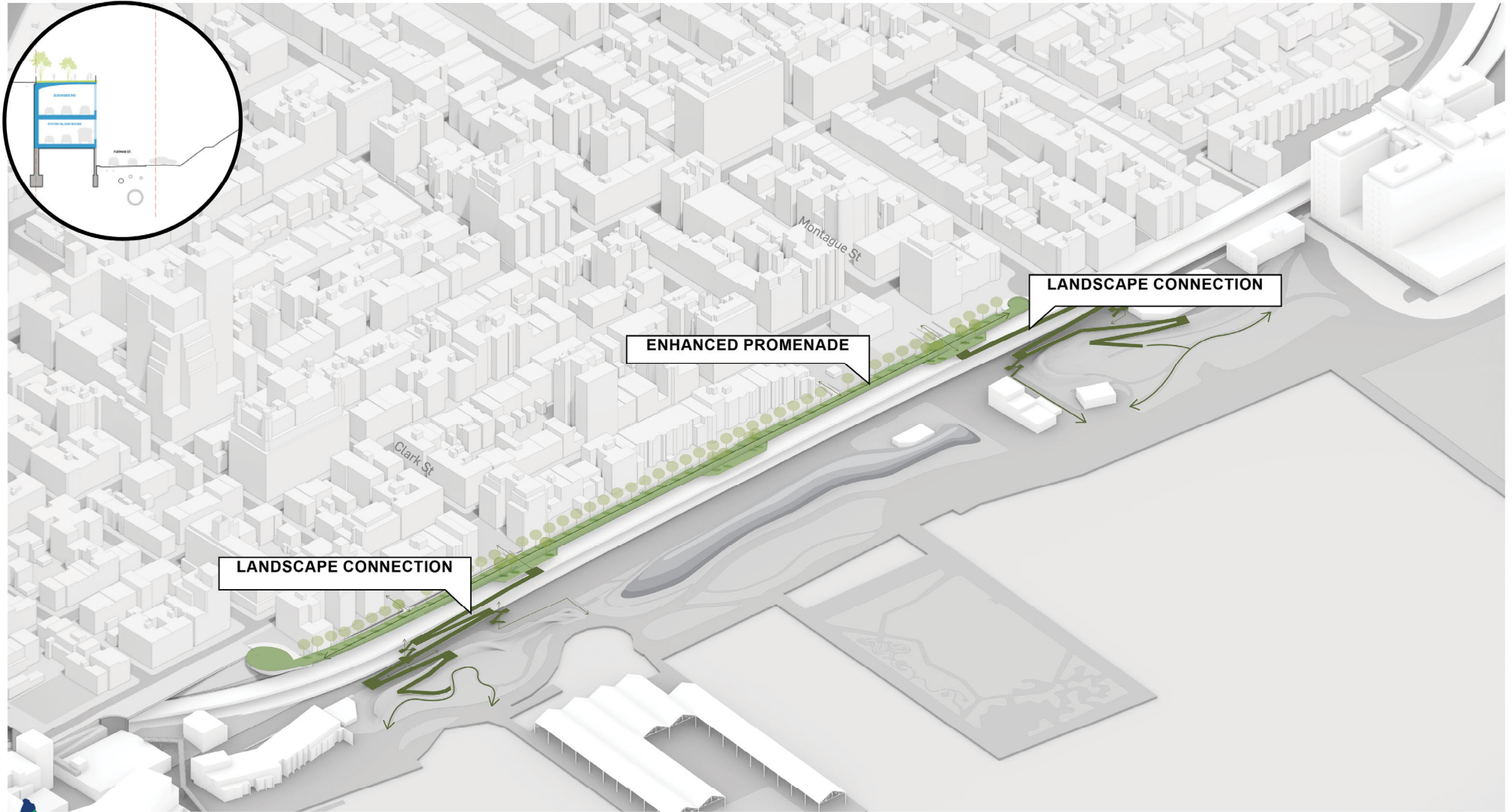
**Stacked
Above
Street**

The Lookout - Elevation

Continuous Stacked Above Street-Level

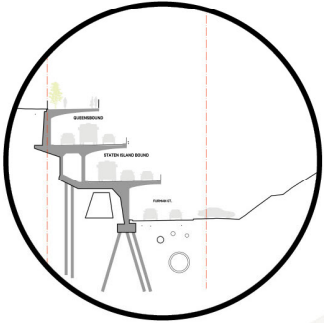


The Lookout | Full Replacement



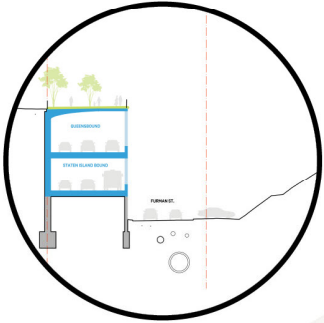
The Lookout - Existing Conditions

Full Replacement



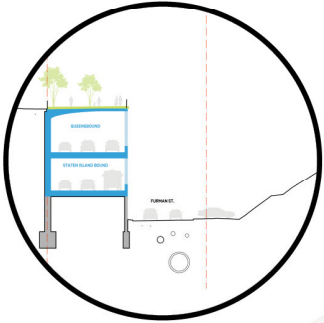
The Lookout - Roadway Structure

Full Replacement



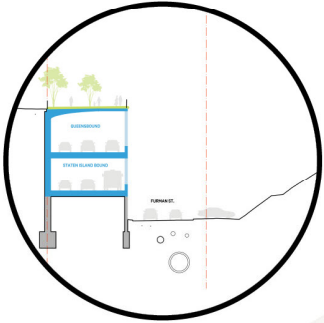
The Lookout - Potential Open Space

Full Replacement



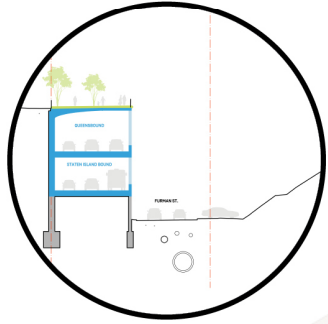
The Lookout - Design Studies

Full Replacement



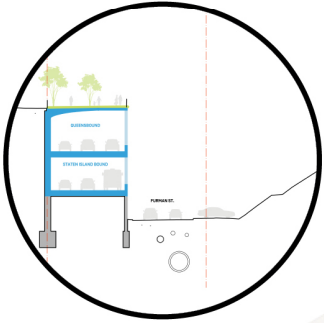
The Lookout - Design Studies

Full Replacement



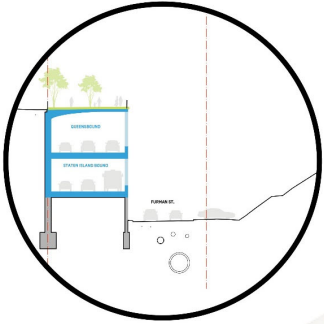
The Lookout - Design Studies

Full Replacement



The Lookout - Design Studies

Full Replacement

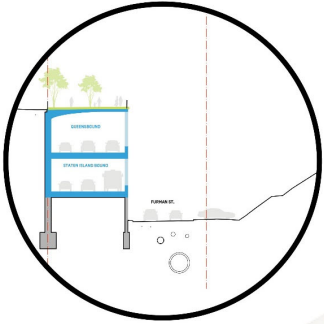


Note: Through design and engineering studies, we determined coverings of 300' to be achievable and coverings of 300'-800' may be feasible but in need of additional analysis. Concepts presented are for illustrative purposes only



The Lookout - Design Studies

Full Replacement

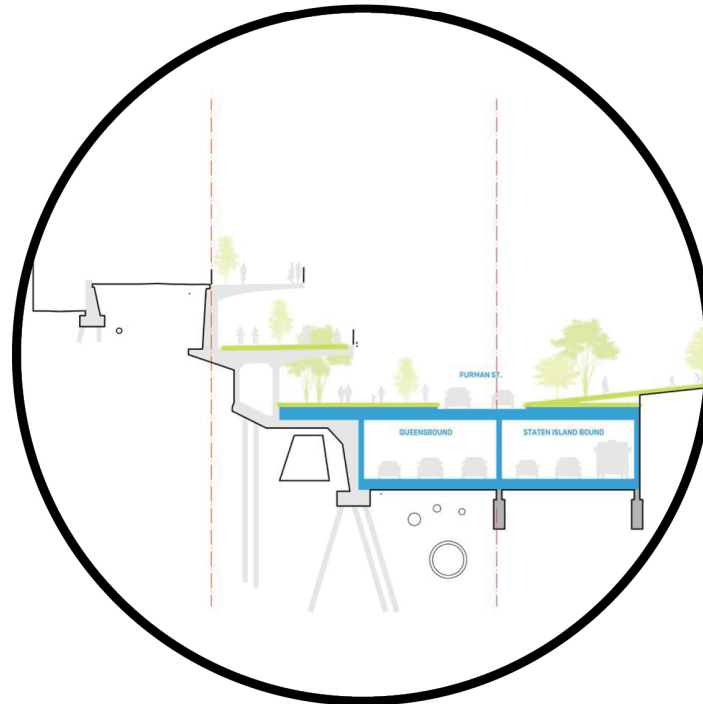


Note: Through design and engineering studies, we determined coverings of 300' to be achievable and coverings of 300'-800' may be feasible but in need of additional analysis. Concepts presented are for illustrative purposes only



BQP

Avoid 



**Stacked
Above
Street**

>



**Flat
at
Street**

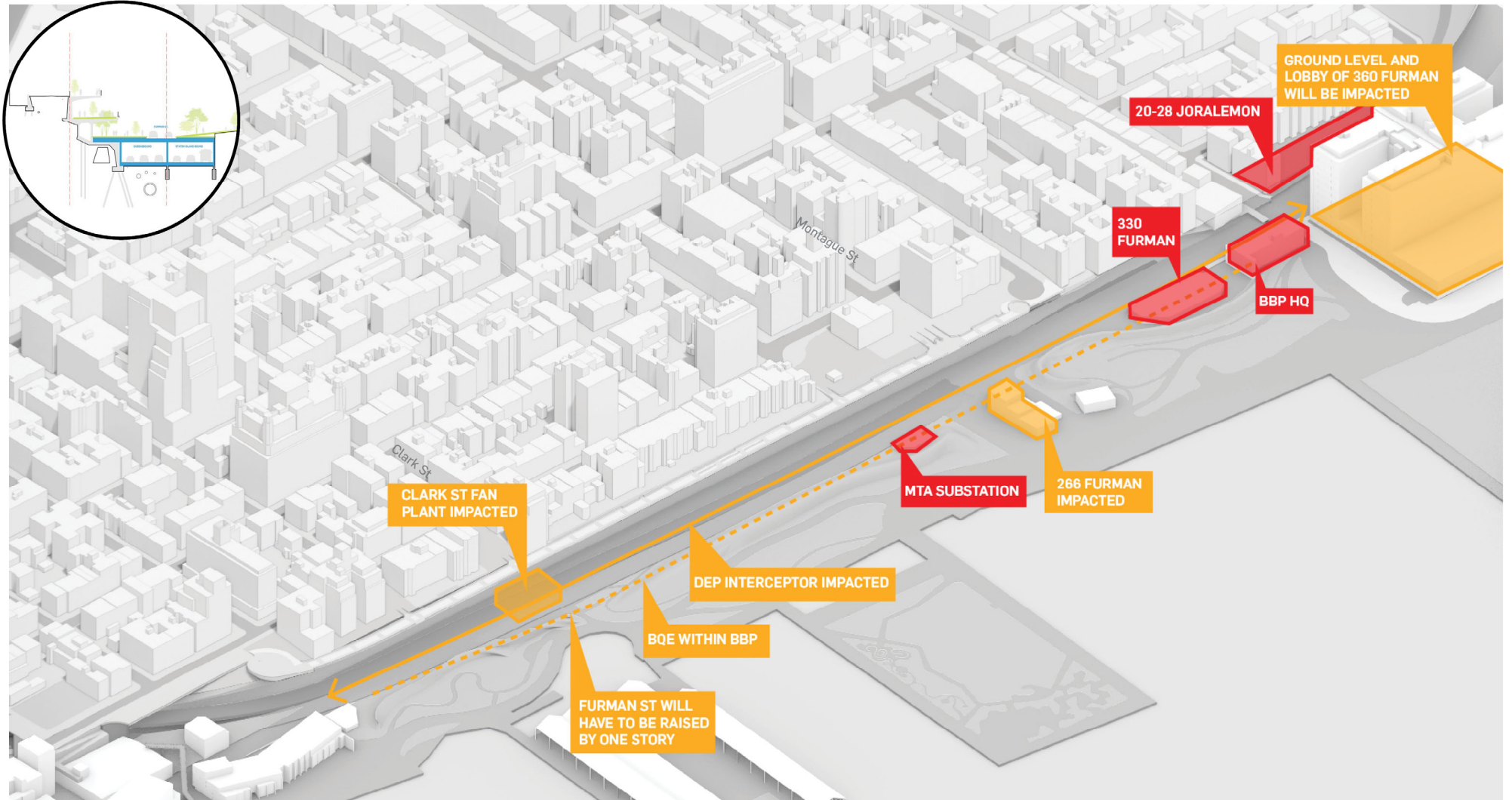
>



**Flat
Below
Street**



BQP | Full Replacement



The Stoop | Partial Replacement



**Stacked
Above
Street**

>



**Flat
Above
Street**

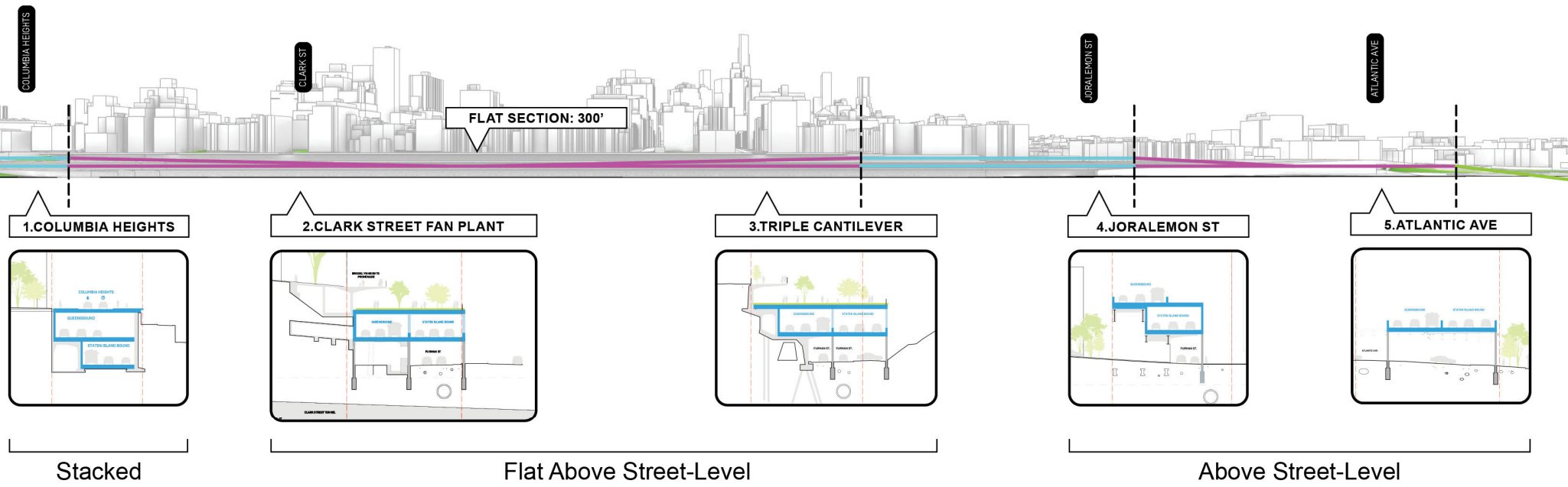
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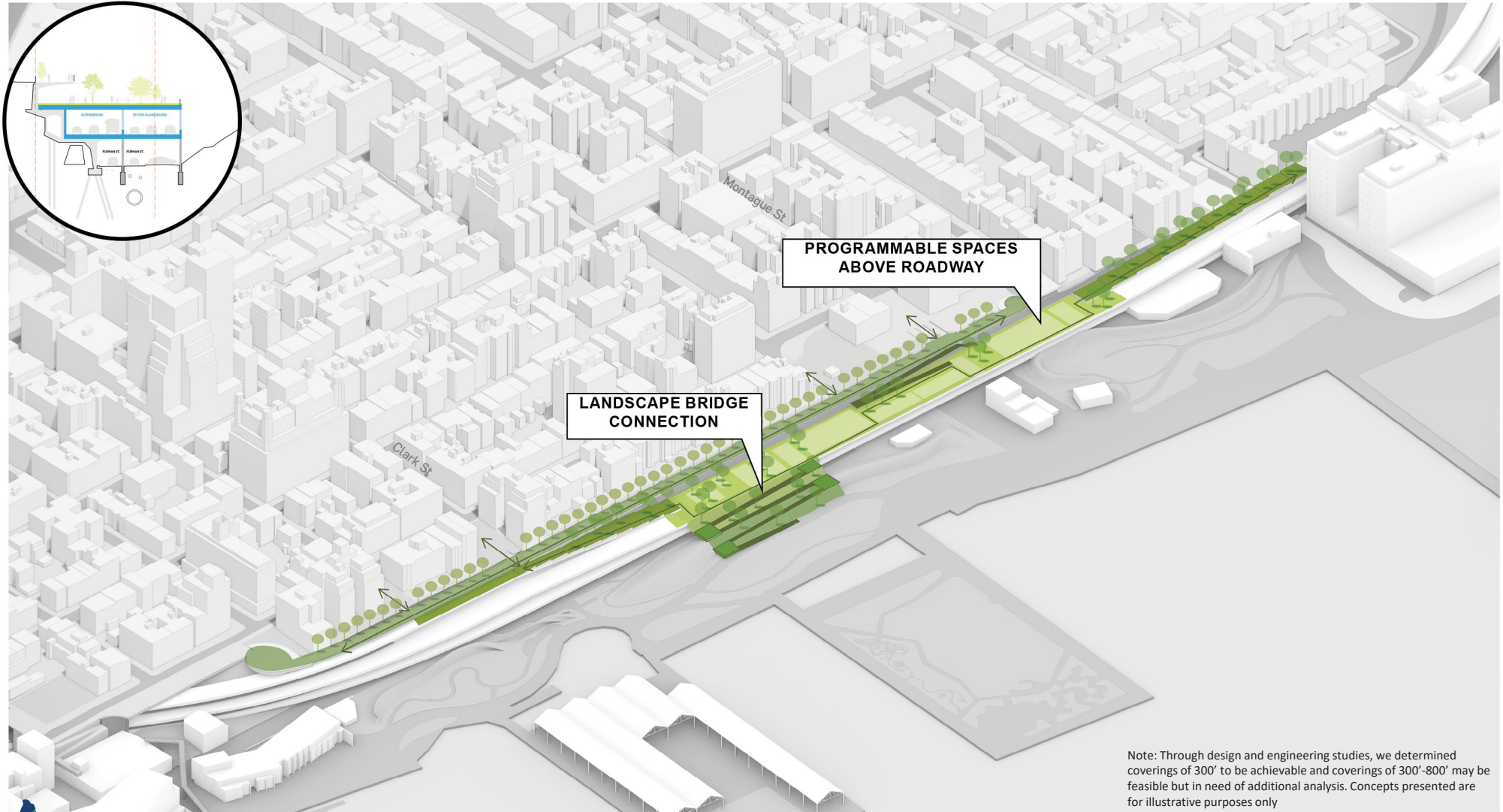
**Stacked
Above
Street**

The Stoop - Elevation

Stacked to Flat Above Street-Level to Above Street-Level

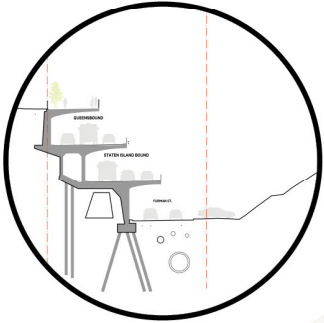


The Stoop | Partial Replacement



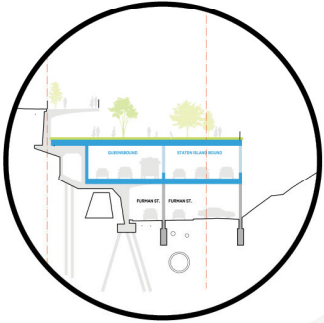
The Stoop - Existing Condition

Partial Replacement



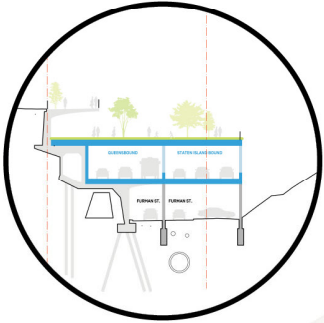
The Stoop - Roadway Structure

Partial Replacement



The Stoop - Potential Open Space

Partial Replacement

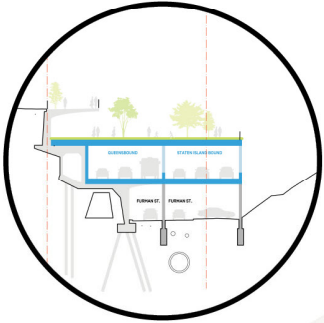


Note: Through design and engineering studies, we determined coverings of 300' to be achievable and coverings of 300'-800' may be feasible but in need of additional analysis. Concepts presented are for illustrative purposes only



The Stoop - Design Studies

Partial Replacement

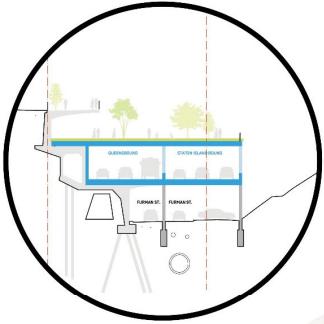


Note: Through design and engineering studies, we determined coverings of 300' to be achievable and coverings of 300'-800' may be feasible but in need of additional analysis. Concepts presented are for illustrative purposes only



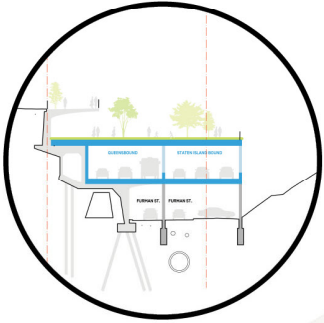
The Stoop - Design Studies

Partial Replacement



The Stoop - Design Studies

Partial Replacement



Note: Through design and engineering studies, we determined coverings of 300' to be achievable and coverings of 300'-800' may be feasible but in need of additional analysis. Concepts presented are for illustrative purposes only



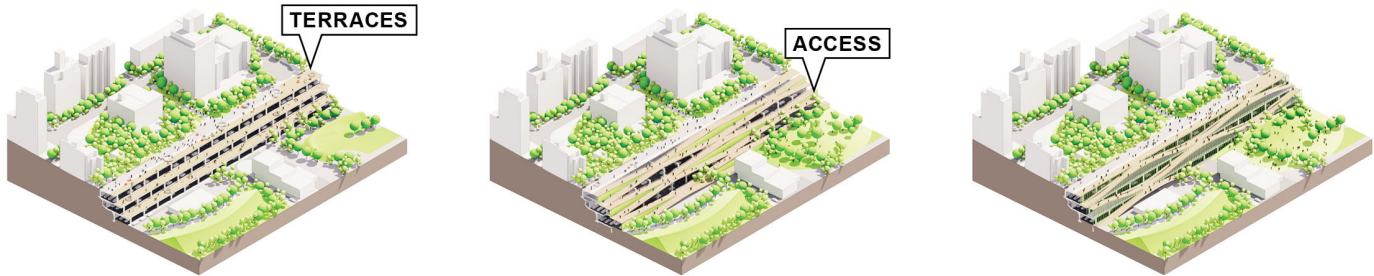
Triple Cantilever Concepts

Design Studies (Ongoing) →

The Stoop



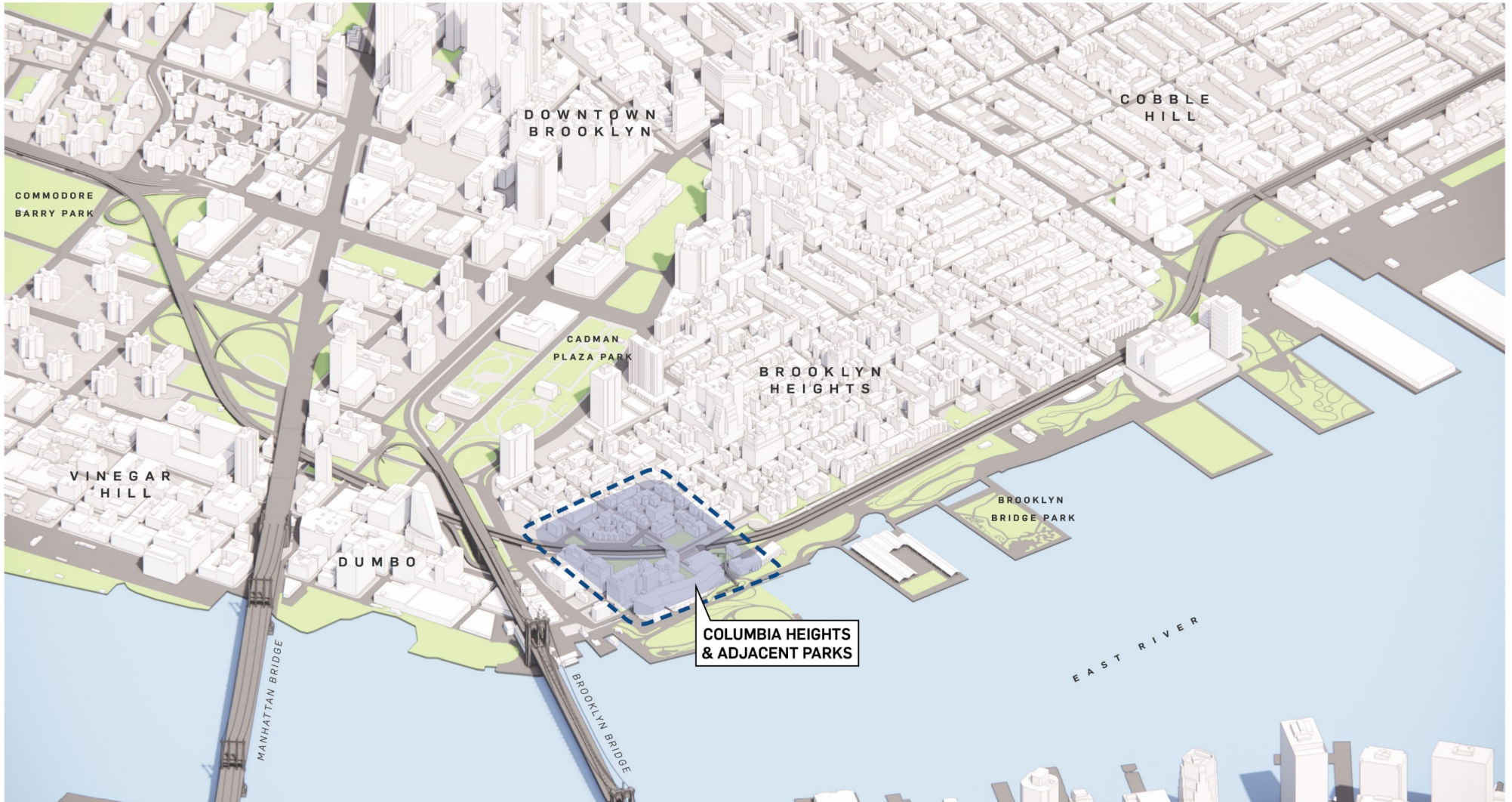
The Terraces



The Lookout

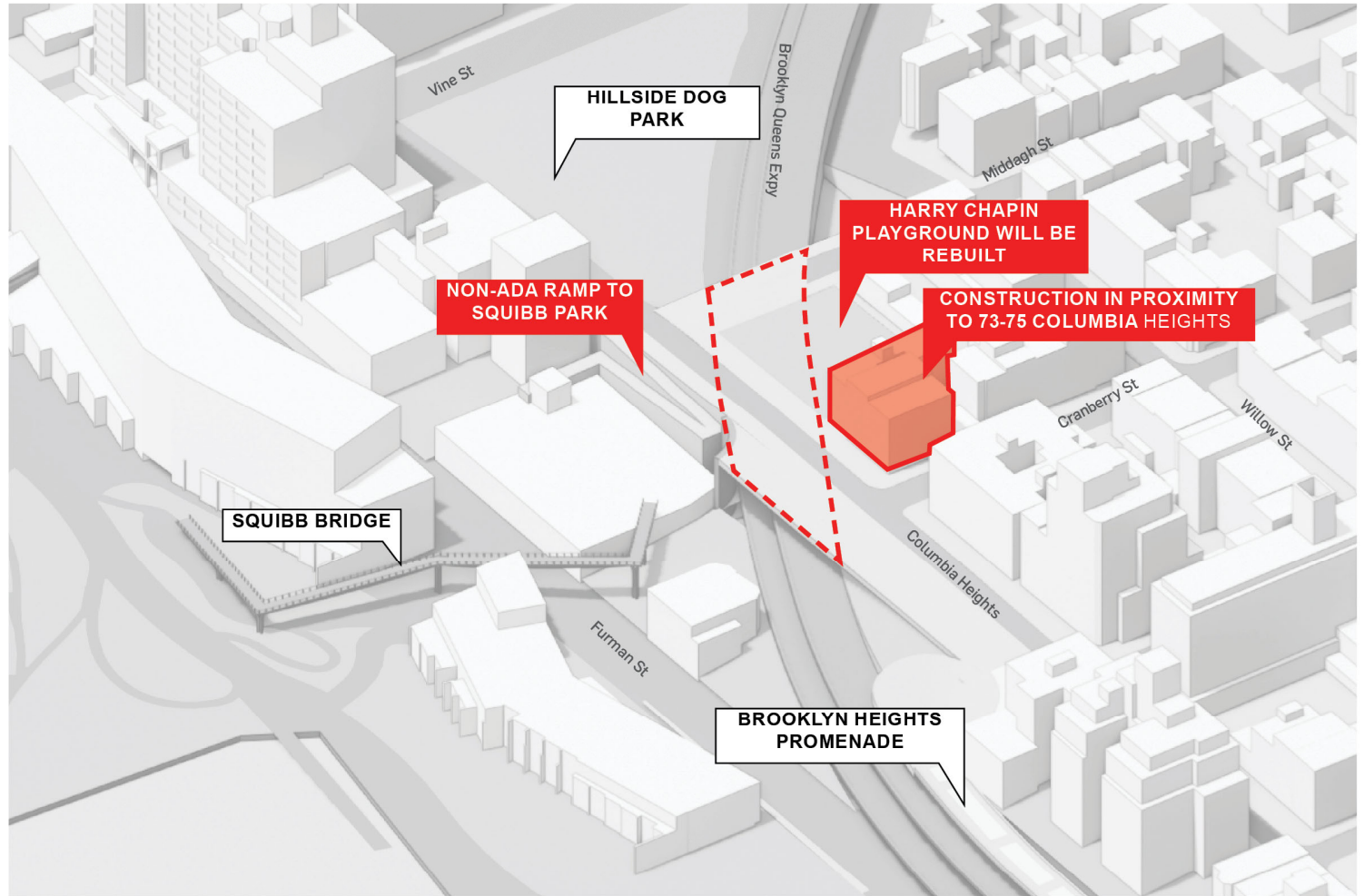


Columbia Heights & Adjacent Parks

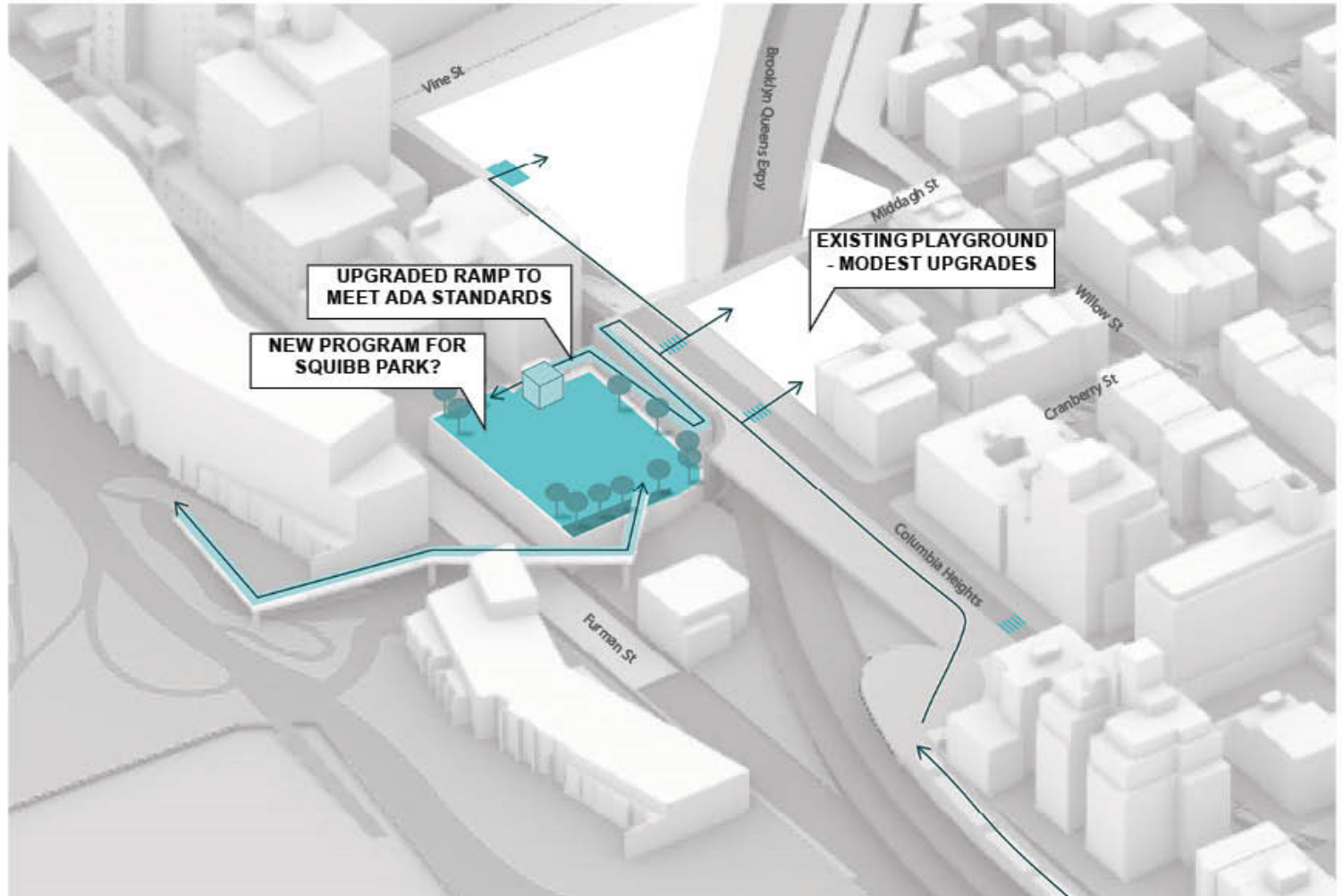


Columbia Heights

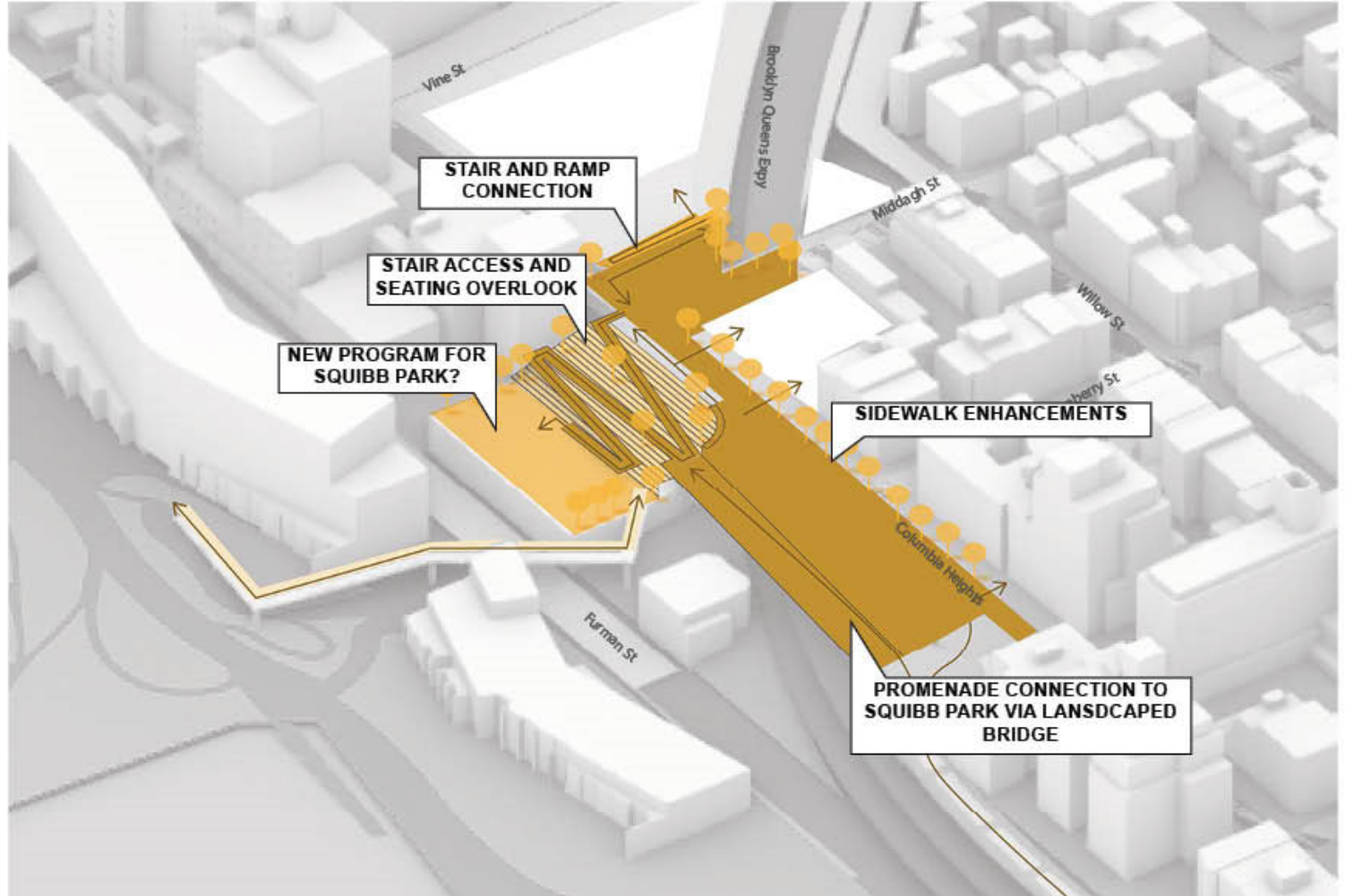
Existing Conditions



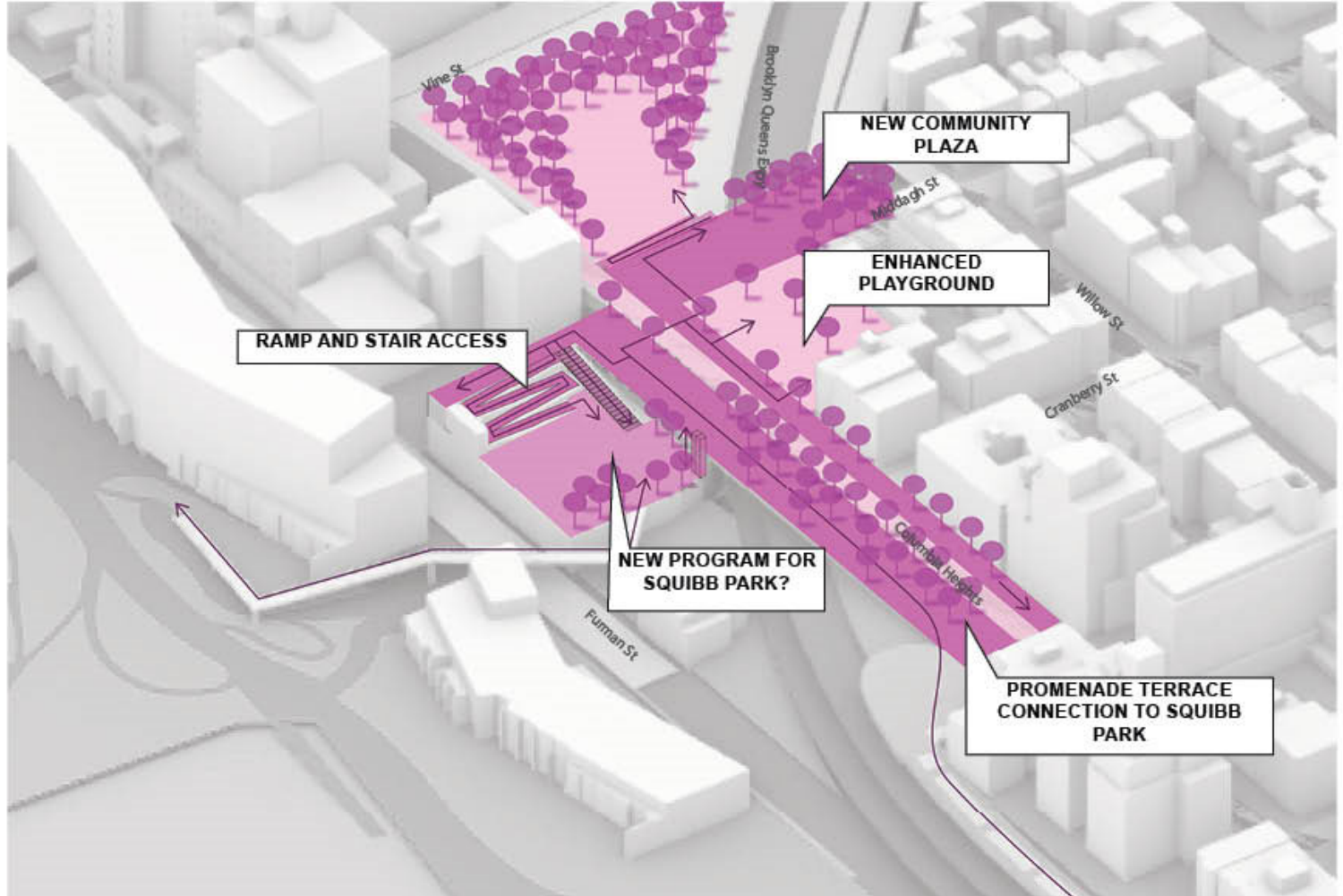
Columbia Heights Concept 1



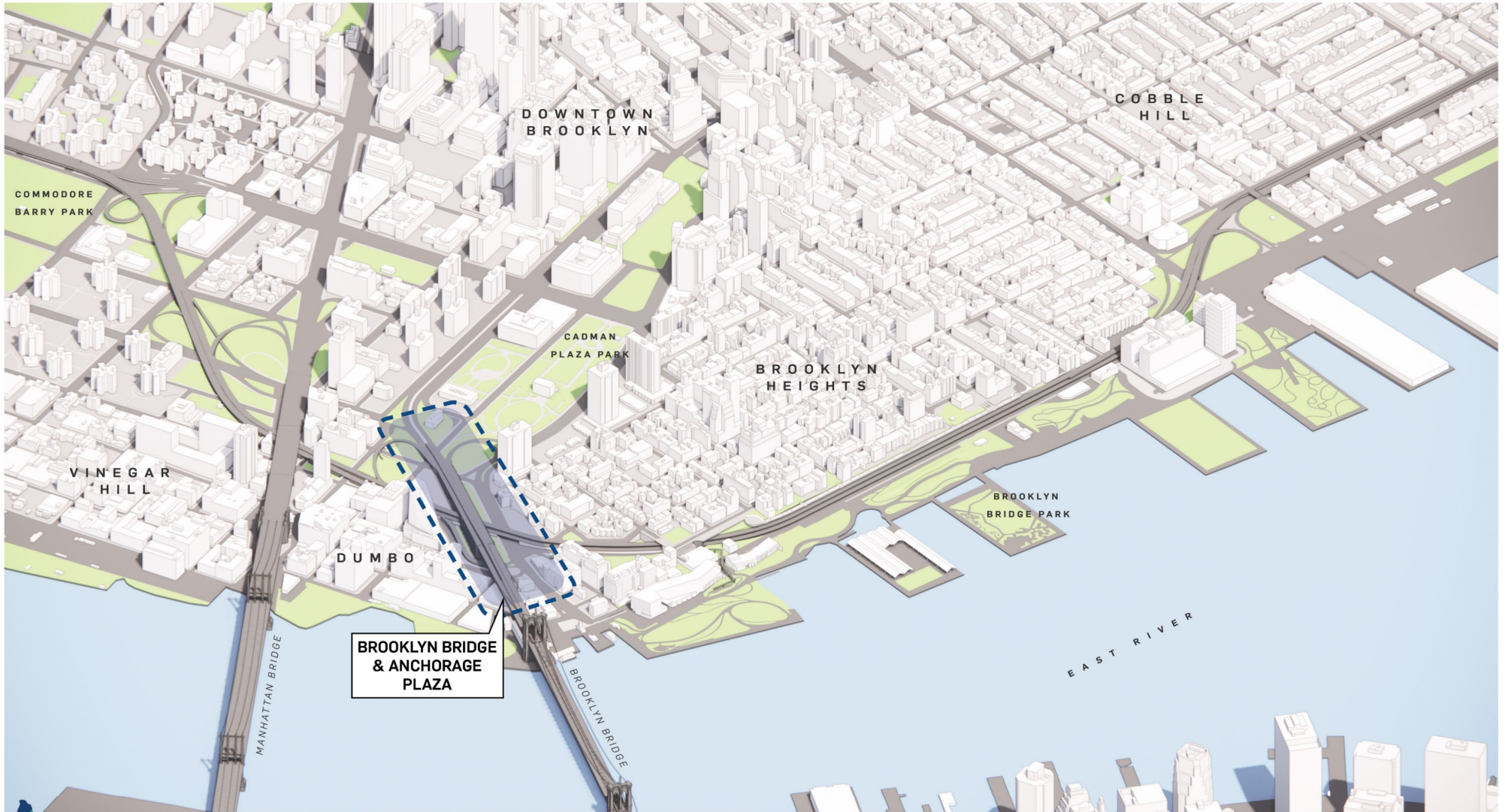
Columbia Heights Concept 2



Columbia Heights Concept 3



Old Fulton, Brooklyn Bridge & Anchorage Plaza

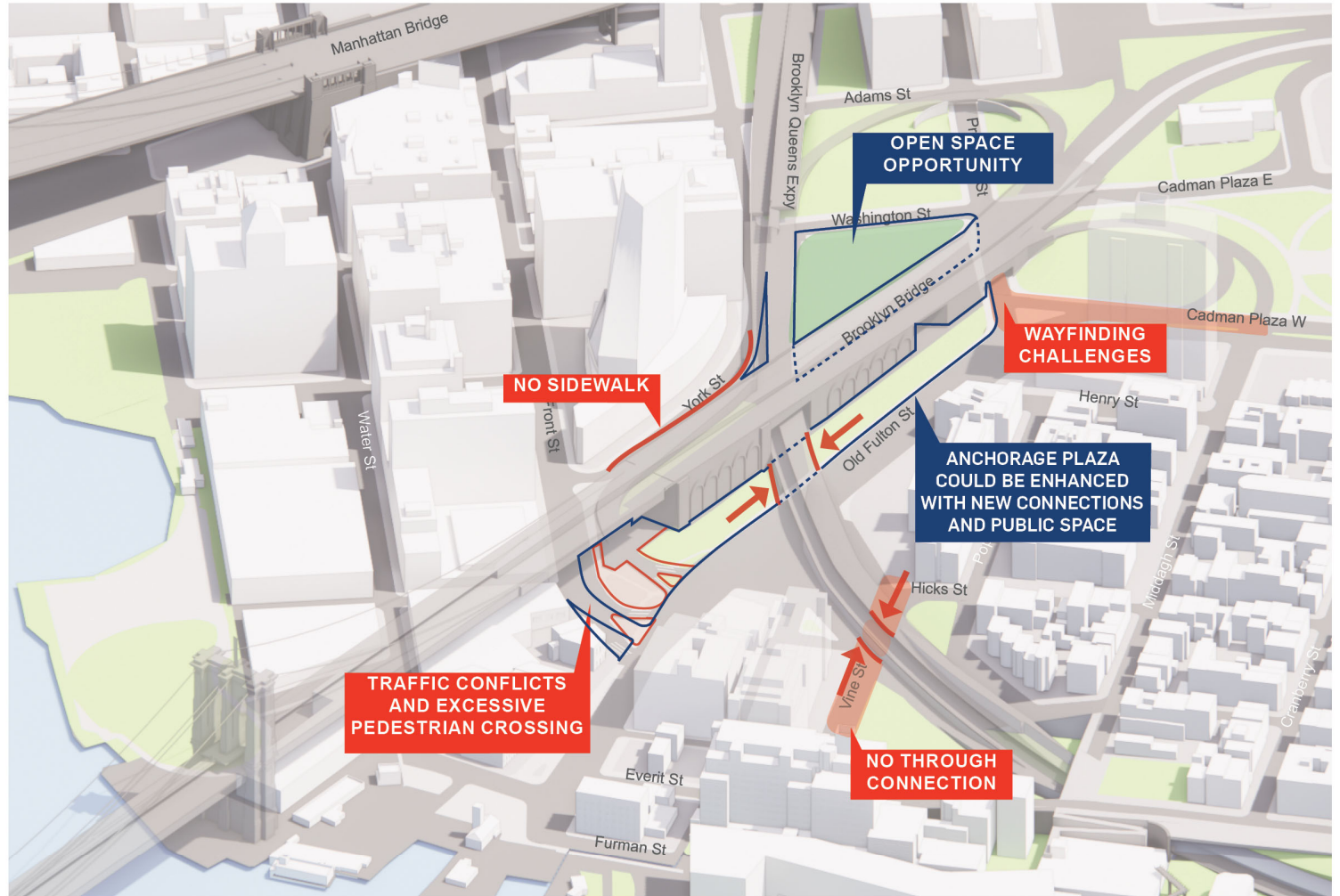


Old Fulton, Brooklyn Bridge & Anchorage Plaza

What We've Heard








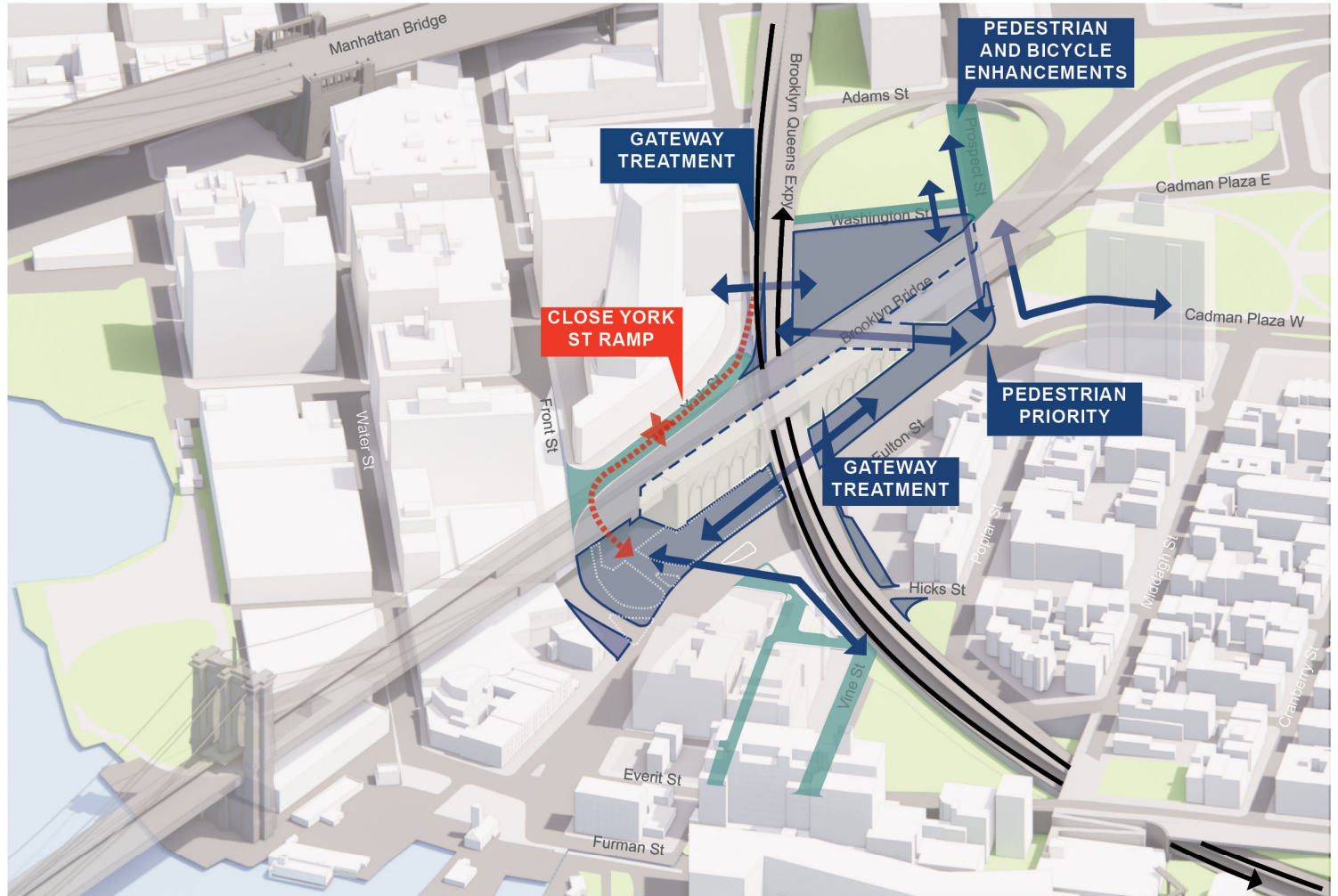
- ← Vehicular Circulation
- ← Existing Cyclist Circulation



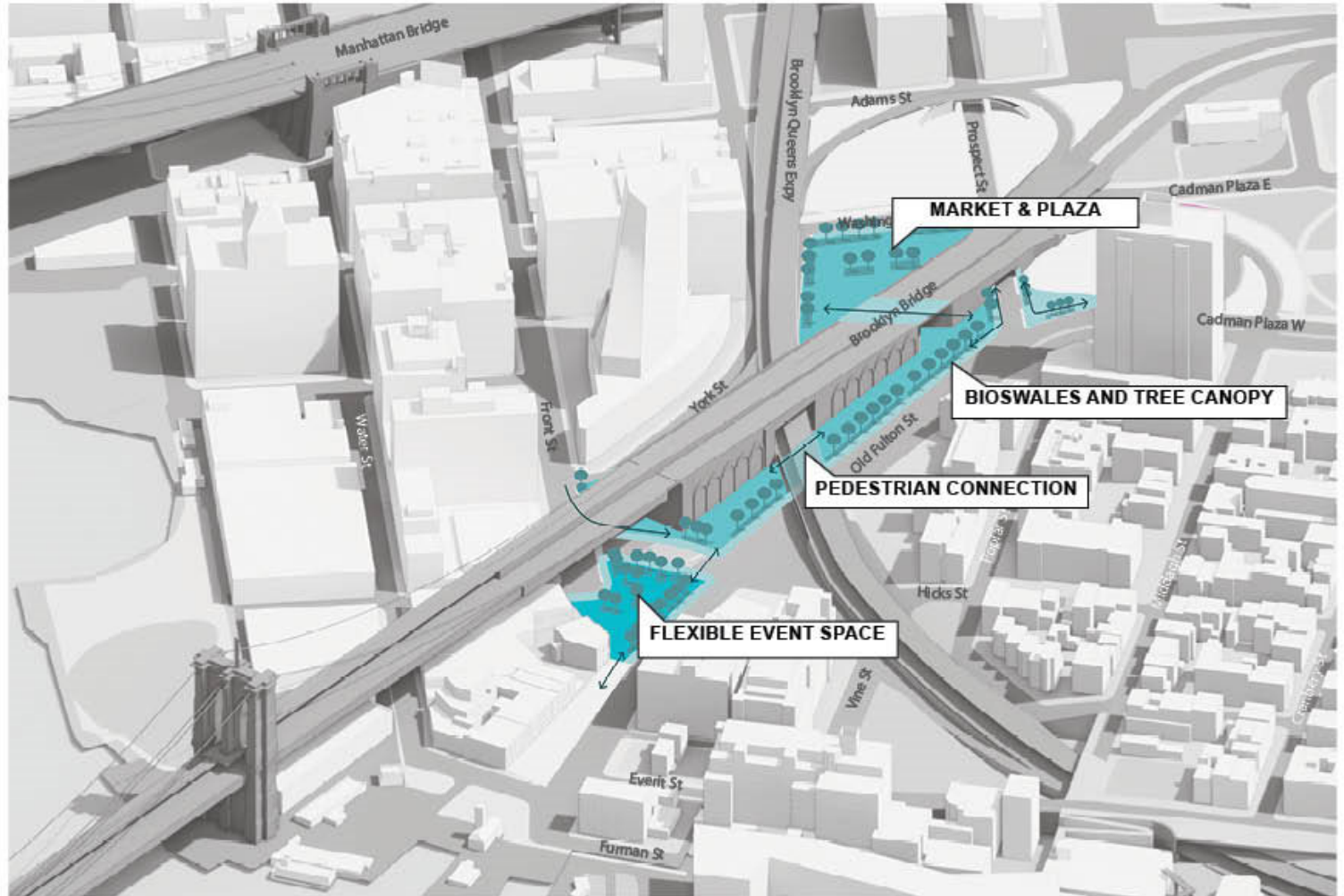
Old Fulton, Brooklyn Bridge & Anchorage Plaza



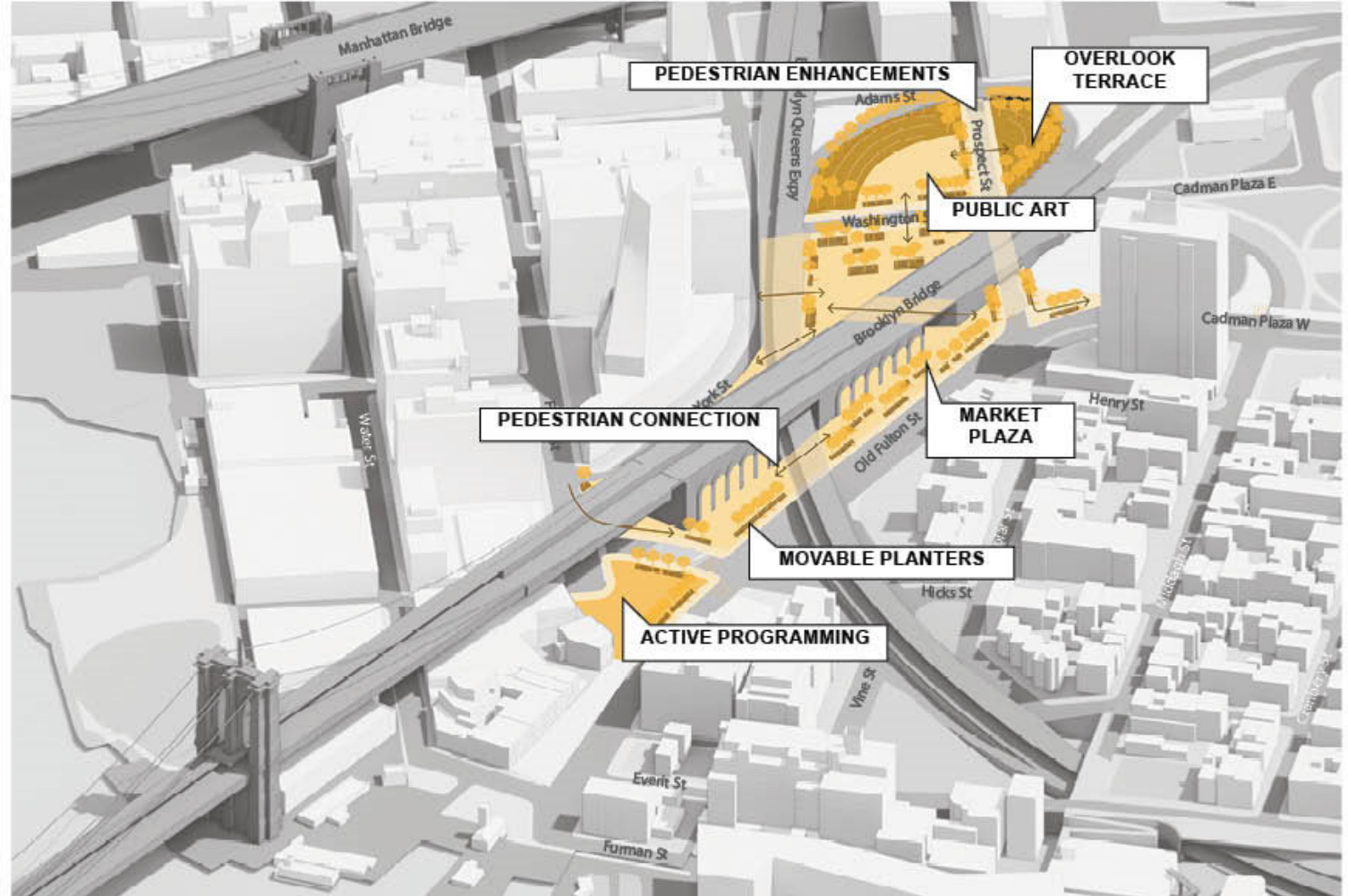
-  Vehicular Circulation
-  Removed Vehicular Circulation
-  Proposed Pedestrian Priority
-  Proposed Pedestrian Connections
-  Pedestrian and Bicycle Enhancements



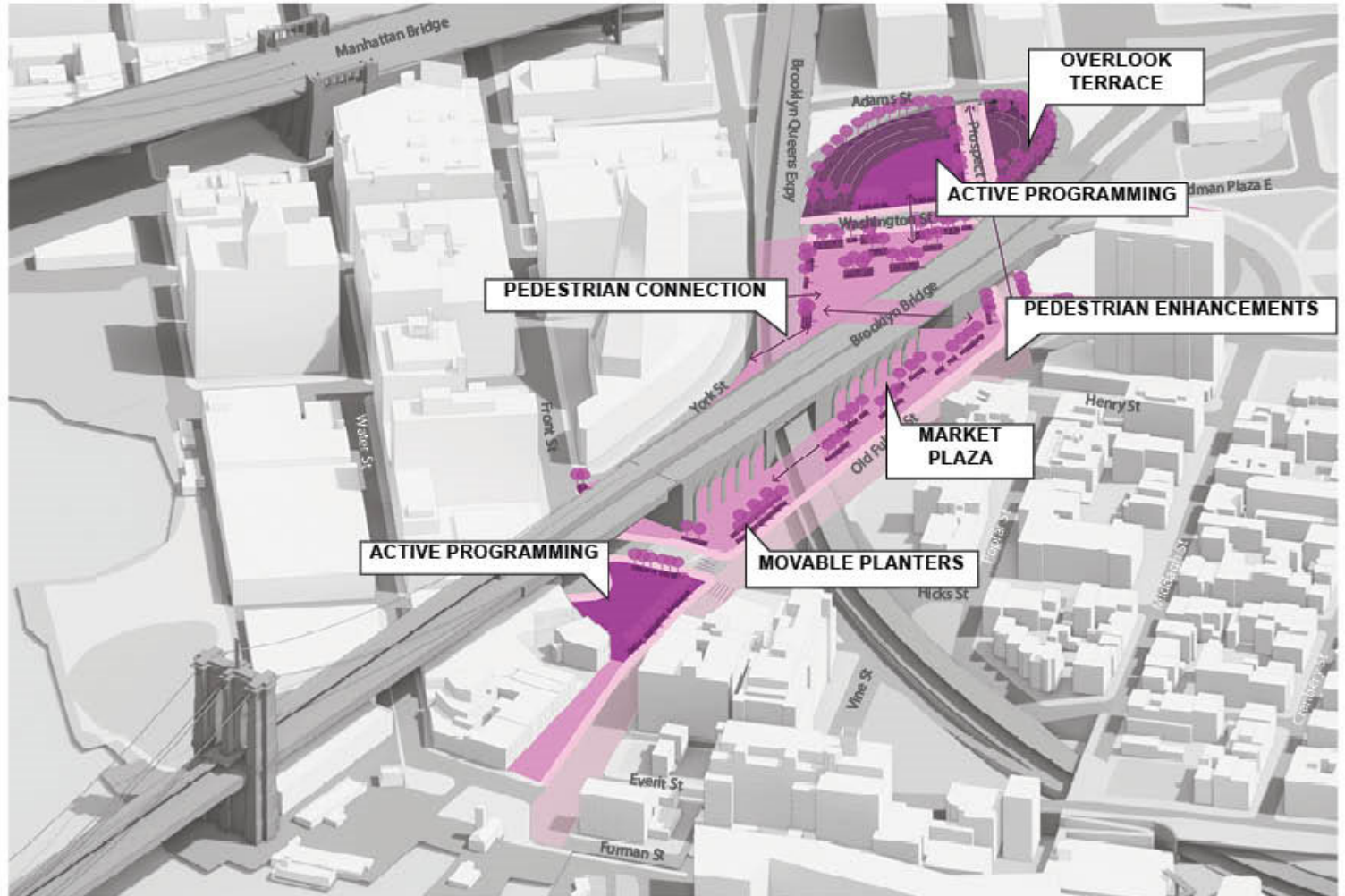
Old Fulton, Brooklyn Bridge & Anchorage Plaza Concept 1



Old Fulton, Brooklyn Bridge & Anchorage Plaza Concept 2



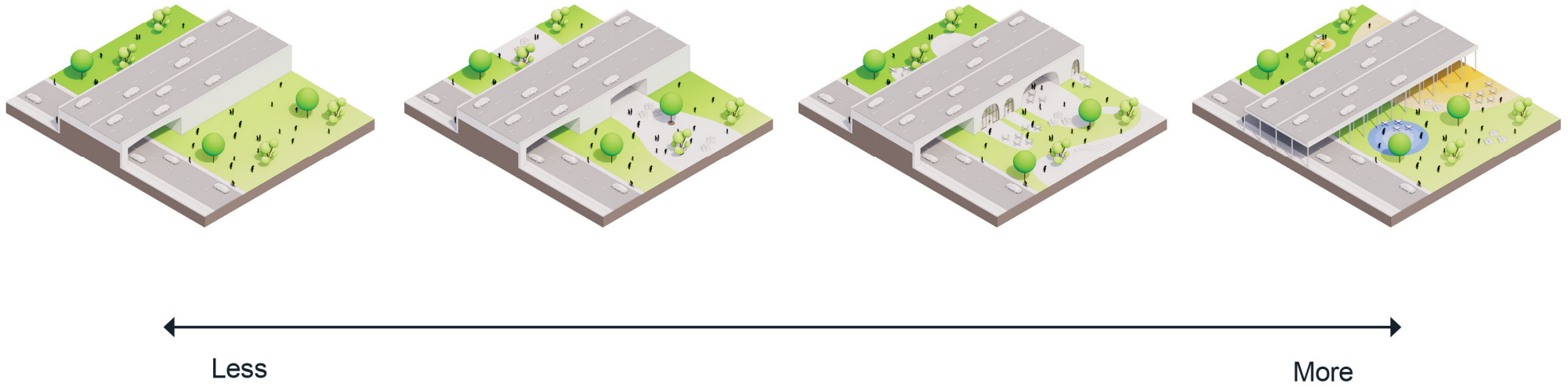
Old Fulton, Brooklyn Bridge & Anchorage Plaza Concept 3



Potential Areas for Porosity Below BQE



Porosity Spectrum



Dumbo & Manhattan Bridge Parks

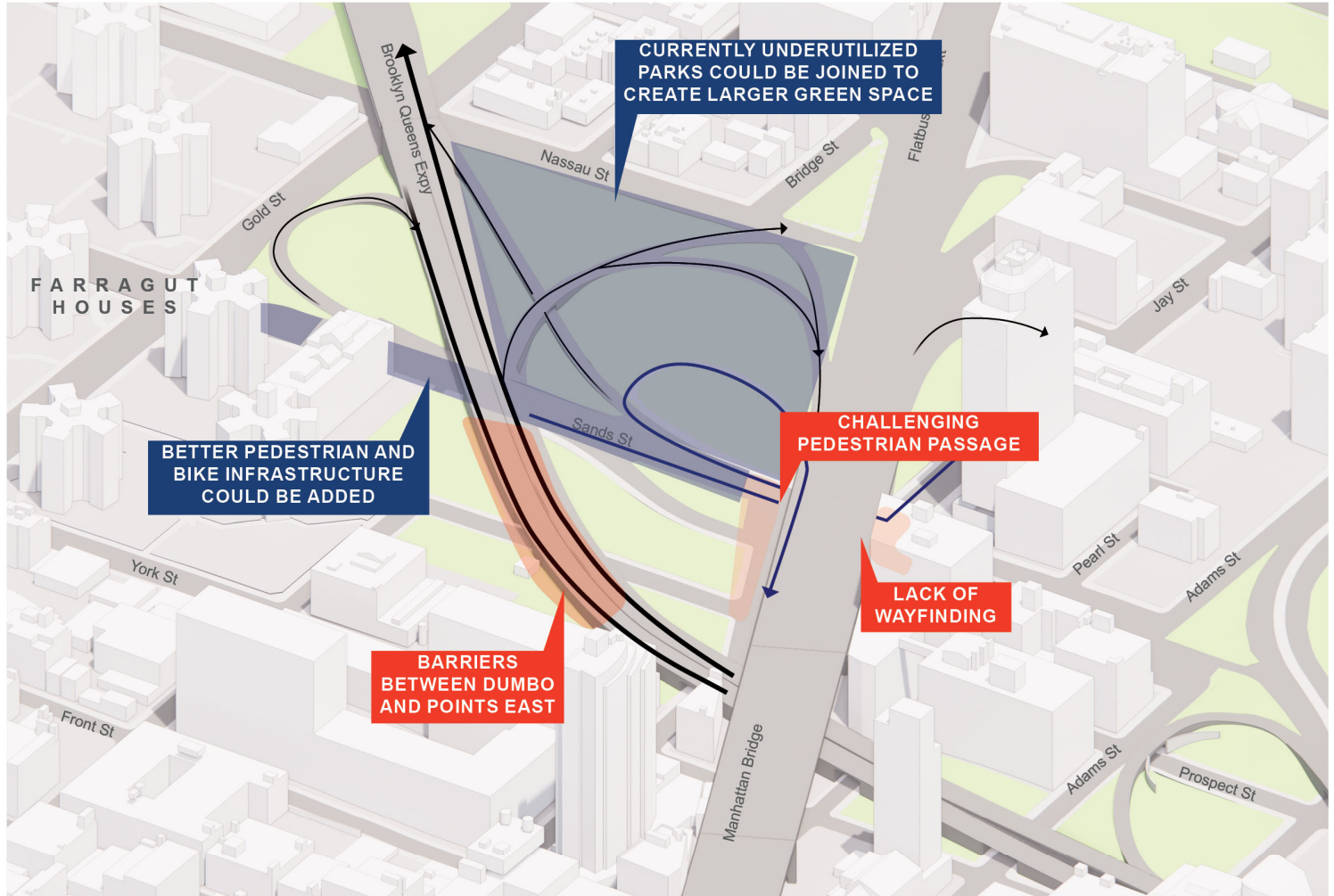


Dumbo and Manhattan Bridge Park

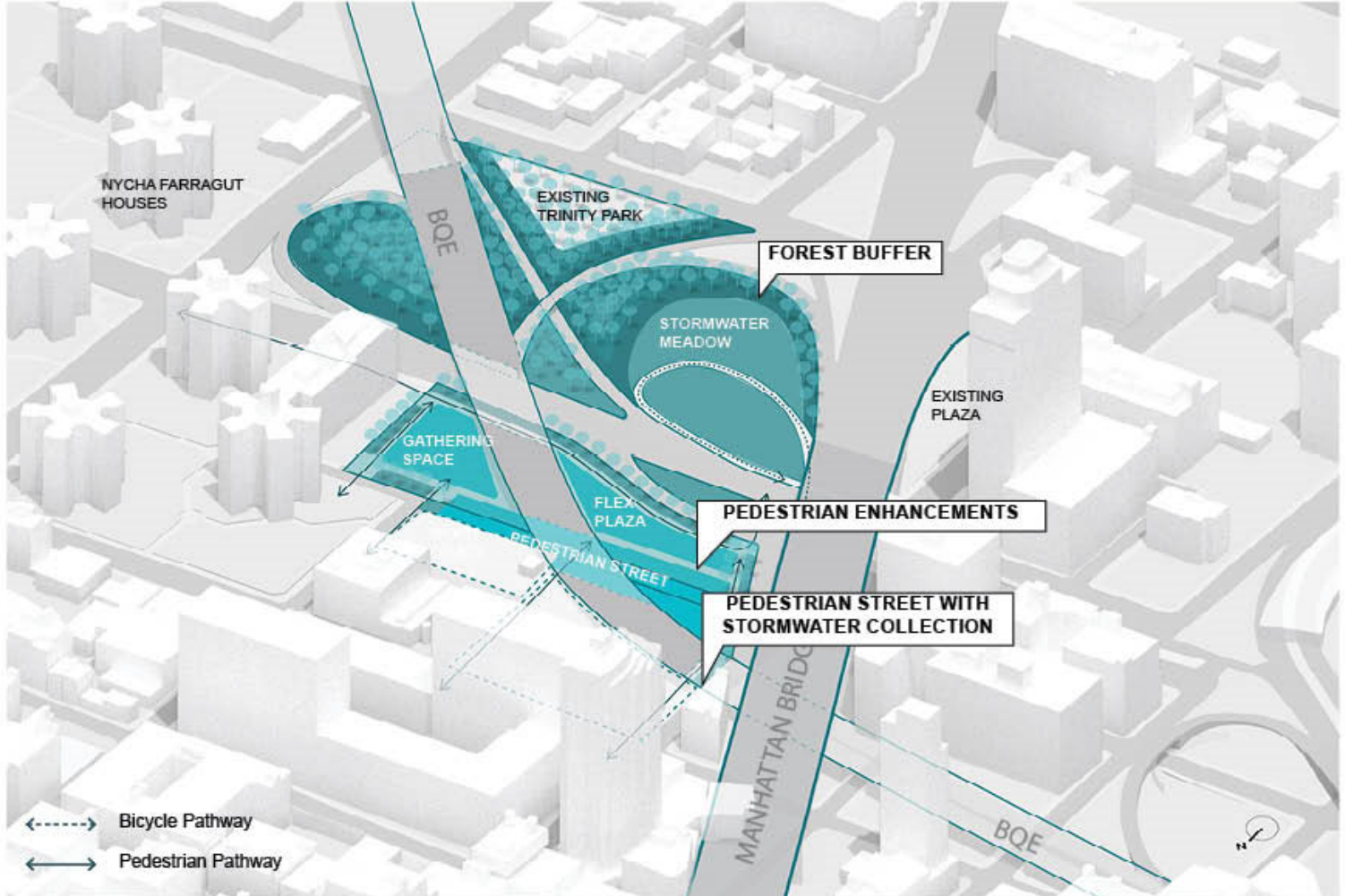
What We've Heard



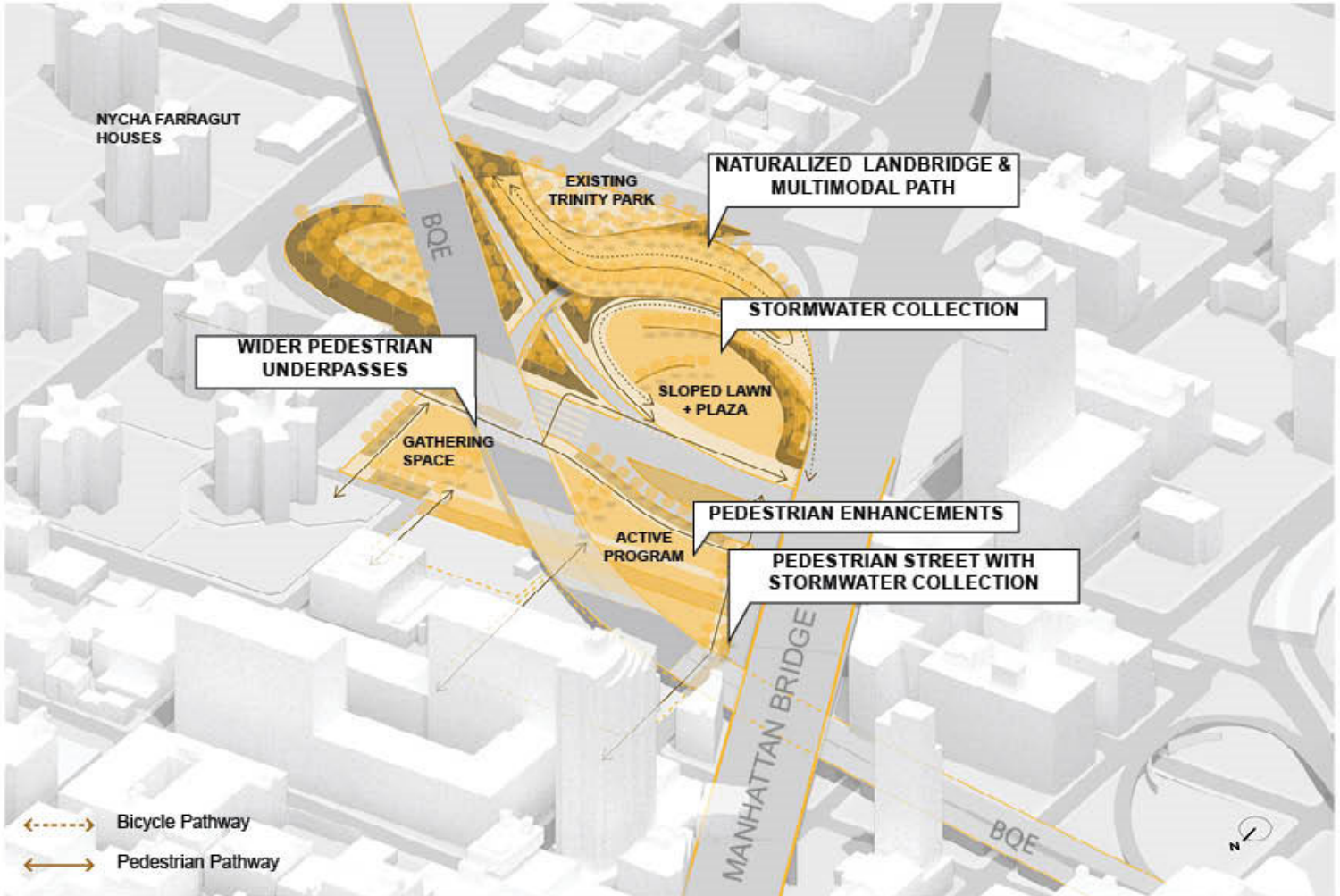
- ← Vehicular Circulation
- ← Existing Cyclist Circulation



Manhattan Bridge Parks Concept 1



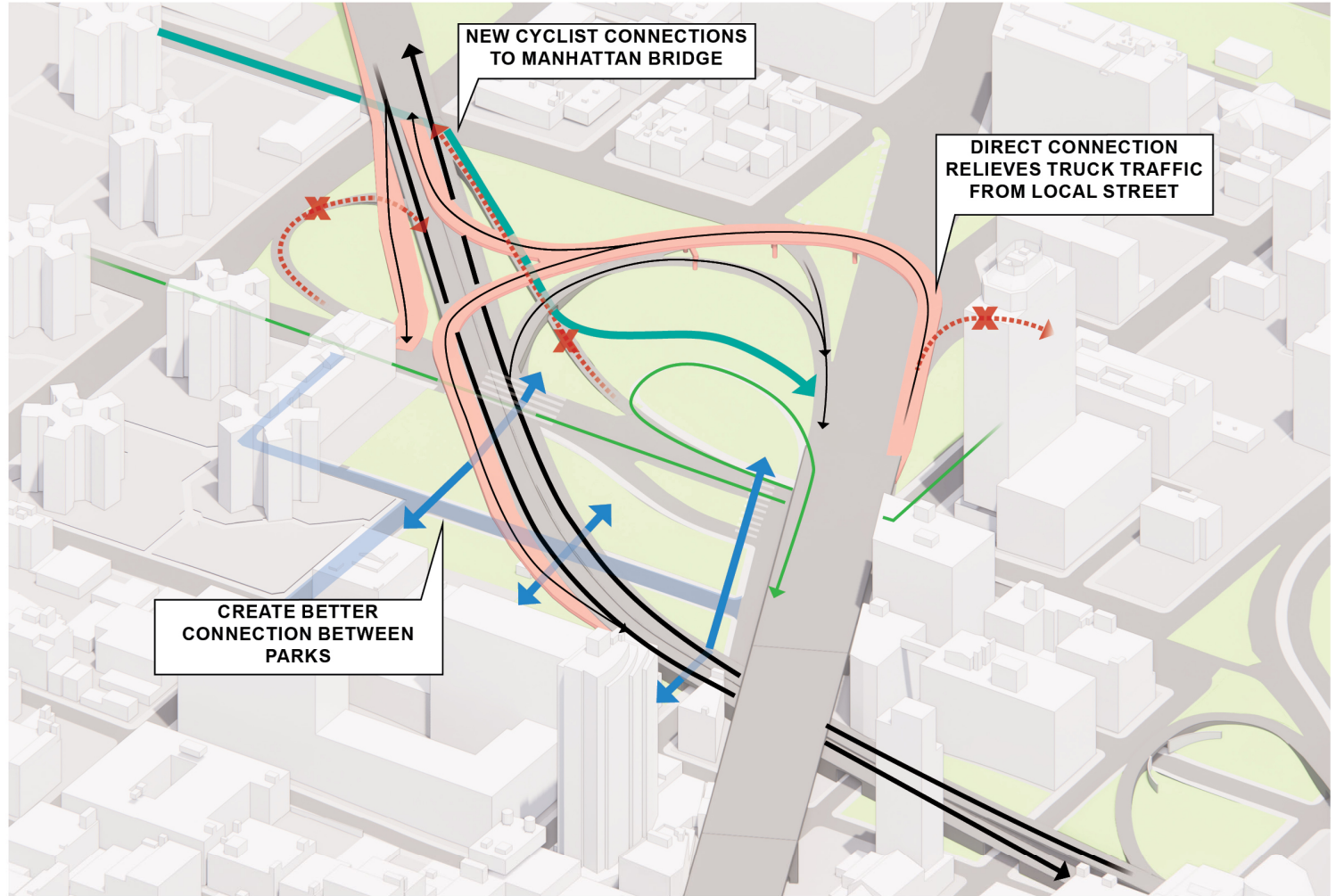
Manhattan Bridge Parks Concept 2



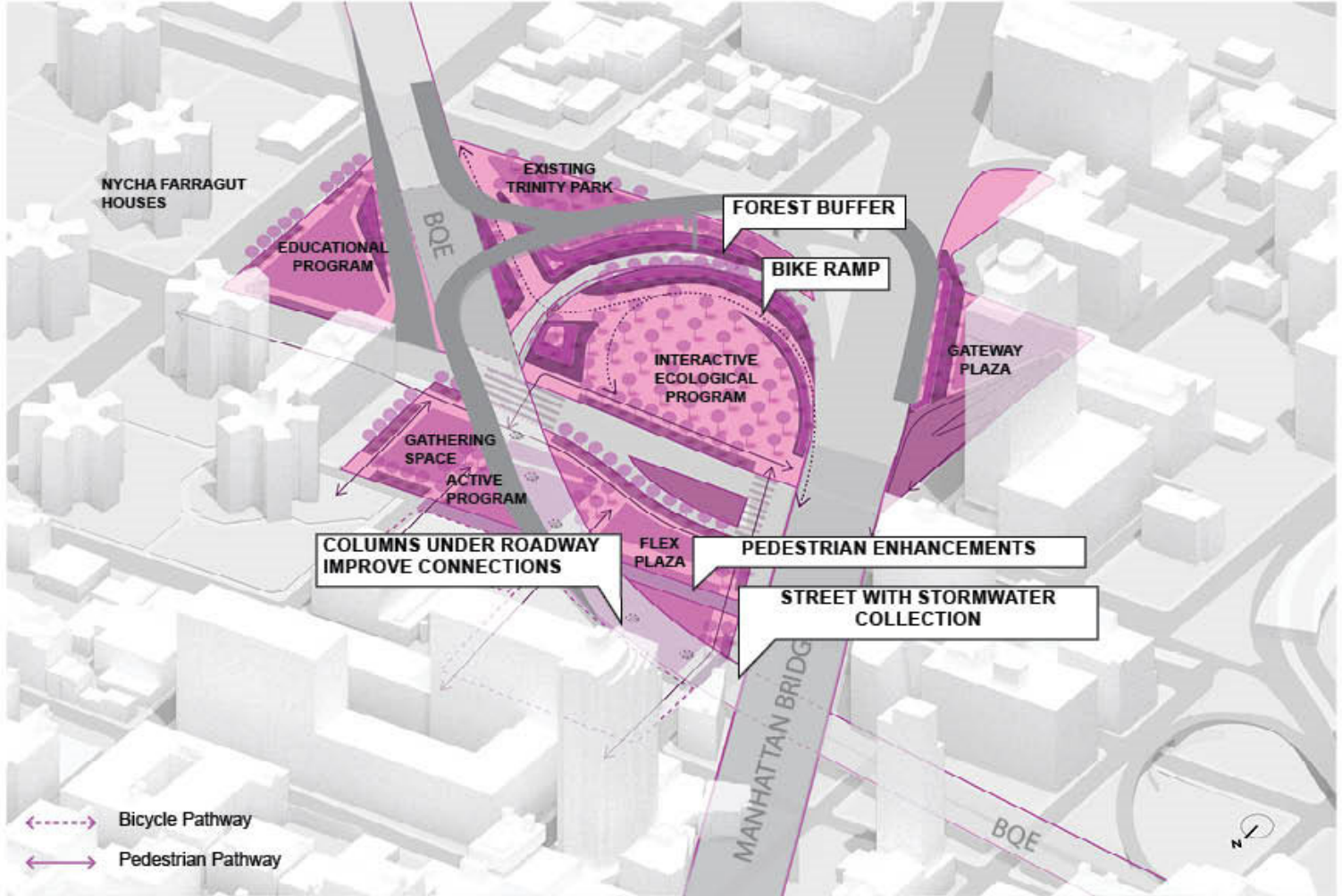
Manhattan Bridge Parks Concept 2 - Vehicular Bridge



- ← Vehicular Circulation
- ← Existing Cyclist Circulation
- ← Proposed Cyclist Connection
- ↔ Proposed Pedestrian Connections
- Proposed Vehicular Bridge
- Proposed Pedestrian Priority
- ←X- Removed Vehicular Circulation



Manhattan Bridge Parks Concept 3



Q&A

5

Breakout Rooms

6

Breakout Groups Agenda

Explore design concepts by sub-area in greater detail

Provide input on each concept, including strengths, weaknesses, and additional ideas or opportunities

Discuss your priorities and questions for BQE Central overall



Workshop Community Agreements

Be on camera and audio if possible

Mute when you are not speaking

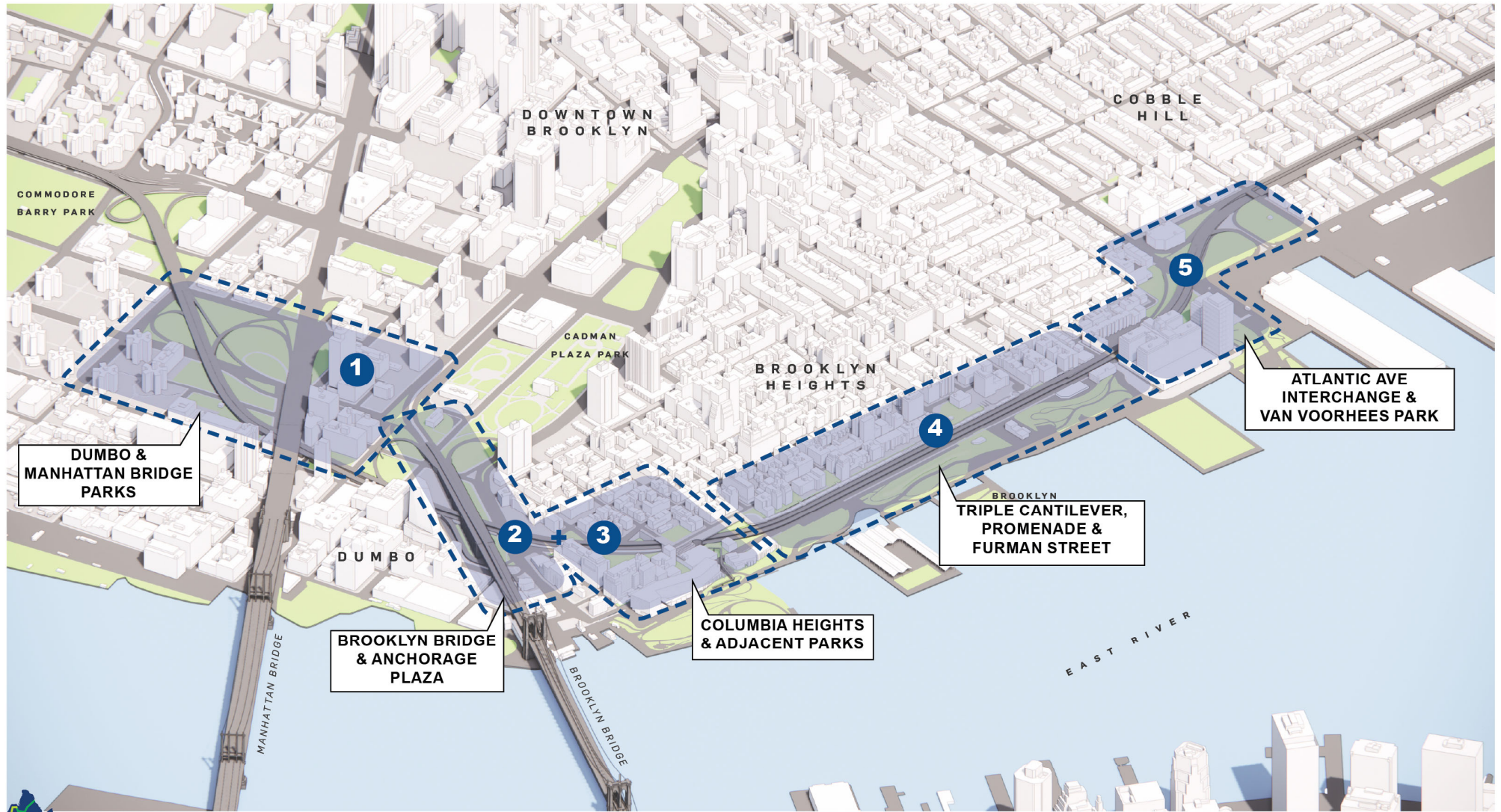
Share the air-time – make room for everyone to participate

Respect the diverse viewpoints and experiences in the group

Switch groups as much as you wish (15 min. recommended)



Breakout Group Areas



Breakout Rooms Share-Out

7

Closing

8

Thank you!

To provide additional feedback on BQE Central,
please visit <https://bqevision.com/survey>

Upcoming BQE Central Workshops

BQE Central Workshop 3 (virtual)
Tuesday, February 28, 2023
6:30 PM to 8:30 PM

BQE Central Workshop 3 (in-person)
Thursday, March 2, 2023
6:30 PM to 8:30 PM



nyc.gov/bqe

Appendix

Overview



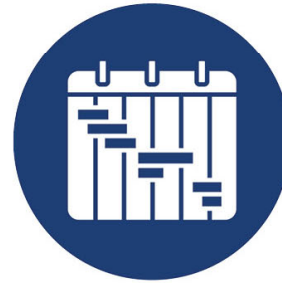
**Structural Condition
& Safety**



Project Limits



Grant Timeline



**Environmental
Process**



Budget

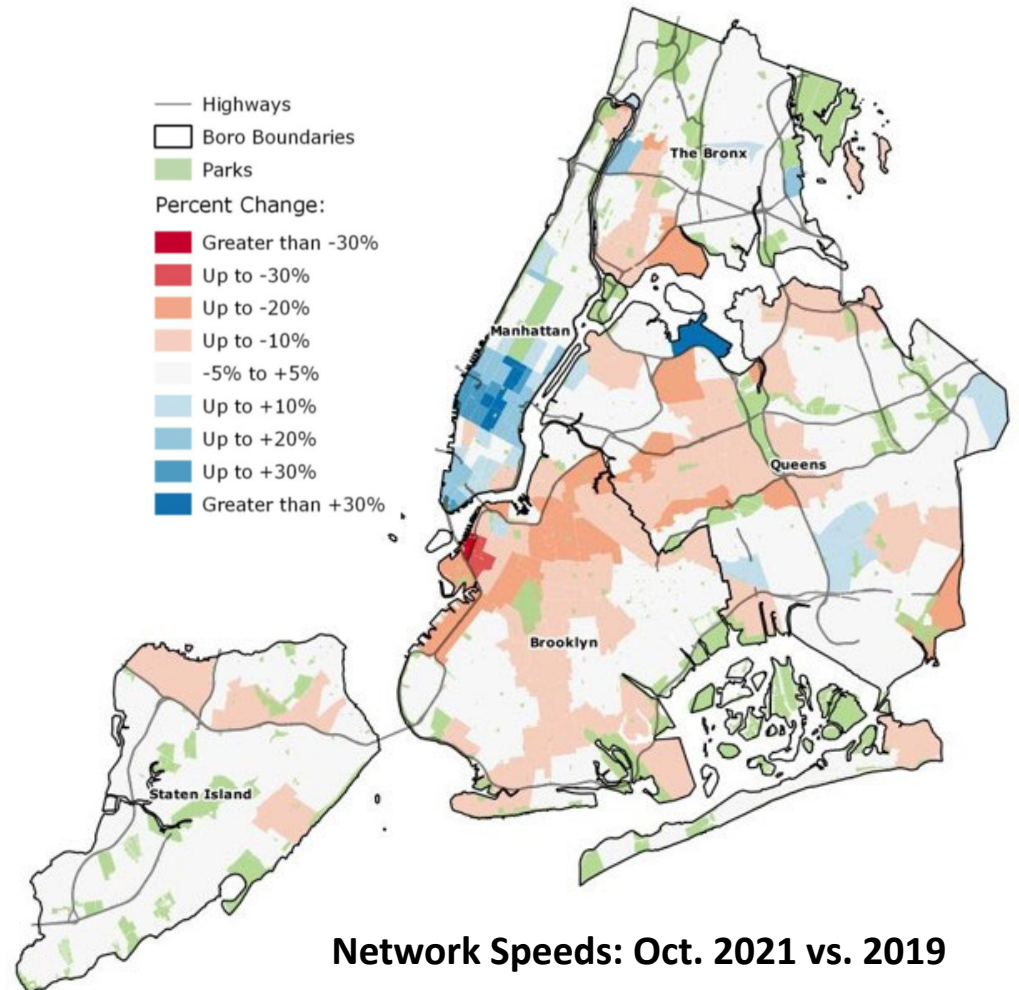


Constructability

Impacts of Two-lane Conversion

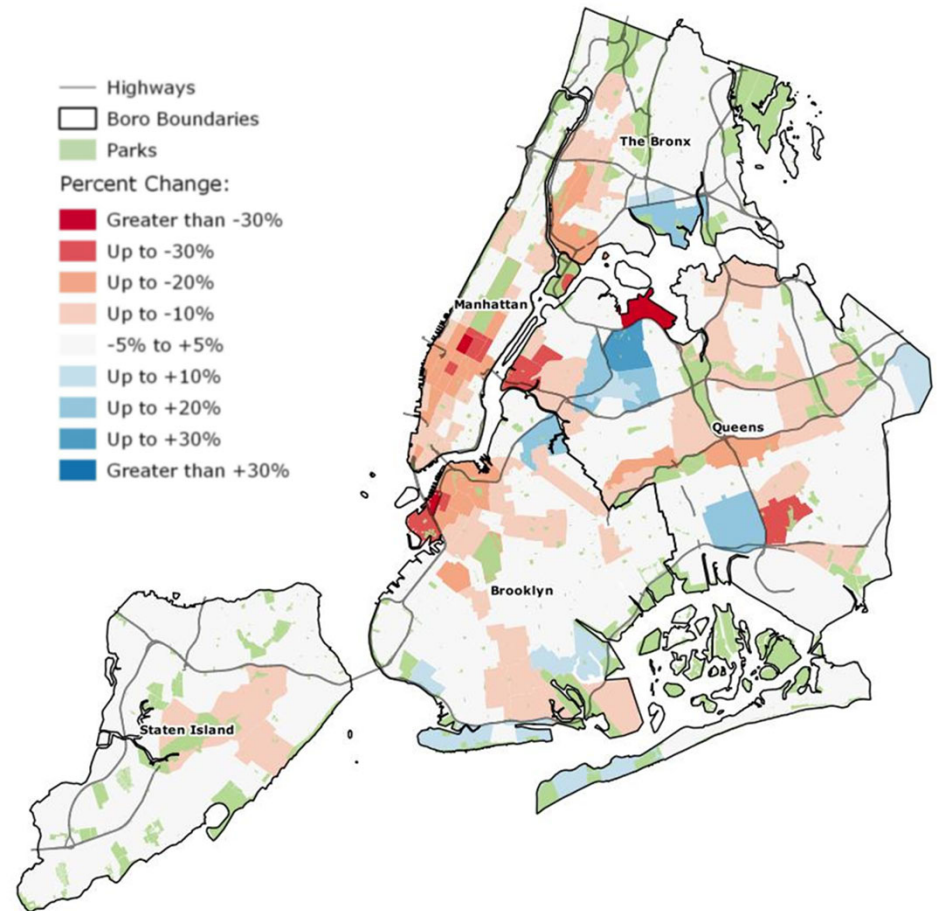
Effect of Two-lane Conversion of Triple Cantilever

- After the two-lane conversion, comparative 2021 and 2022 DOT data show significantly decreased traffic speeds in all surrounding neighborhoods – some up to 30-50% – including in neighborhoods not adjacent to BQE Central.
- Bus speeds on local routes, including the B61, B63, and B57 declined by 5-10% compared to 2019.



Effect of Two-lane Conversion of Triple Cantilever

- We've witnessed and heard repeatedly from impacted communities that traffic has increased notably on local streets that were not designed to safely manage this volume of vehicles, especially trucks.
- This is not safe or sustainable for our neighborhoods, and while we pursue policy options to incentivize reduced car and truck travel, we need to keep trucks off our local roads.



Network Speeds: May 2022 vs. 2021

Additional Considerations

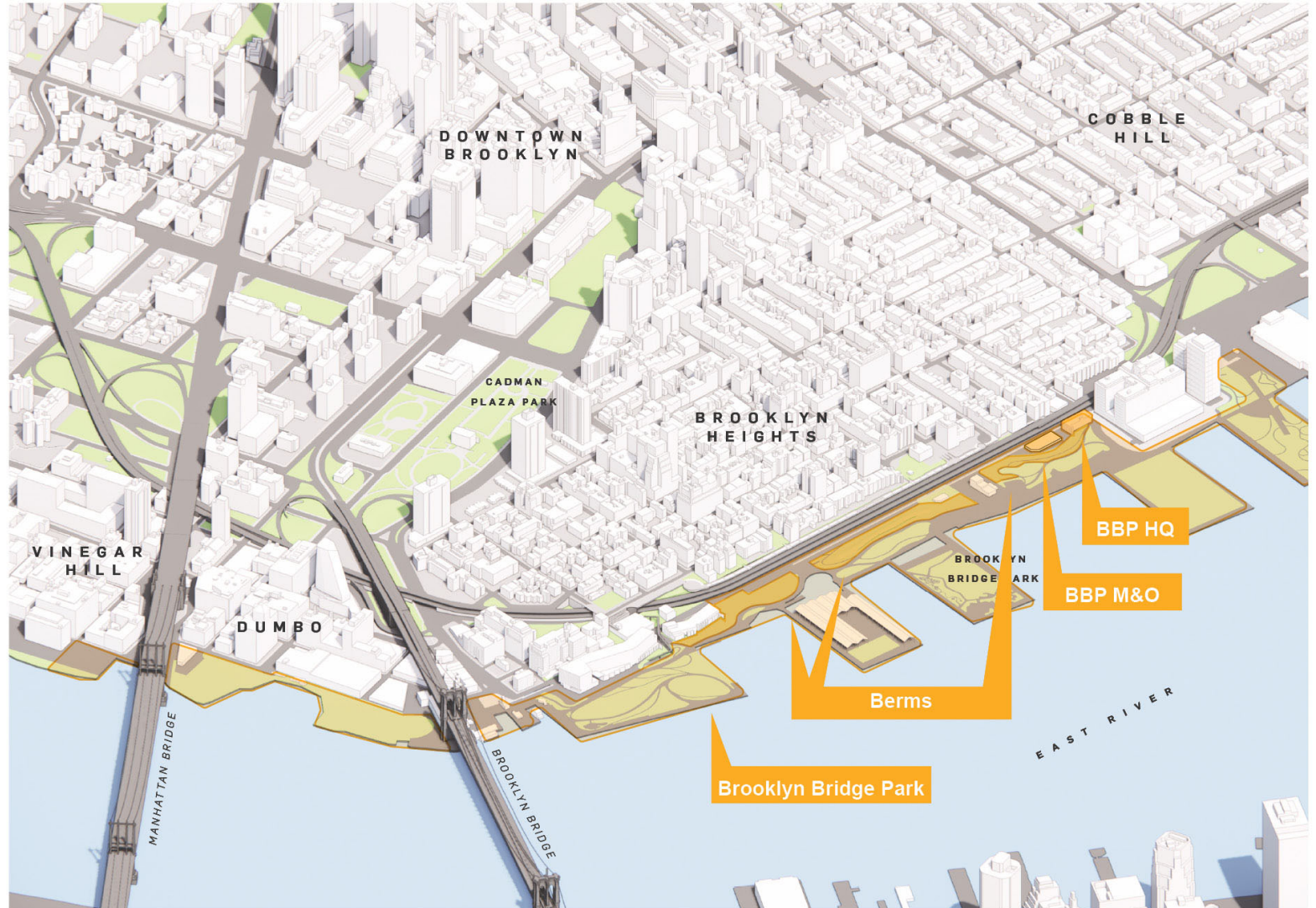
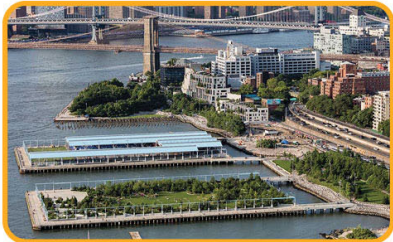
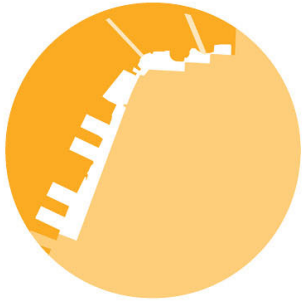
Effects on Public Property

Moved slide to Appendix to reduce presentation length



Brooklyn Bridge Park

Moved slide to Appendix to reduce presentation length



Effects on Private Property

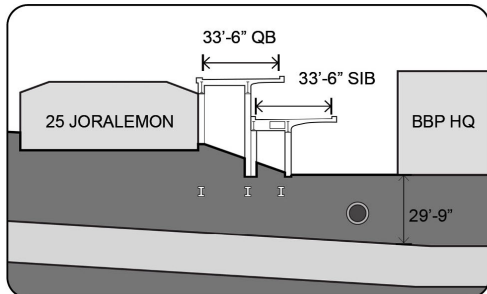
Moved slide to Appendix to reduce presentation length, graphic incorrectly identifies some properties as effected.



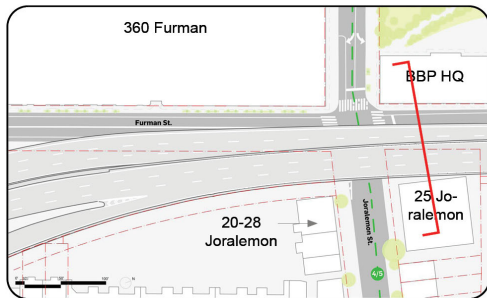
Considerations

Joralemon & Furman St

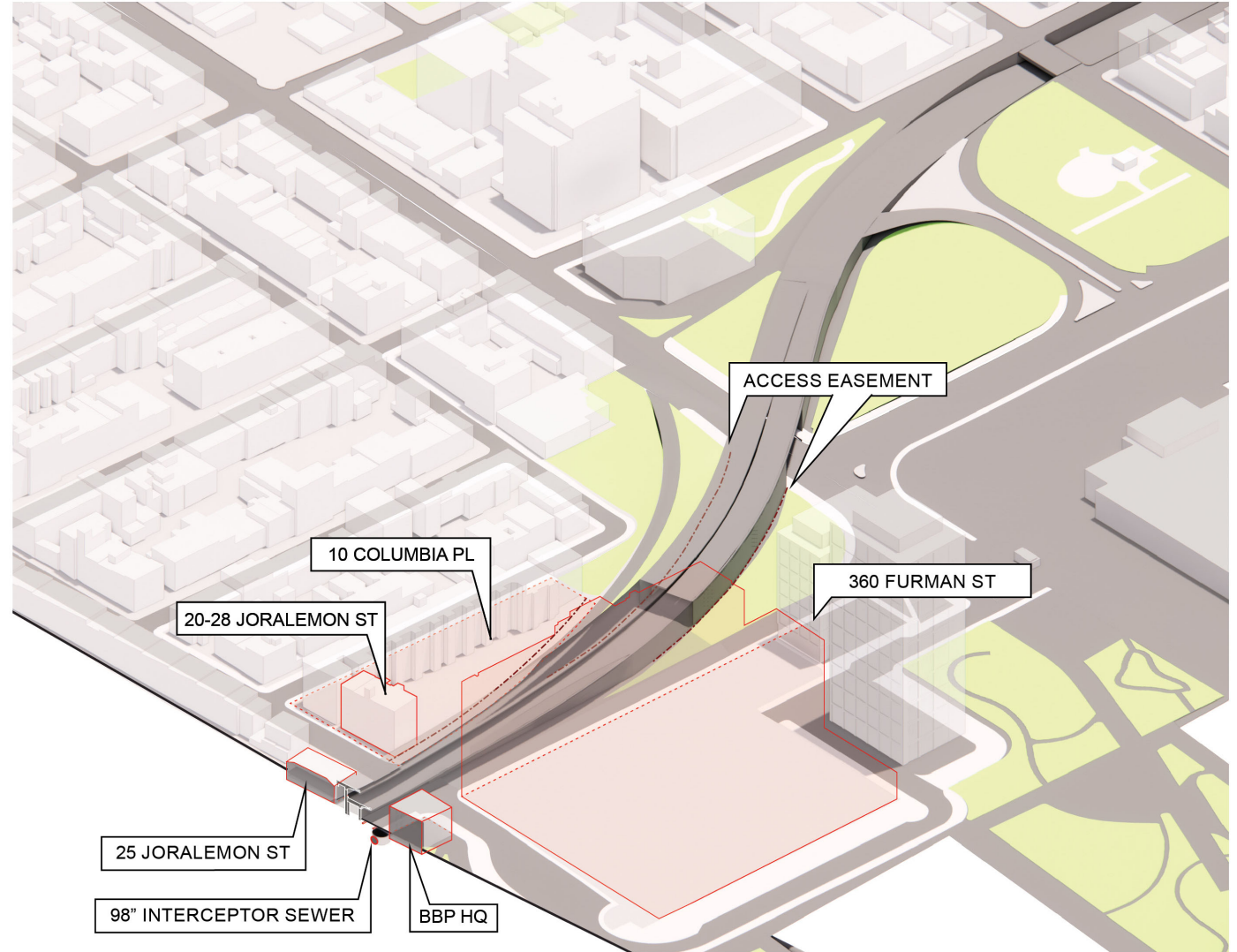
Graphic is inaccurate, incomplete and confusing, slide eliminated



Section

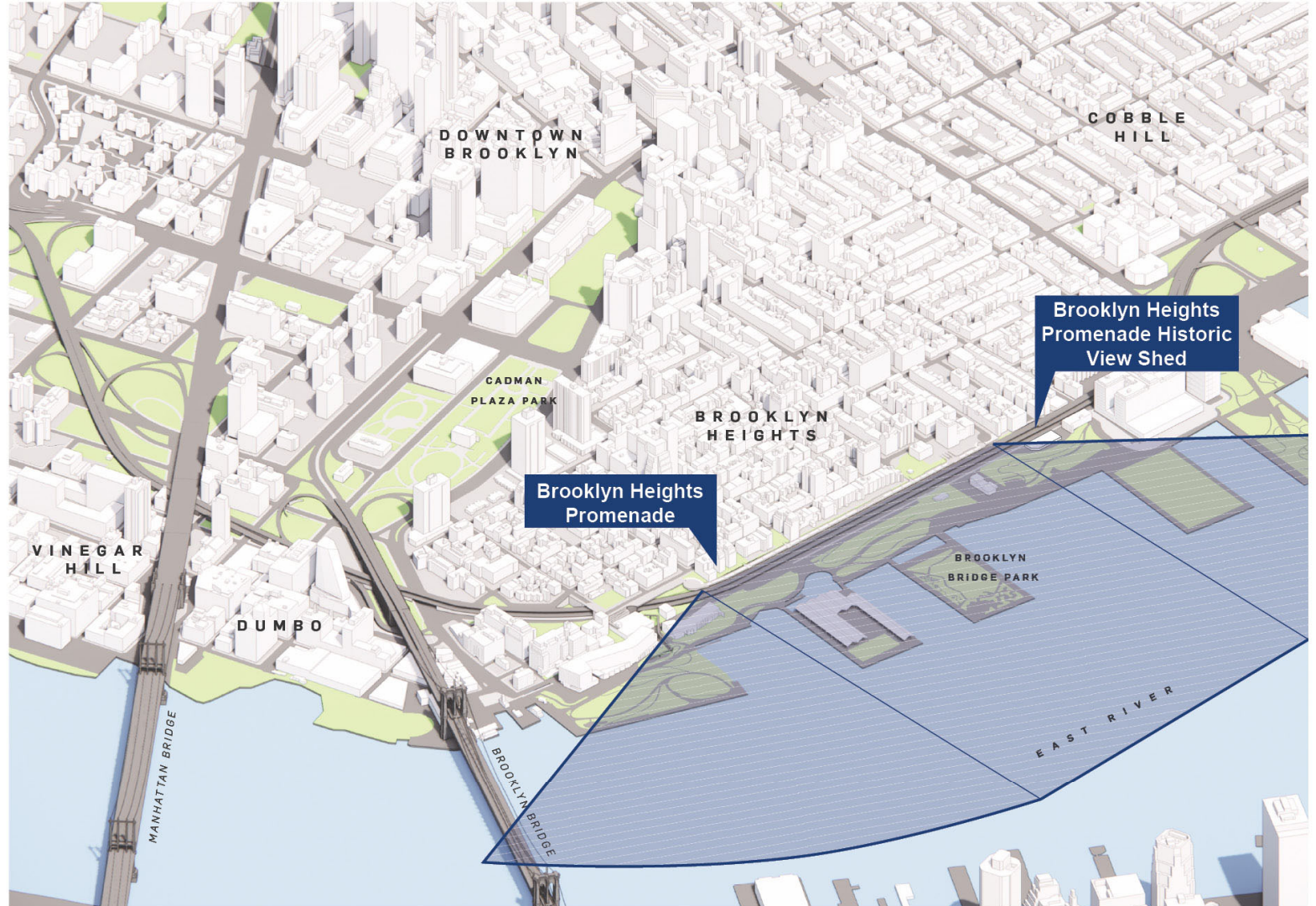


Plan



Promenade Configuration & View Shed

Moved slide to Appendix to reduce presentation length



Fully or Partially Replace Retaining Wall

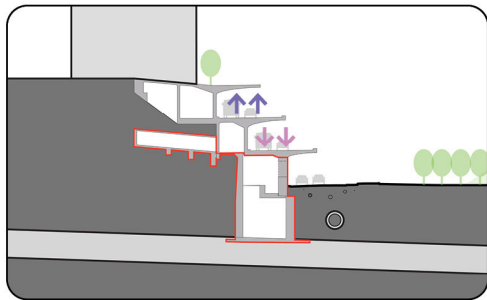
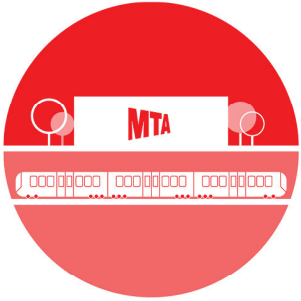
Moved slide to Appendix to reduce presentation length



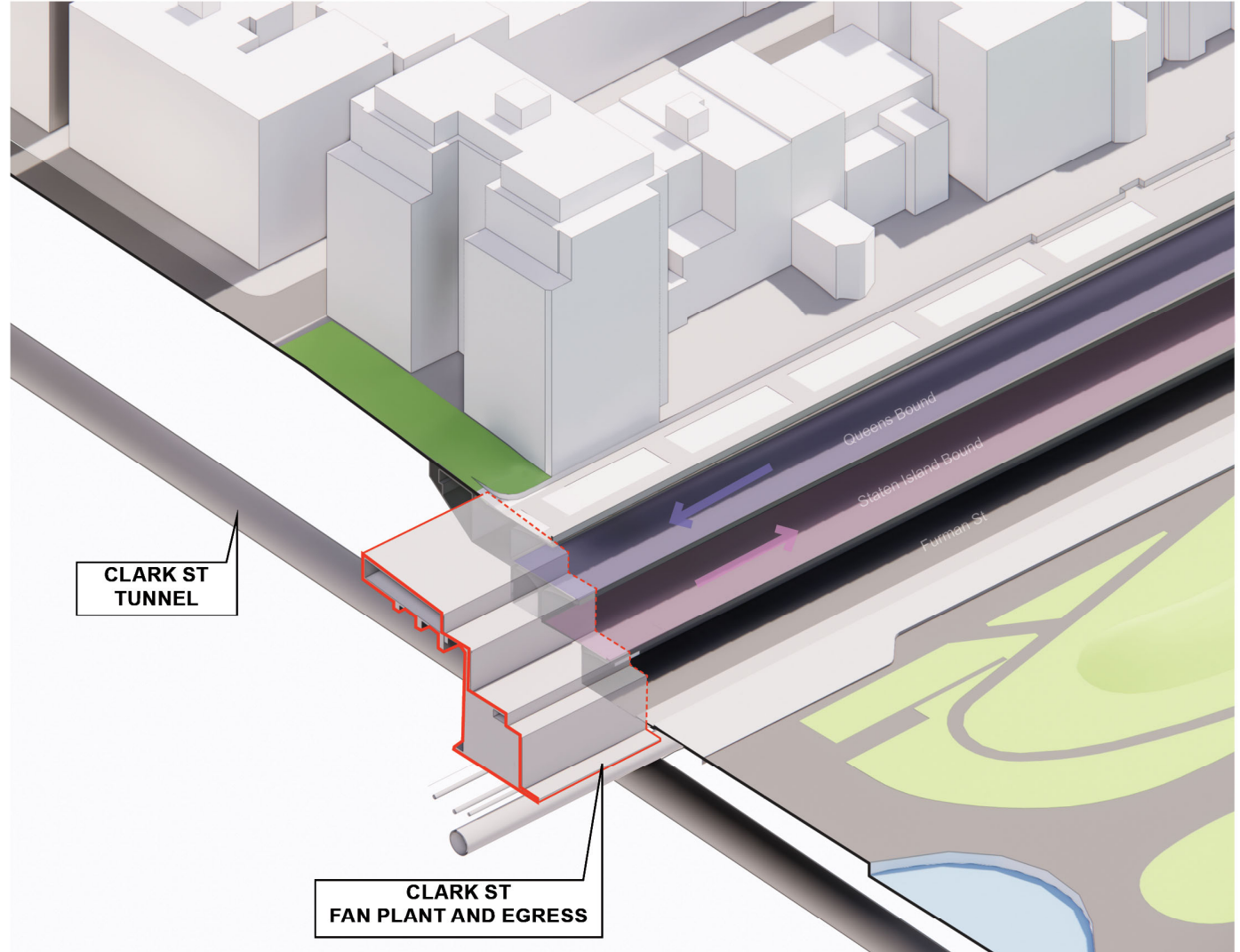
Considerations

MTA Facilities at Clark St

Moved slide to Appendix to reduce presentation length. Graphics are inaccurate and incomplete.



Section



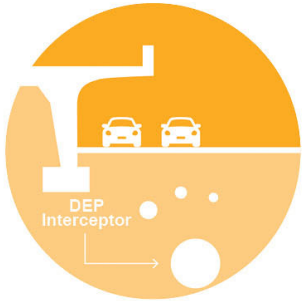
CLARK ST
TUNNEL

CLARK ST
FAN PLANT AND
EGRESS



DEP Interceptor Sewer

Moved slide to Appendix to reduce presentation length



Considerations

Brooklyn Bridge & Anchorage Plaza Surface Connections

Moved slide to Appendix to reduce presentation length



Considerations

Manhattan Bridge to BQE Connection

Moved slide to Appendix to reduce presentation length



Atlantic Ave Interchange

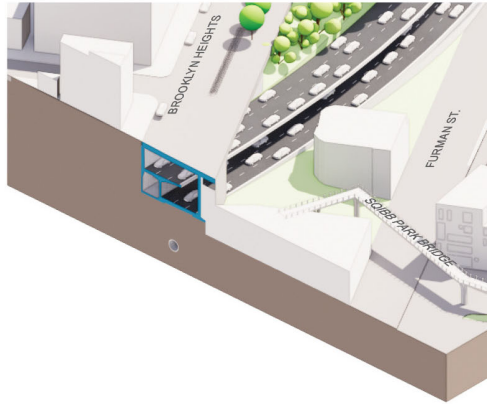
Moved slide to Appendix to reduce presentation length



BQPark Studies

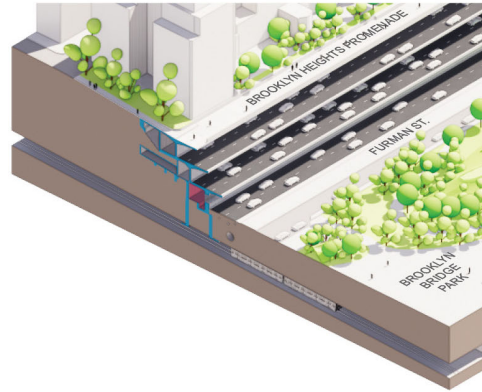
Existing Conditions

Moved slide to Appendix to reduce presentation length



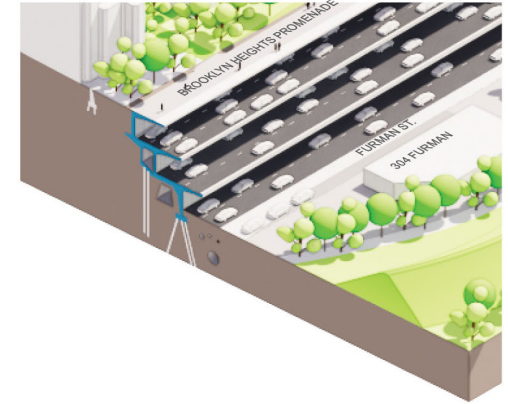
Bi-Level Above Grade

1. Columbia Heights



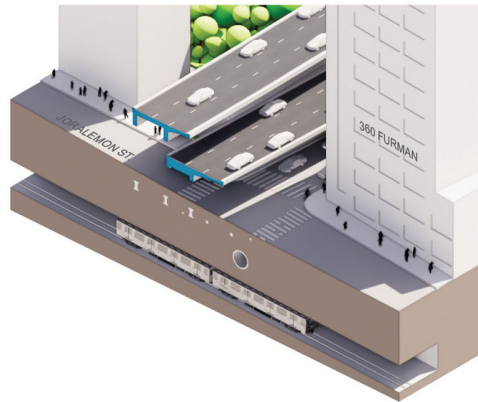
Triple Cantilever

2. Clark Street



Triple Cantilever

3. Triple Cantilever



Bi-Level Above Grade

4. Joralemon



Single Level Above Grade

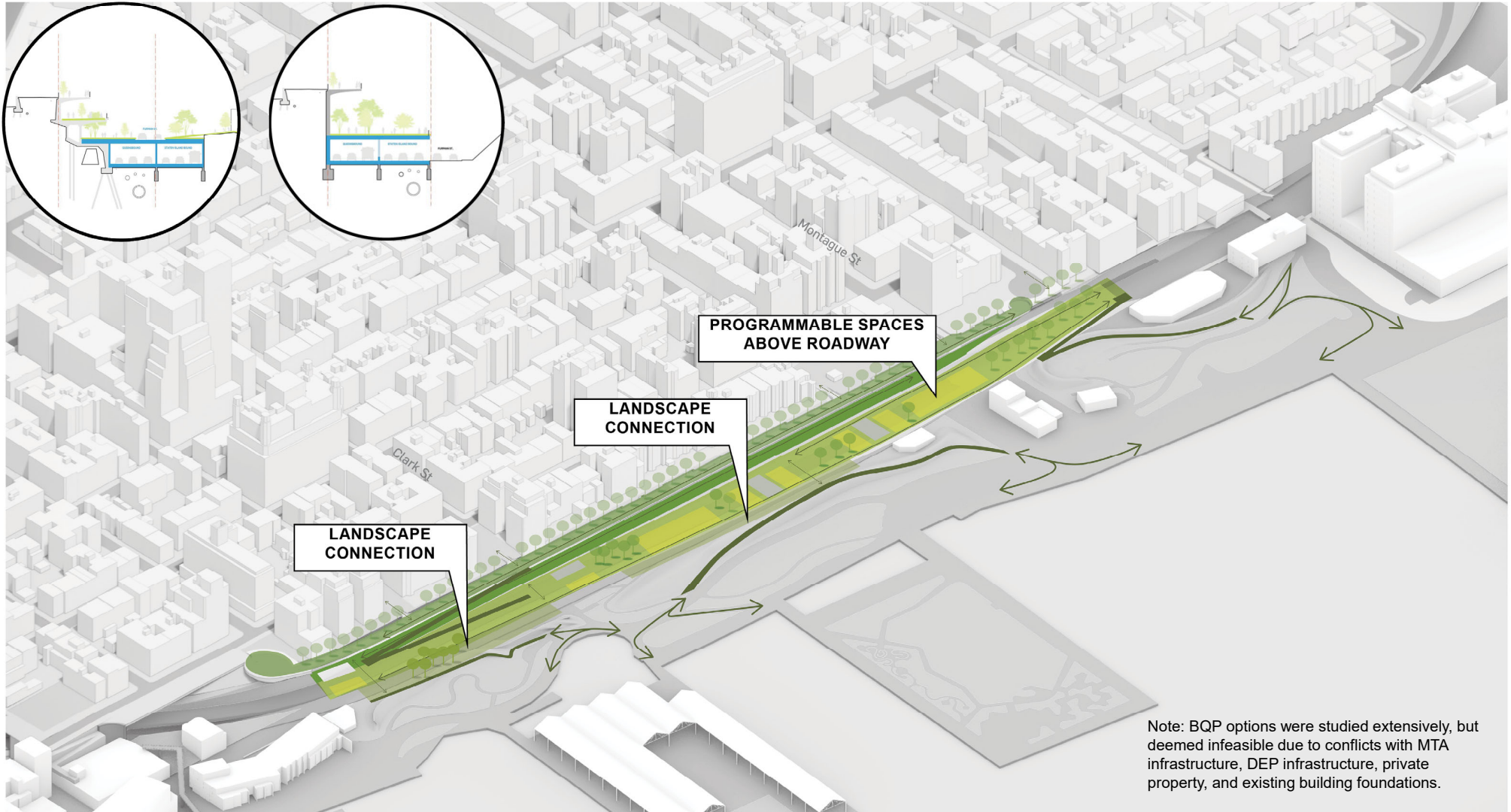
5. Atlantic Ave



BQP

Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. Roadway geometry in this configuration not feasible.

Avoid 



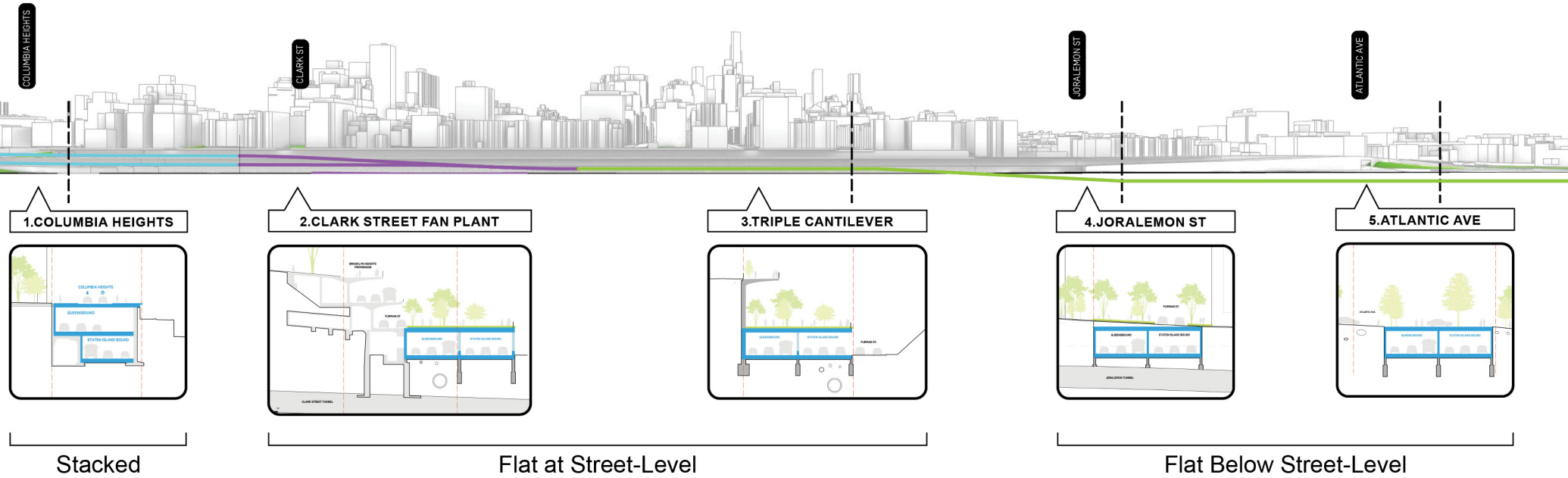
BQP - Elevation



Stacked to Flat at Street-Level to Flat Below Street-Level

Moved slide to Appendix to reduce presentation length,
leave more time to discuss feasible concepts.

Roadway geometry in this configuration not feasible



Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



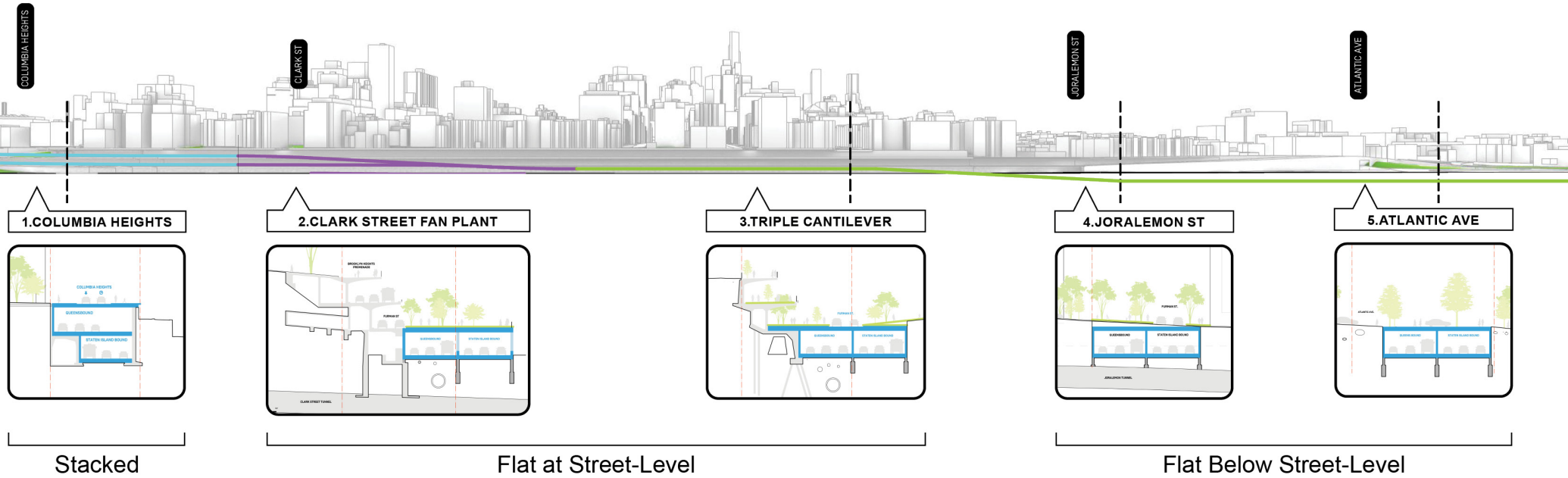
BQP - Elevation



Stacked to Flat at Street-Level to Flat Below Street-Level

Moved slide to Appendix to reduce presentation length,
leave more time to discuss feasible concepts.

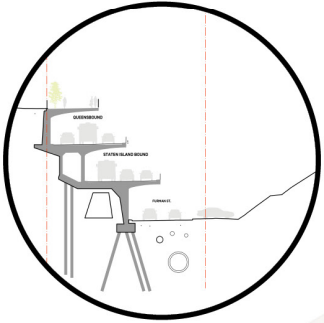
Roadway geometry in this configuration not feasible



Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



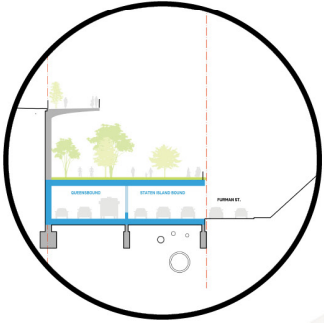
BQP - Existing Condition



BQP - Roadway Structure

Full Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

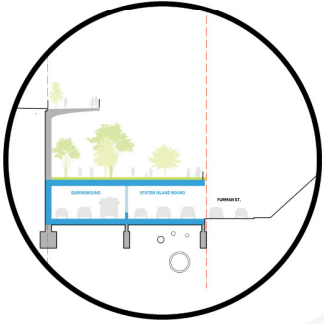
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Potential Open Space

Full Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

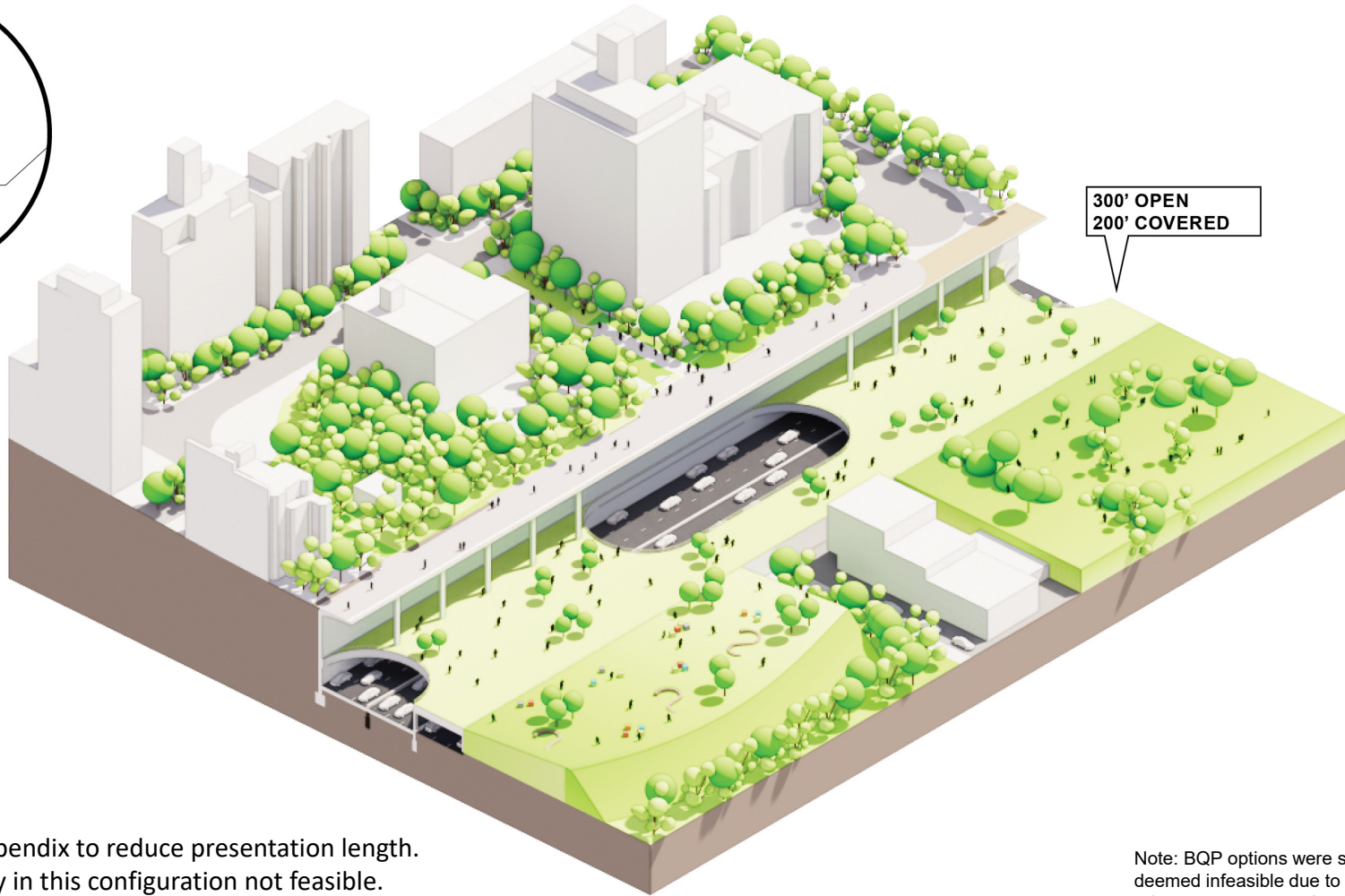
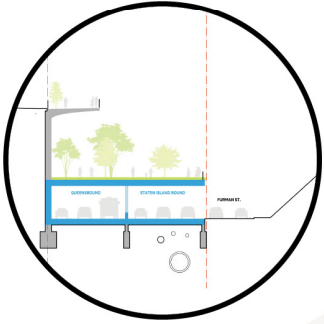
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Design Studies

Full Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

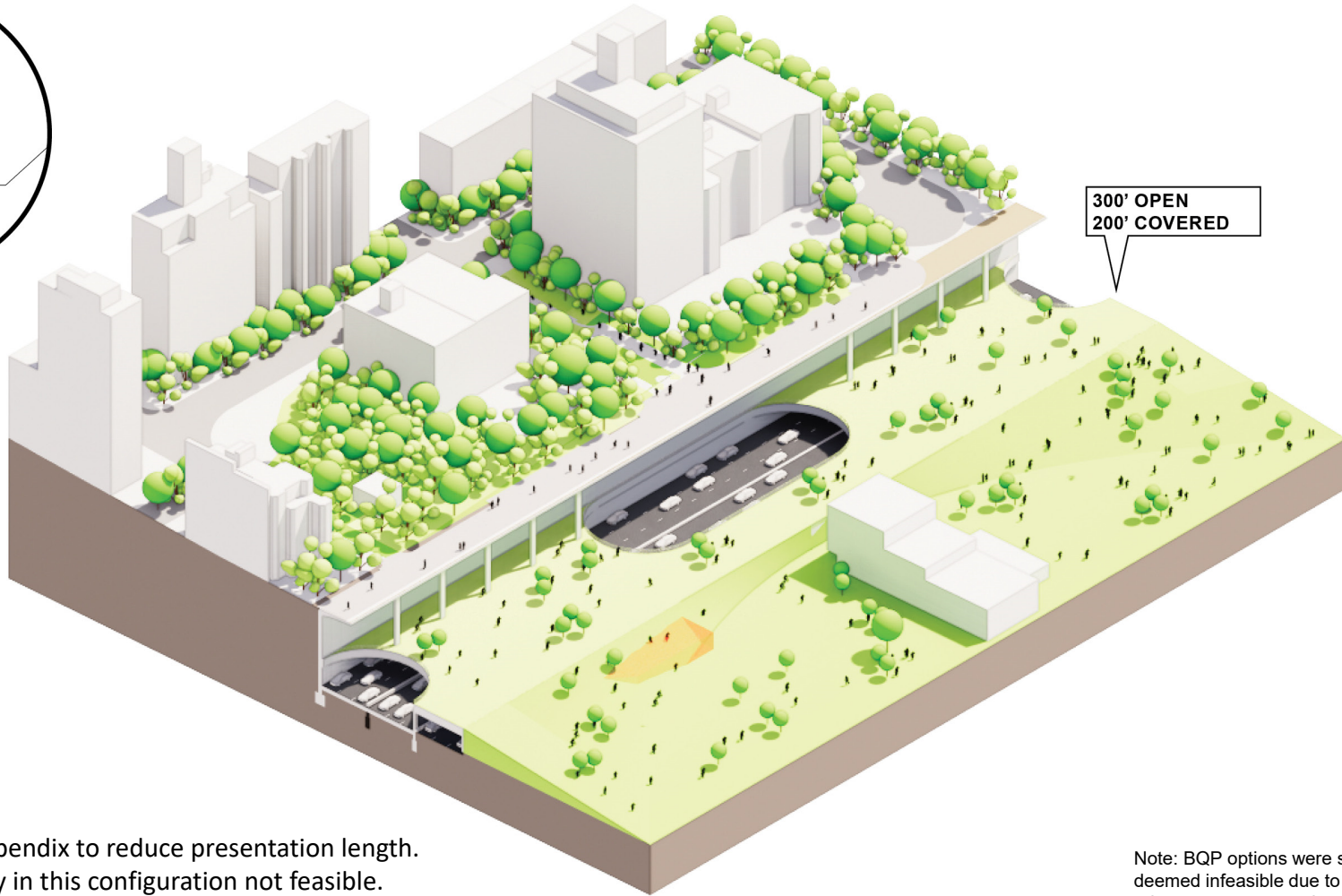
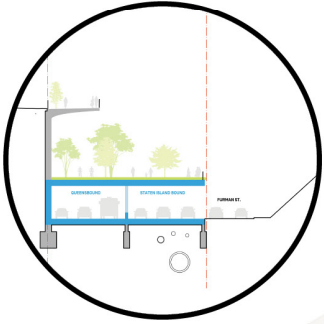
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Design Studies

Full Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

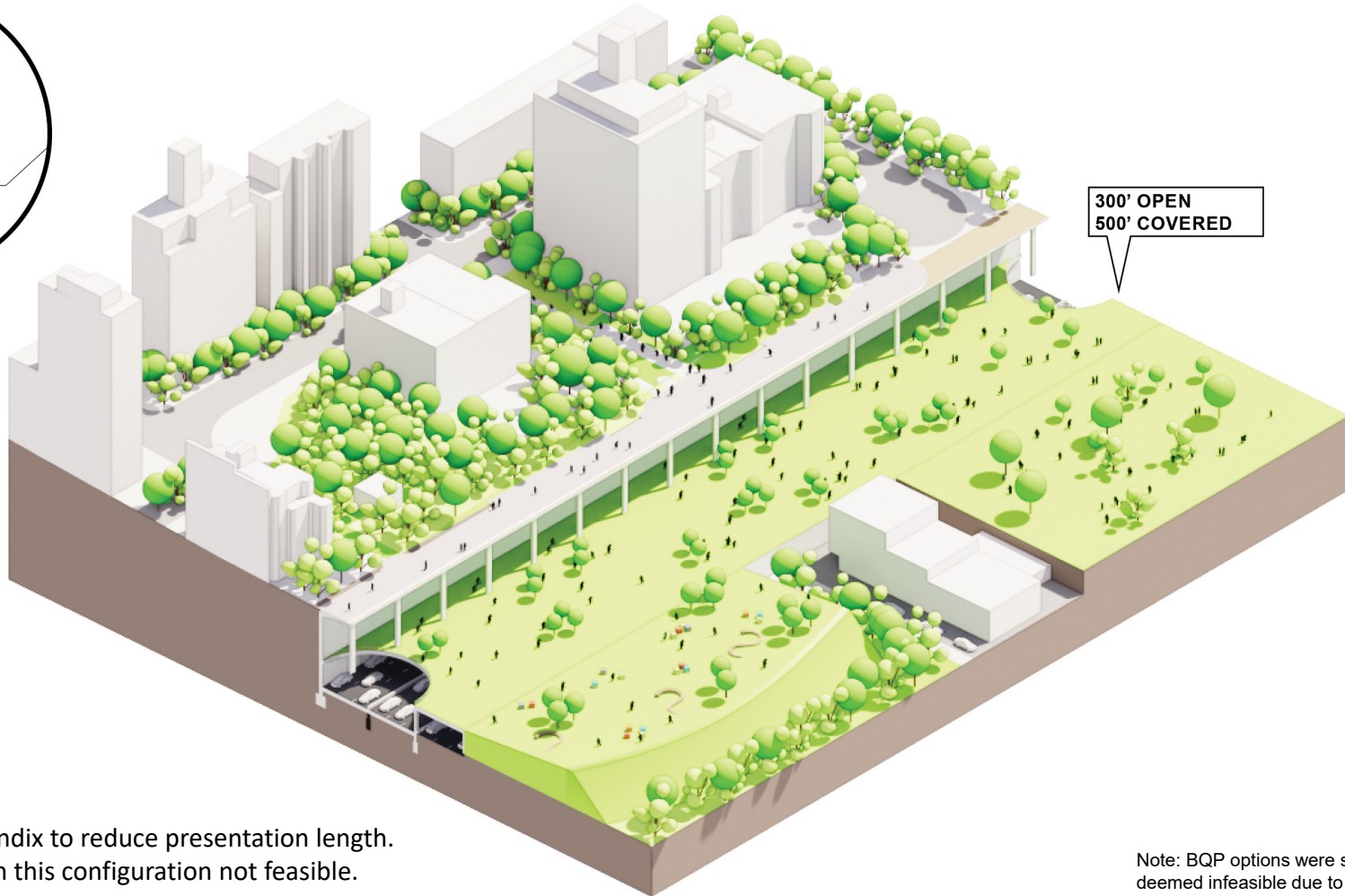
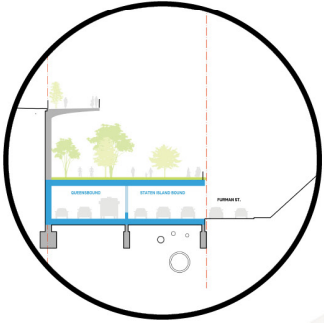
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Design Studies

Full Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

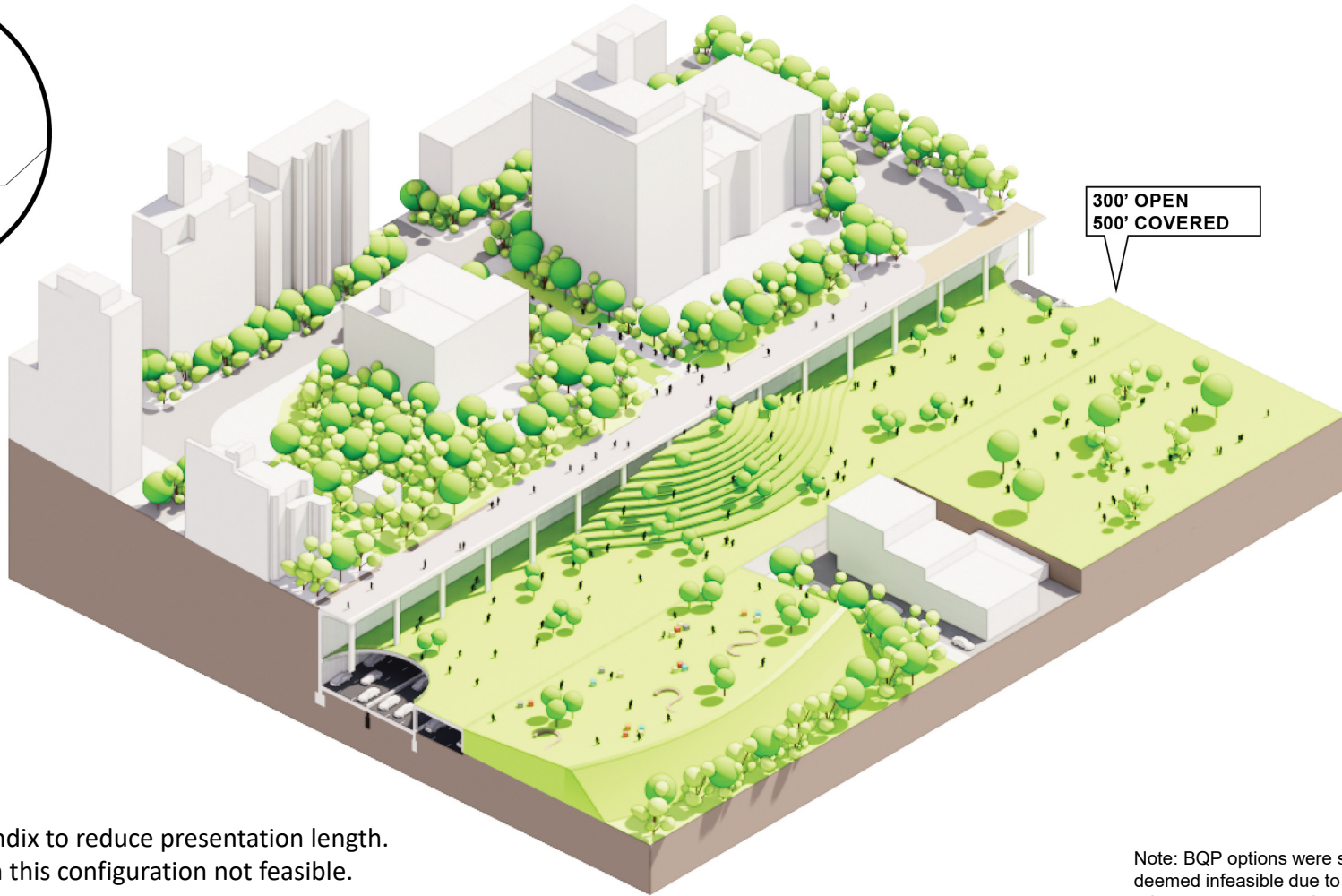
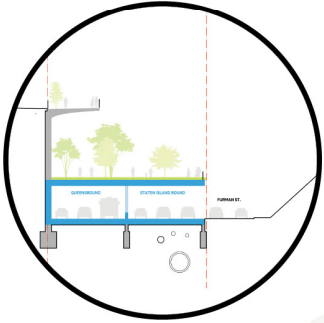
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Design Studies

Full Replacement

Avoid 

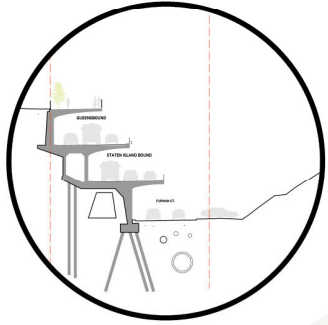


Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



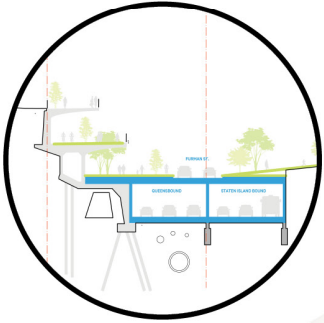
BQP - Existing Condition



BQP - Roadway Structure

Partial Replacement

Avoid 



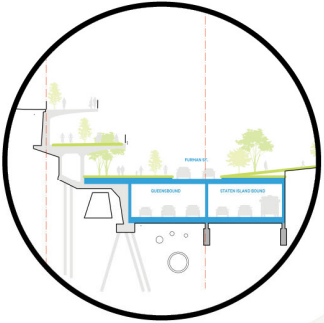
Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Potential Open Space Partial Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

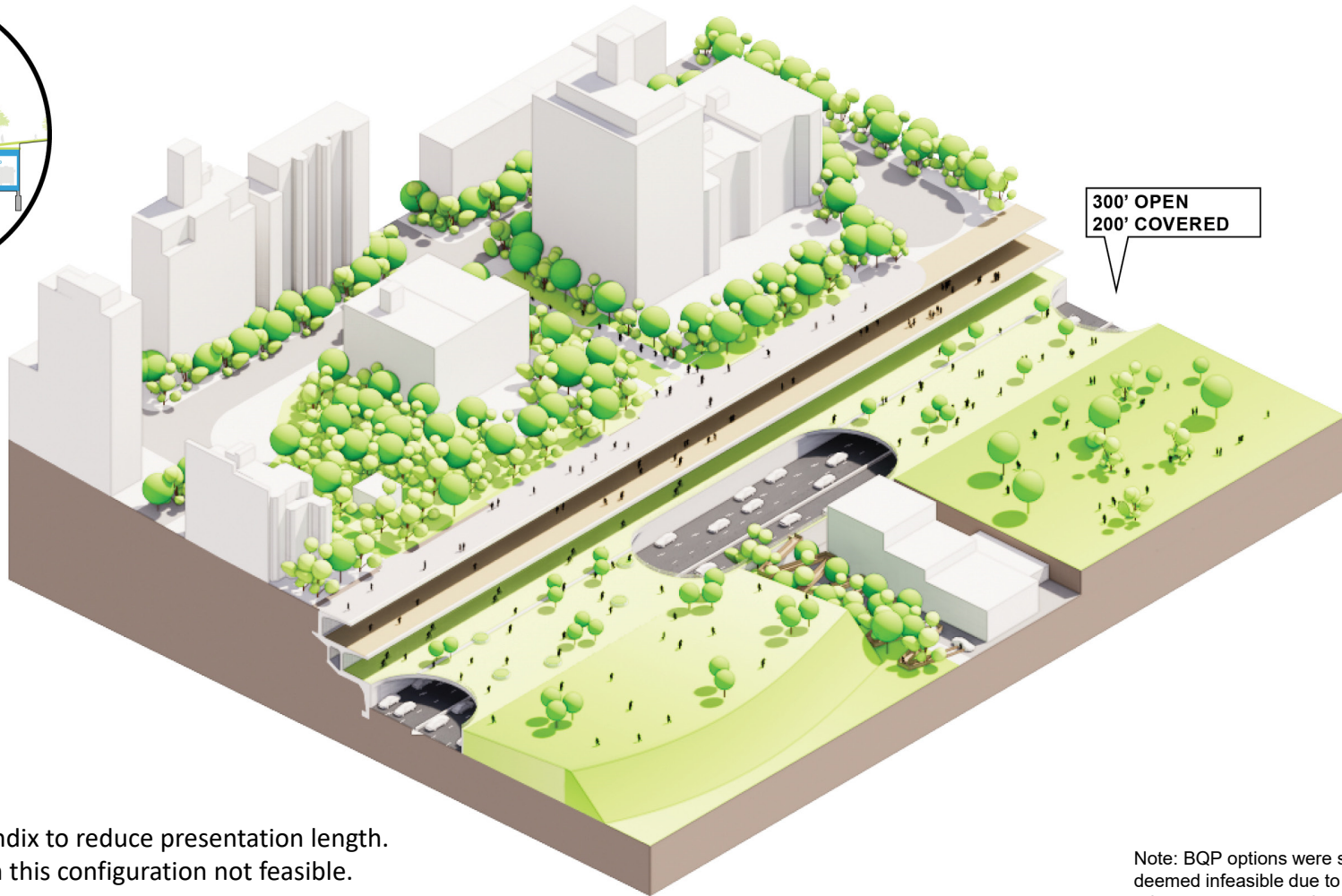
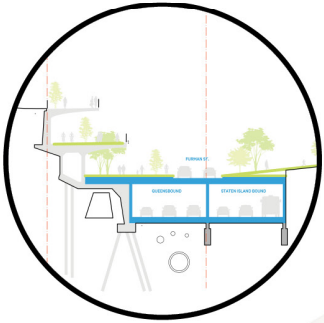
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Potential Open Space

Partial Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

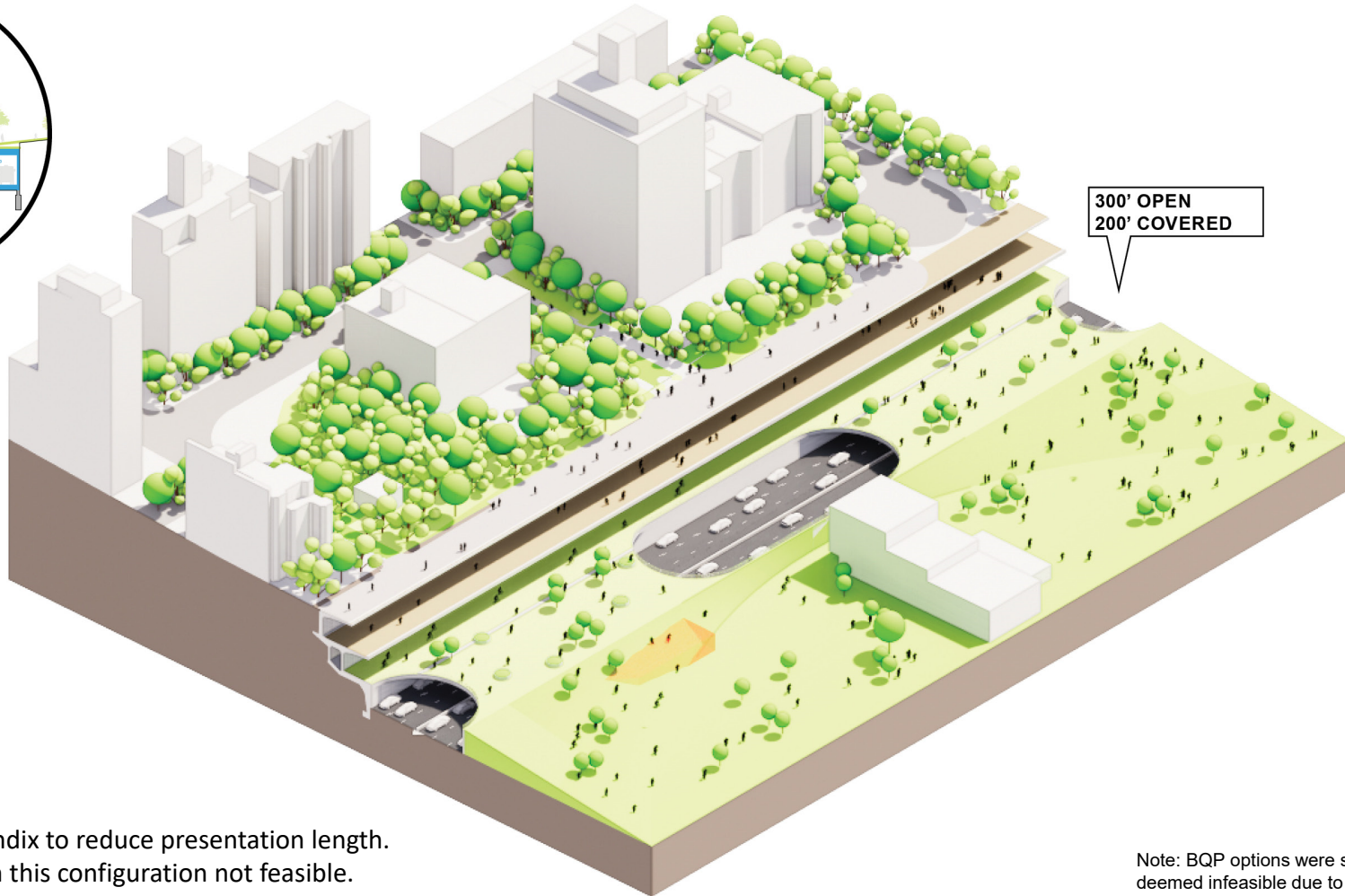
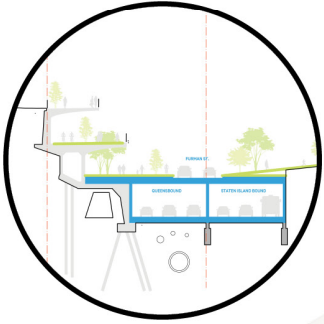
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Design Studies

Partial Replacement

Avoid 



Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.

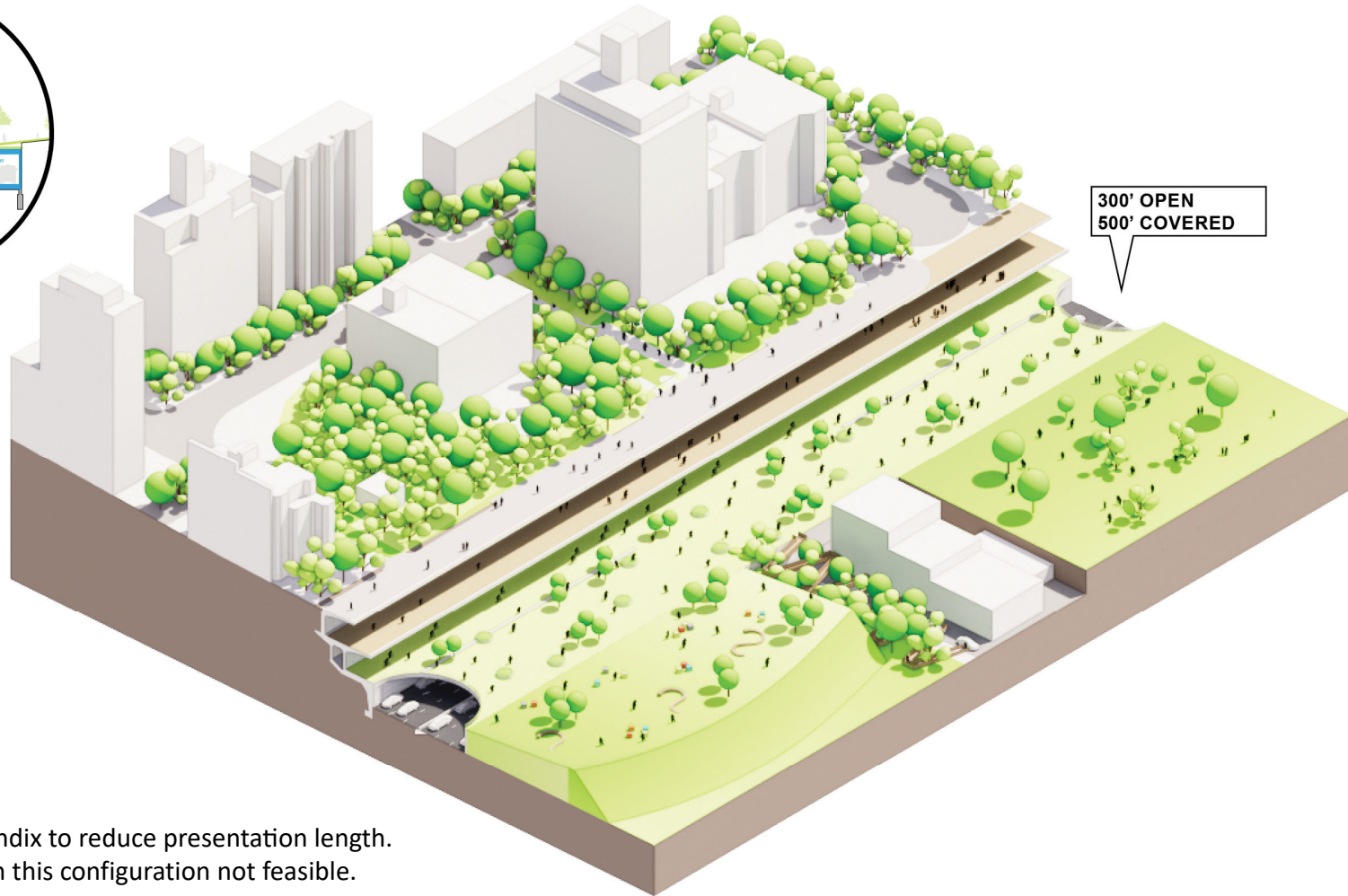
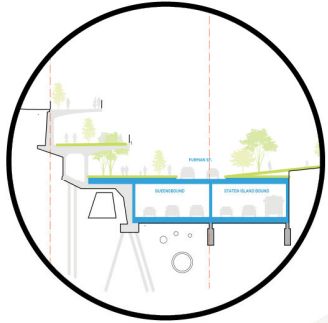
Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



BQP - Design Studies

Partial Replacement

Avoid 



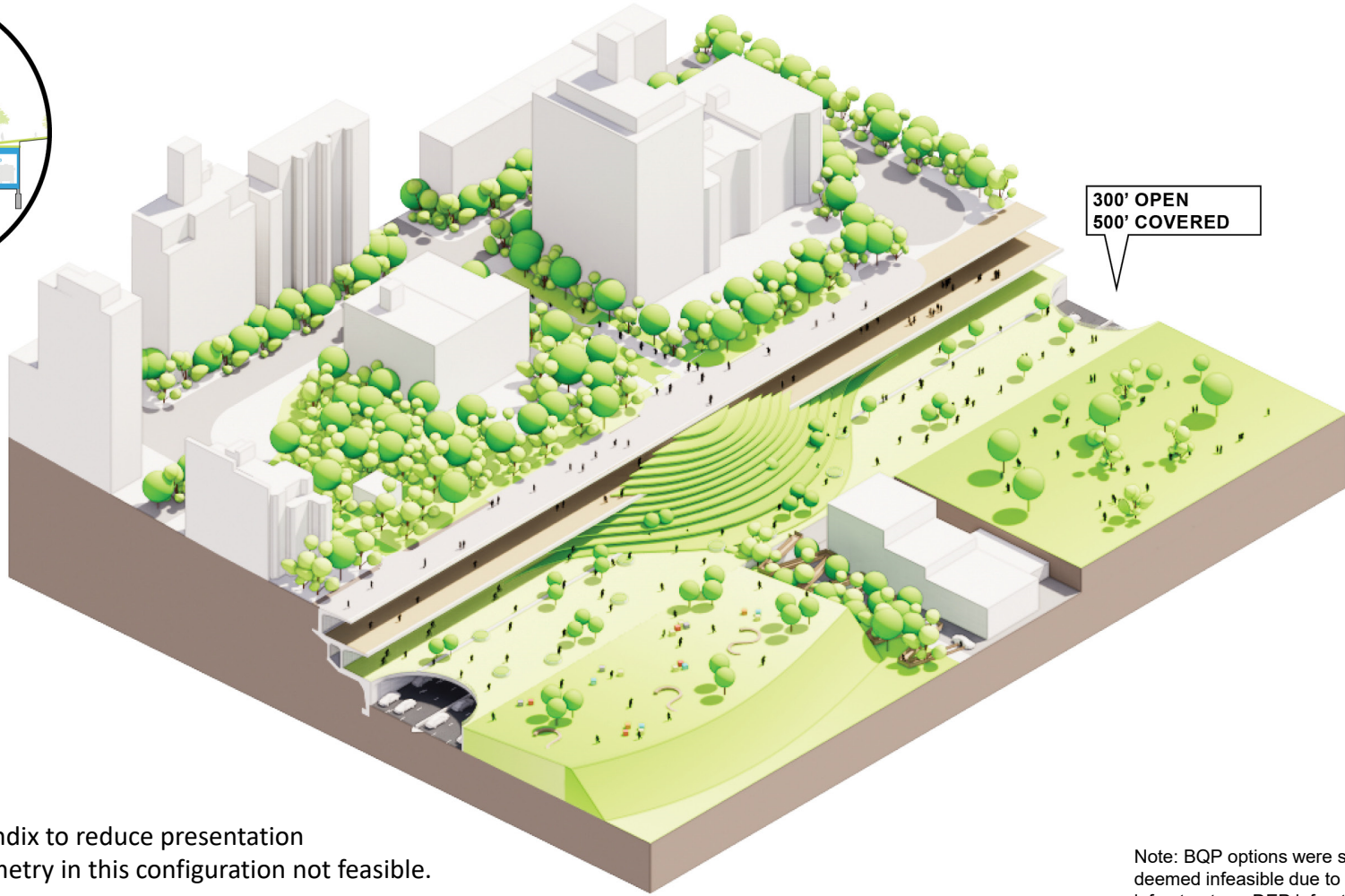
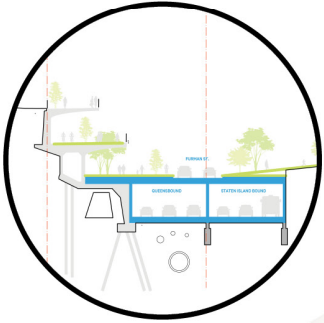
Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.



BQP - Design Studies

Partial Replacement

Avoid 



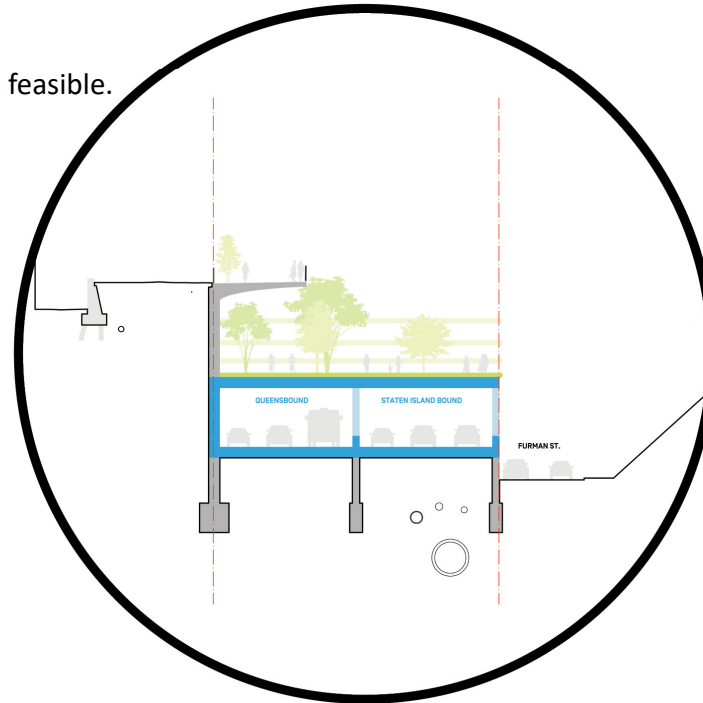
Moved slide to Appendix to reduce presentation length. Roadway geometry in this configuration not feasible.

Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



The Smile | Full Replacement

Moved slide to Appendix to reduce presentation length. Roadway geometry in this configuration not feasible.



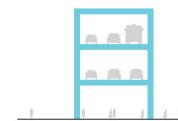
**Stacked
Above
Street**

>



**Flat
at
Street**

>



**Stacked
Above
Street**

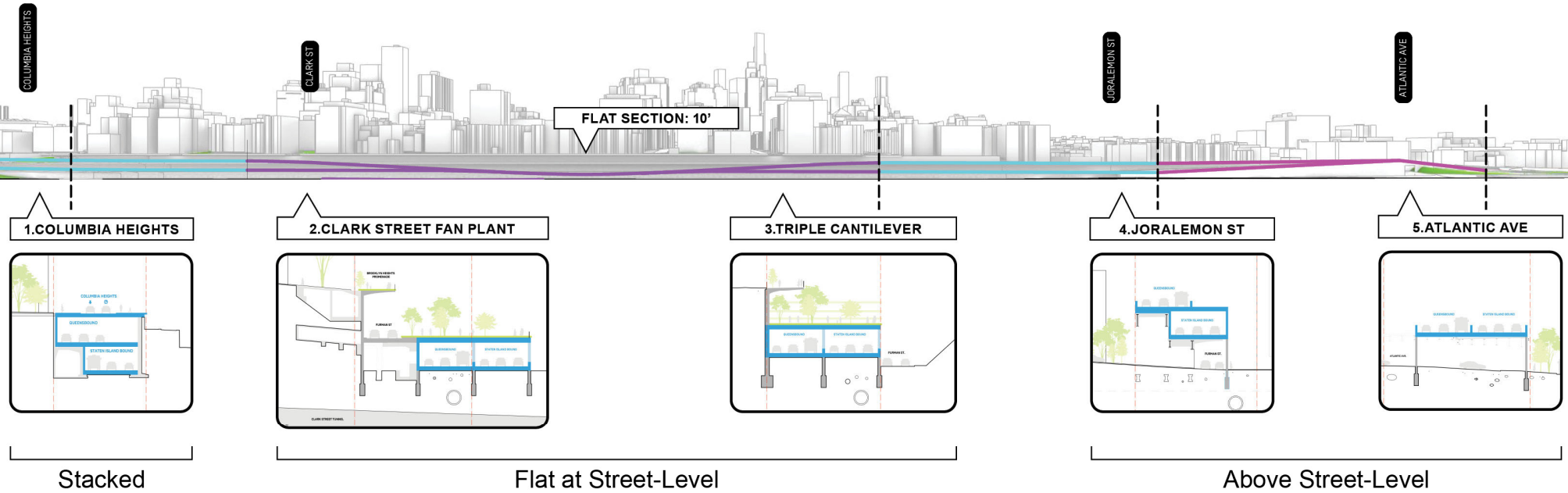
Note: In addition to the BQP, another concept, "The Smile," was considered. This concept would avoid infrastructure conflicts at Joralemon St. and 360 Furman by maintaining a stacked configuration at the pinch points. This concept was deemed infeasible due to the transition lengths required to reach an at-grade configuration. Studies indicated that the resulting highway would come 9-10' above Furman St. at their lowest point and would have no flat sections of single-level roadway. The driving experience would be substandard and have potential safety impacts in this configuration.



The Smile - Elevation

Stacked to Flat at Street-Level to Above Street-Level

Moved slide to Appendix to reduce presentation length. Roadway geometry in this configuration not feasible.

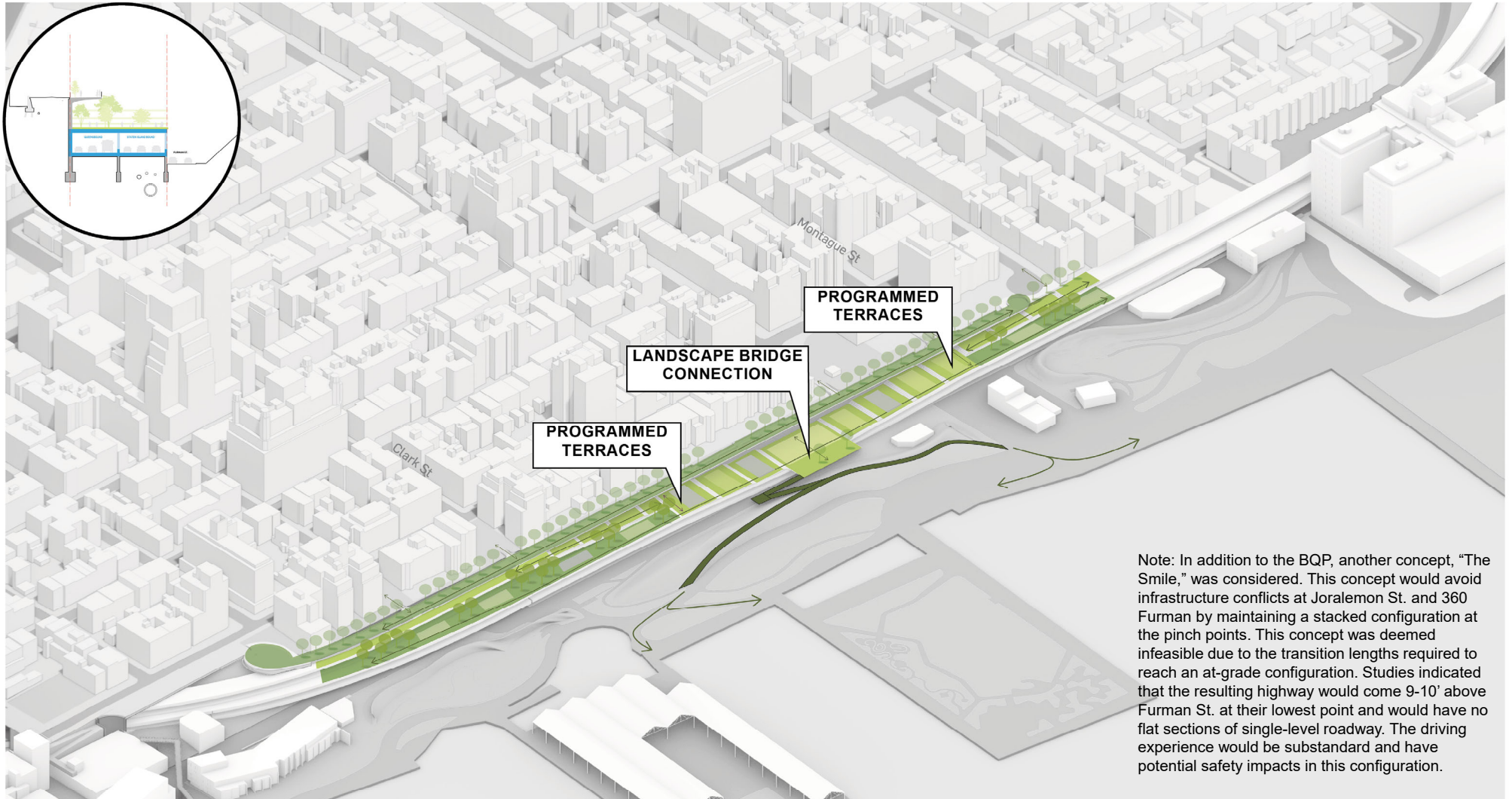


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The Smile | Full Replacement

Moved slide to Appendix to reduce presentation length. Roadway geometry in this configuration not feasible.



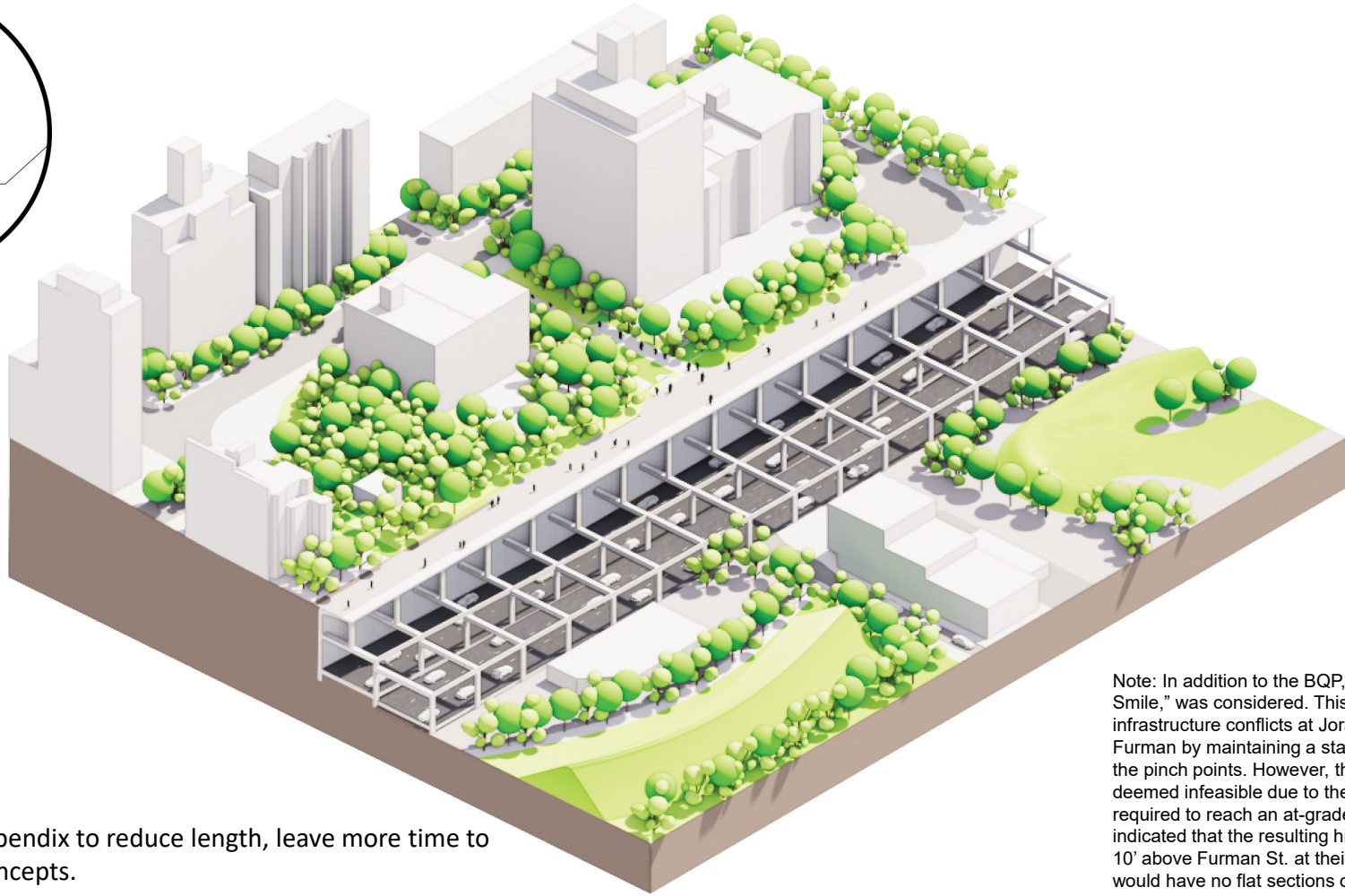
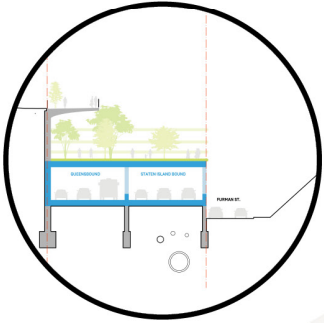
The Smile - Existing Condition

Full Replacement



The Smile - Roadway Structure

Full Replacement



Moved slide to Appendix to reduce length, leave more time to discuss feasible concepts.

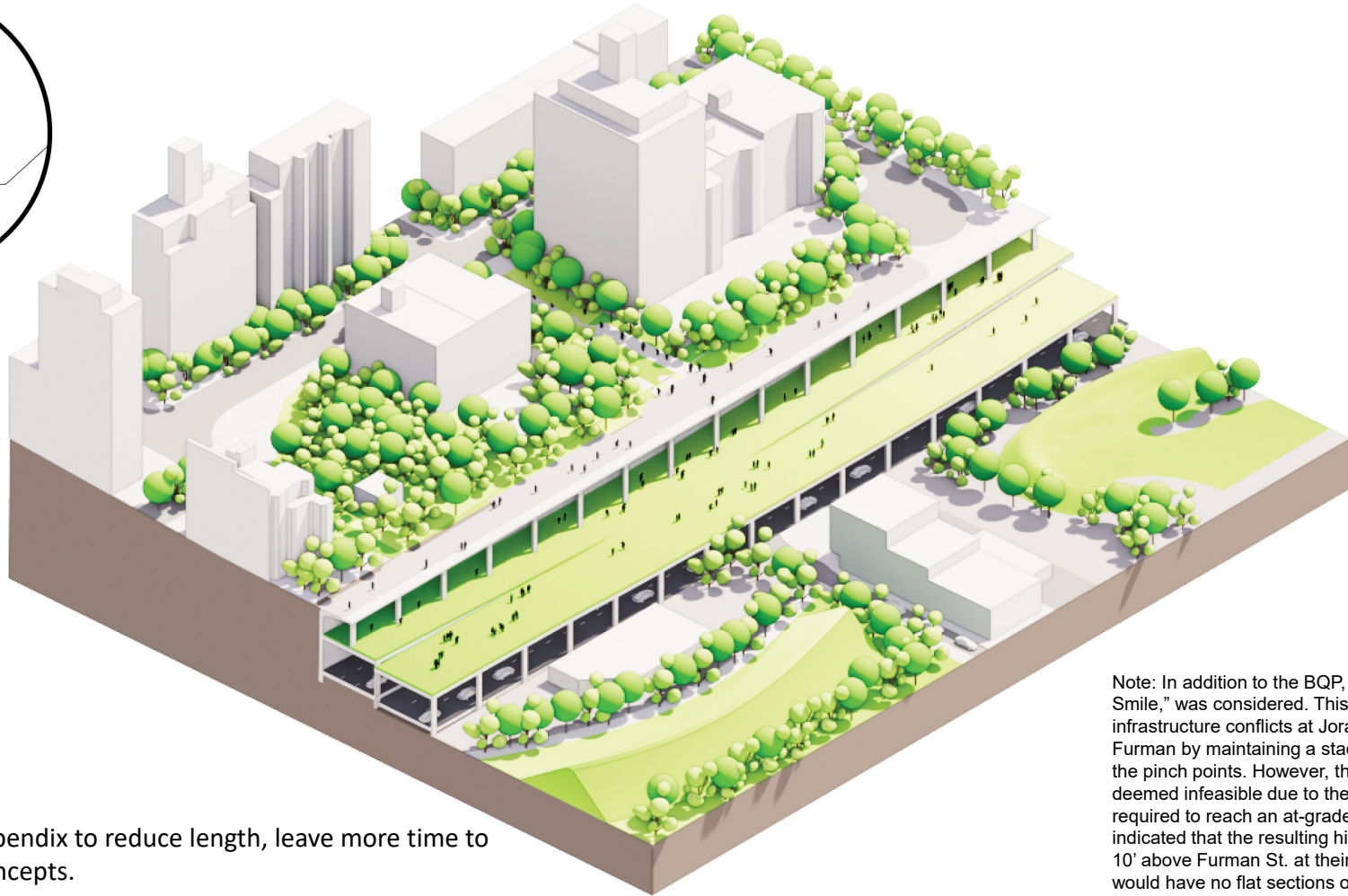
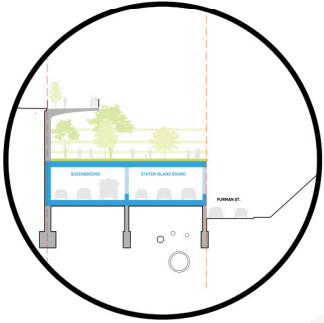
Roadway geometry in this configuration not feasible

Note: In addition to the BQP, another concept, "The Smile," was considered. This concept would avoid infrastructure conflicts at Joralemon St. and 360 Furman by maintaining a stacked configuration at the pinch points. However, this concept was deemed infeasible due to the transition lengths required to reach an at-grade configuration. Studies indicated that the resulting highway would come 9-10' above Furman St. at their lowest point and would have no flat sections of single-level roadway. The driving experience would be substandard and have potential safety impacts in this configuration.



The Smile - Potential Open Space

Full Replacement



Moved slide to Appendix to reduce length, leave more time to discuss feasible concepts.

Roadway geometry in this configuration not feasible

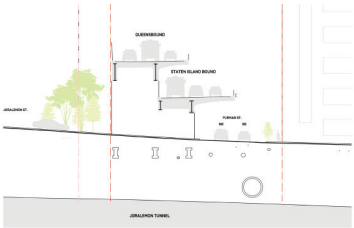
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Additions
Sectional Studies

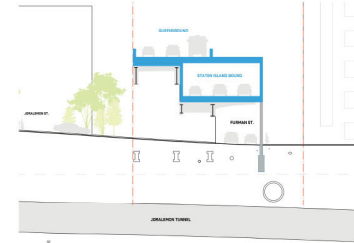
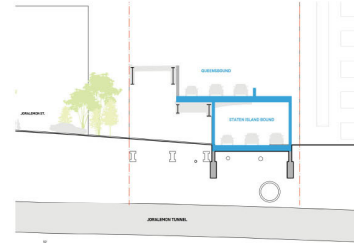
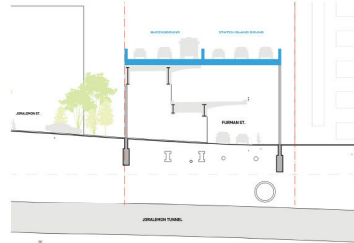
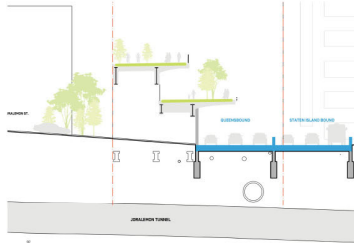
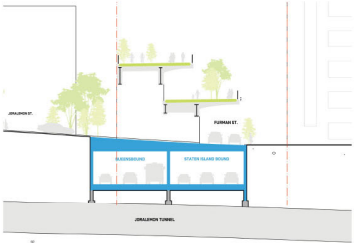
Section Matrix - Joralemon St.

Existing

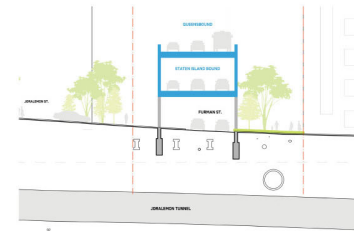
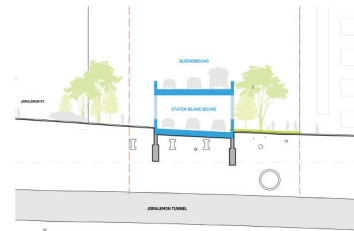
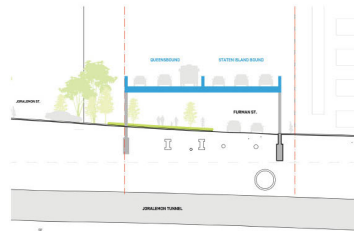
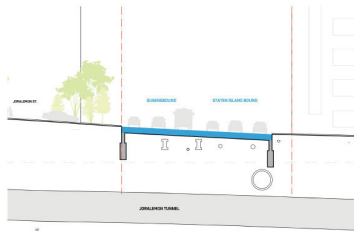
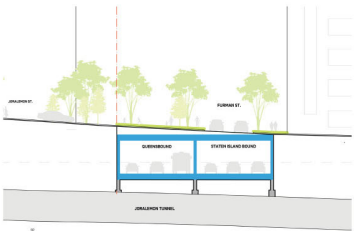


Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. Several of these roadway configurations not feasible or have conflicts

Replacement



Replacement



Cut & Cover

Single Level At-Grade

Single Level Above Grade

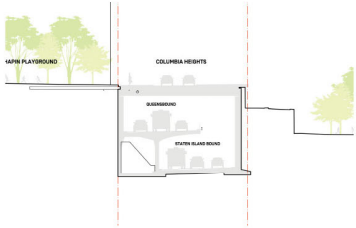
Bi-Level At-Grade

Bi-Level Above Grade



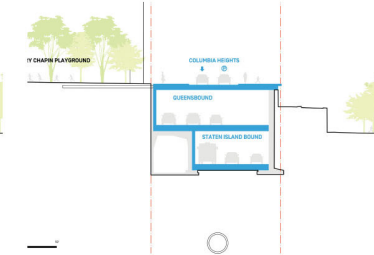
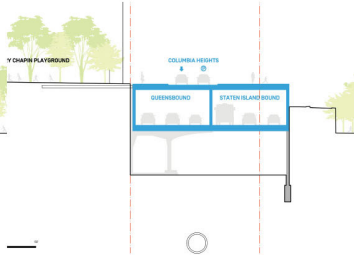
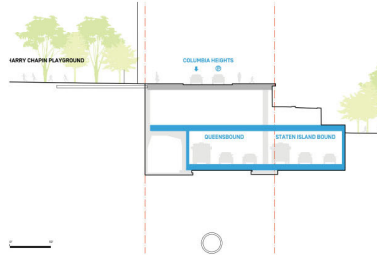
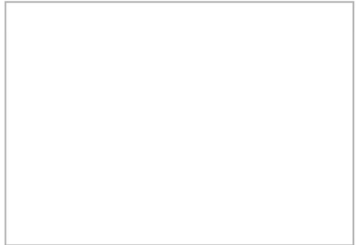
Section Matrix - Columbia Heights

Existing

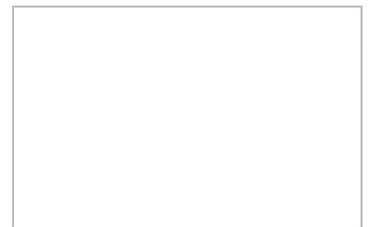
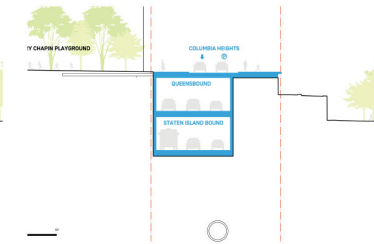
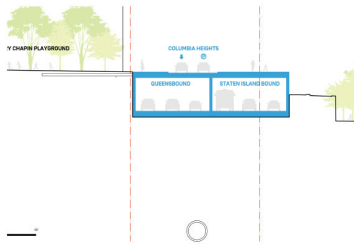
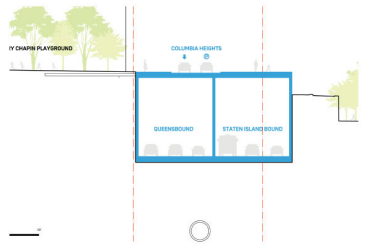
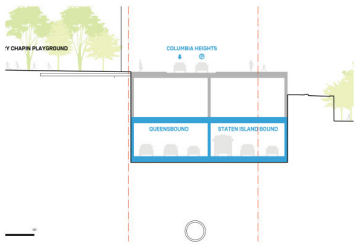


Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. Several of these roadway configurations not feasible or have conflicts.

Partial Replacement



Replacement



Cut & Cover

Single Level At-Grade

Single Level Above Grade

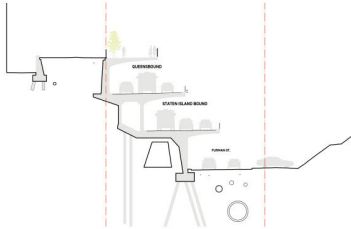
Bi-Level At-Grade

Bi-Level Above Grade



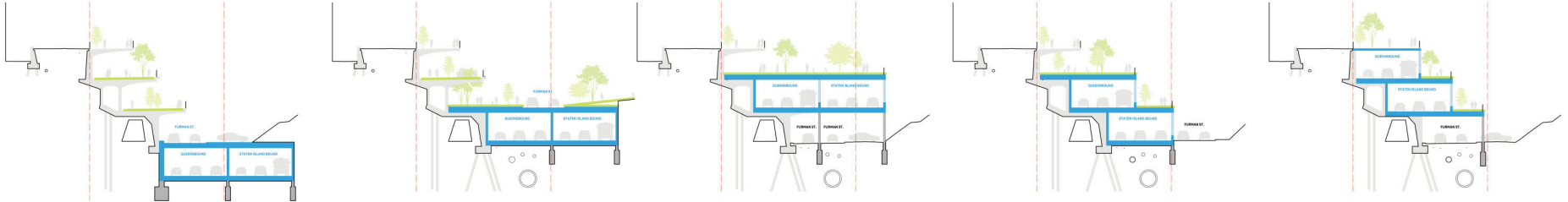
Section Matrix - Triple Cantilever

Existing

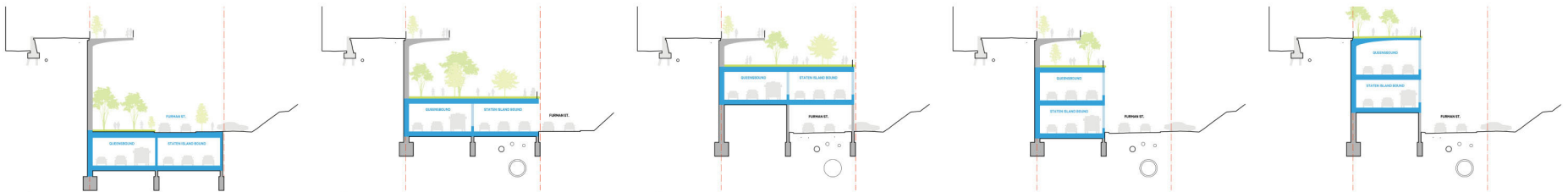


Alternate slide was developed for greater clarity, slide eliminated from presentation

Partial Replacement



Replacement



Cut & Cover

Single Level At-Grade

Single Level Above Grade

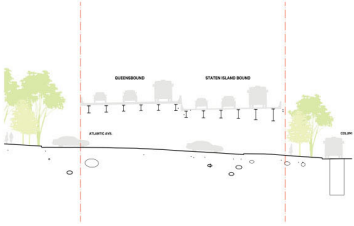
Bi-Level At-Grade

Bi-Level Above Grade



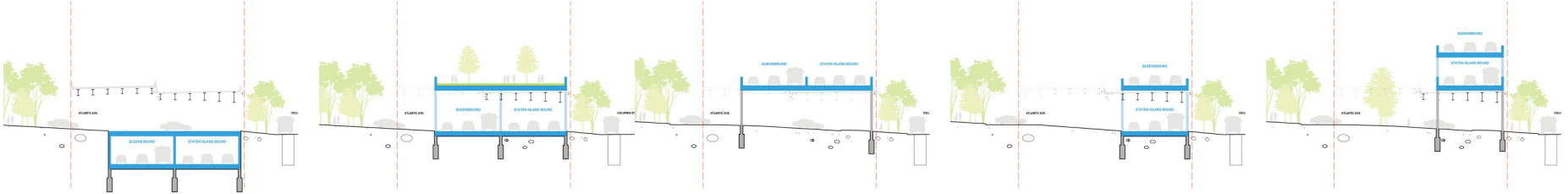
Section Matrix - Atlantic Ave

Existing

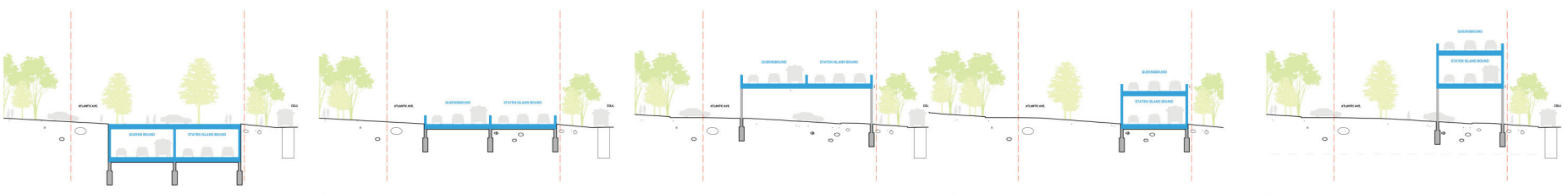


Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. Several of these roadway configurations not feasible or have conflicts

Partial Replacement



Full Replacement



Cut & Cover

Single Level At-Grade

Single Level Above Grade

Bi-Level At-Grade

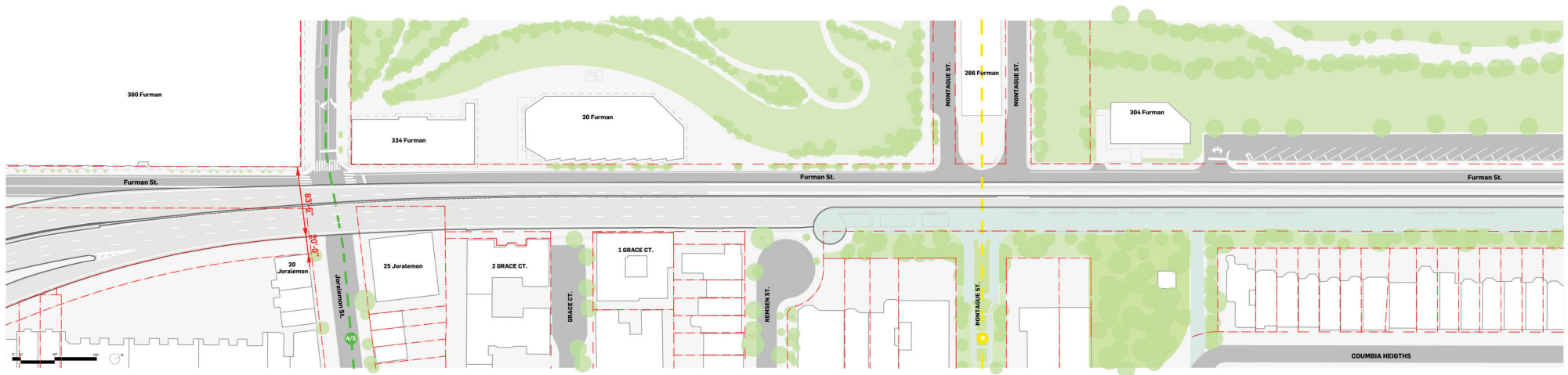
Bi-Level Above Grade



**Joralemon Street
Pinch Point
Cut & Cover Studies**

Joralemon Overall Plan - Existing

Moved slide to appendix to reduce presentation length, leave more time to discuss feasible concepts. This graphic is hard to read and is better clarified on other slides



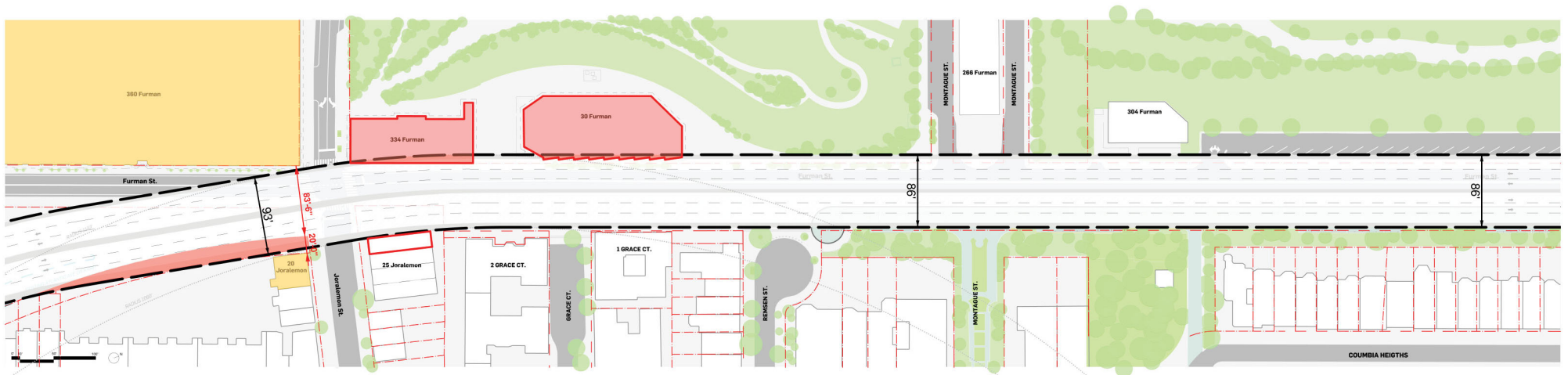
Note: Extensive studies of the Joralemon Street pinch point were conducted during the design process. These studies considered the potential for a cut-and-cover alternative from Joralemon Street to Atlantic Avenue. In all of these options, the roadway encounters significant infrastructure challenges, including DEP and MTA facilities, as well as conflicts with existing buildings and private property. Roadways were studied in both a two-lane and a three-lane configuration and in a full and partial replacement scenario, accounting for structural depth, safety features, sightlines, and the provision of on-off ramps, where existing.



Joralemon Overall Plan - BQP Full Replacement



Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations are not feasible and have conflicts



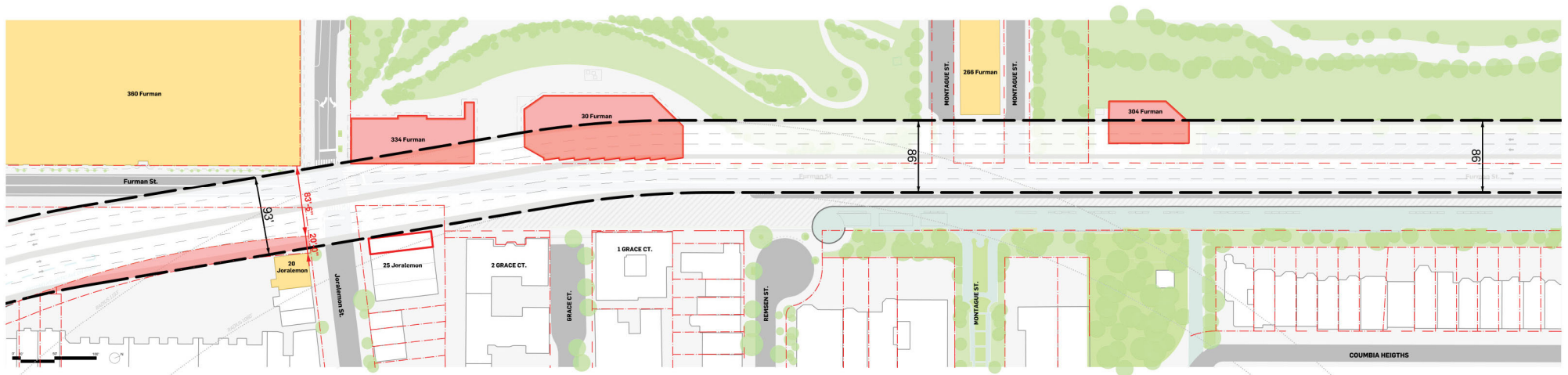
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Joralemon Overall Plan - BQP Partial Replacement



Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations not feasible and have conflicts



Note: Extensive studies of the Joralemon Street pinch point were conducted during the design process. These studies considered the potential for a cut-and-cover alternative from Joralemon Street to Atlantic Avenue. In all of these options, the roadway encounters significant infrastructure challenges, including DEP and MTA facilities, as well as conflicts with existing buildings and private property. Roadways were studied in both a two-lane and a three-lane configuration and in a full and partial replacement scenario, accounting for structural depth, safety features, sightlines, and the provision of on-off ramps, where existing.

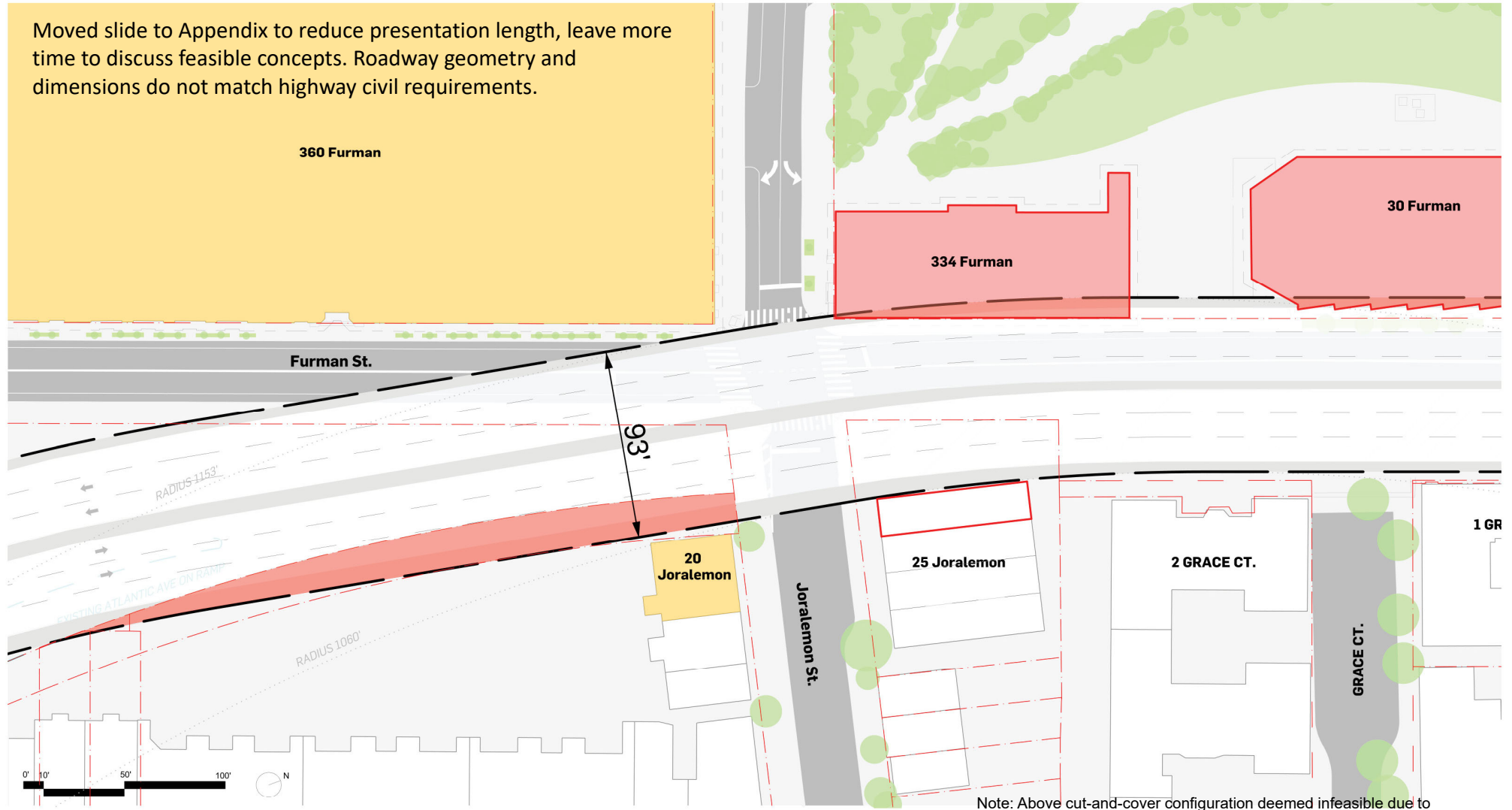


Joralemon Plan - Existing



Joralemon Plan - BQP Full Replacement

Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. Roadway geometry and dimensions do not match highway civil requirements.



Note: Above cut-and-cover configuration deemed infeasible due to conflicts with private property, existing buildings, and below-grade challenges.



Joralemon Plan - BQP Full Replacement

4 Lane + Northbound Ramp

Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. Roadway geometry and dimensions do not match highway civil requirements.



Design Concepts

Joralemon Plan - BQP Full Replacement

4 Lane

Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations not feasible to meet safety standards and have conflicts



Design Concepts

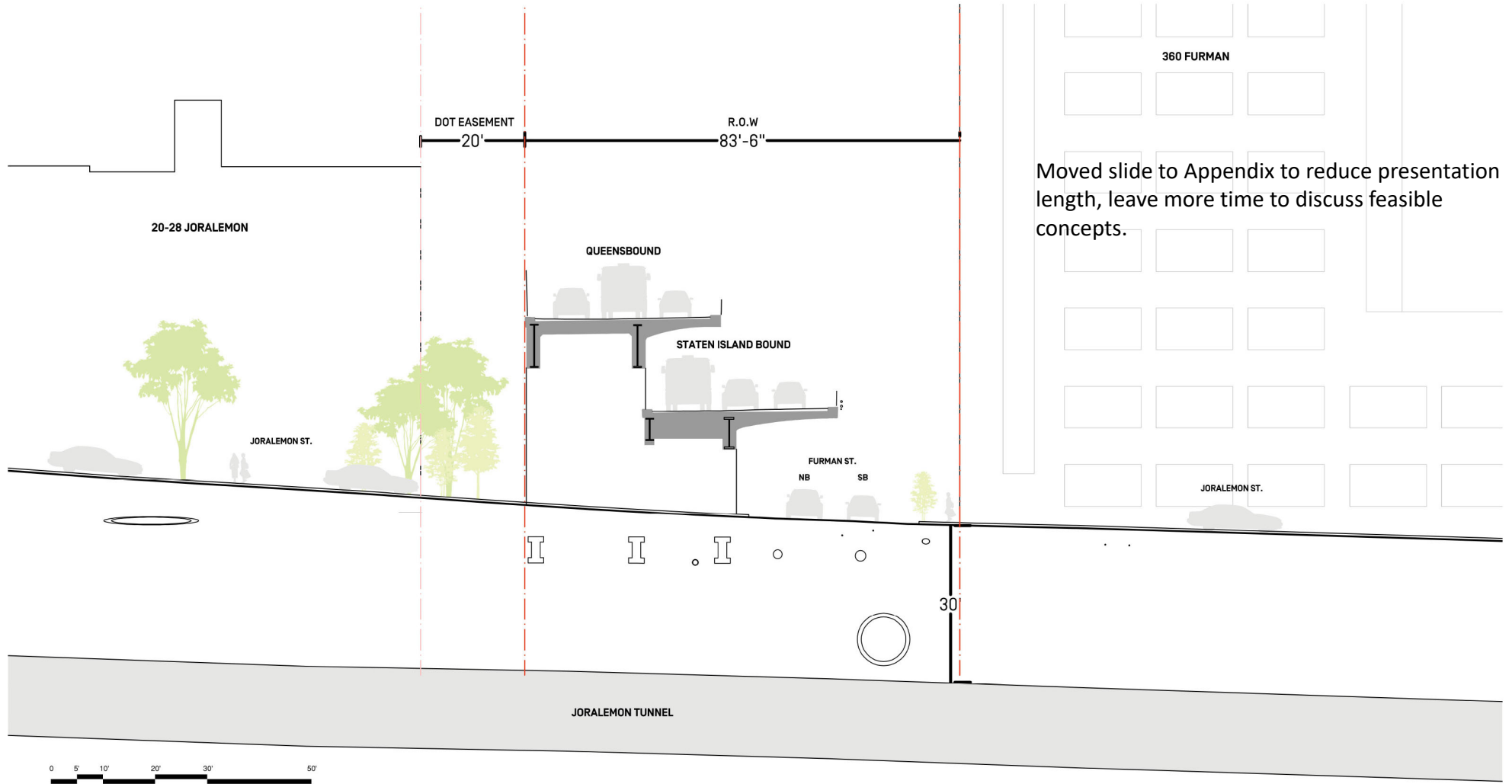
Joralemon Plan - BQP Full Replacement

6 Lane + Ramps

Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway dimensions and have conflicts re: highway/civil safety standards



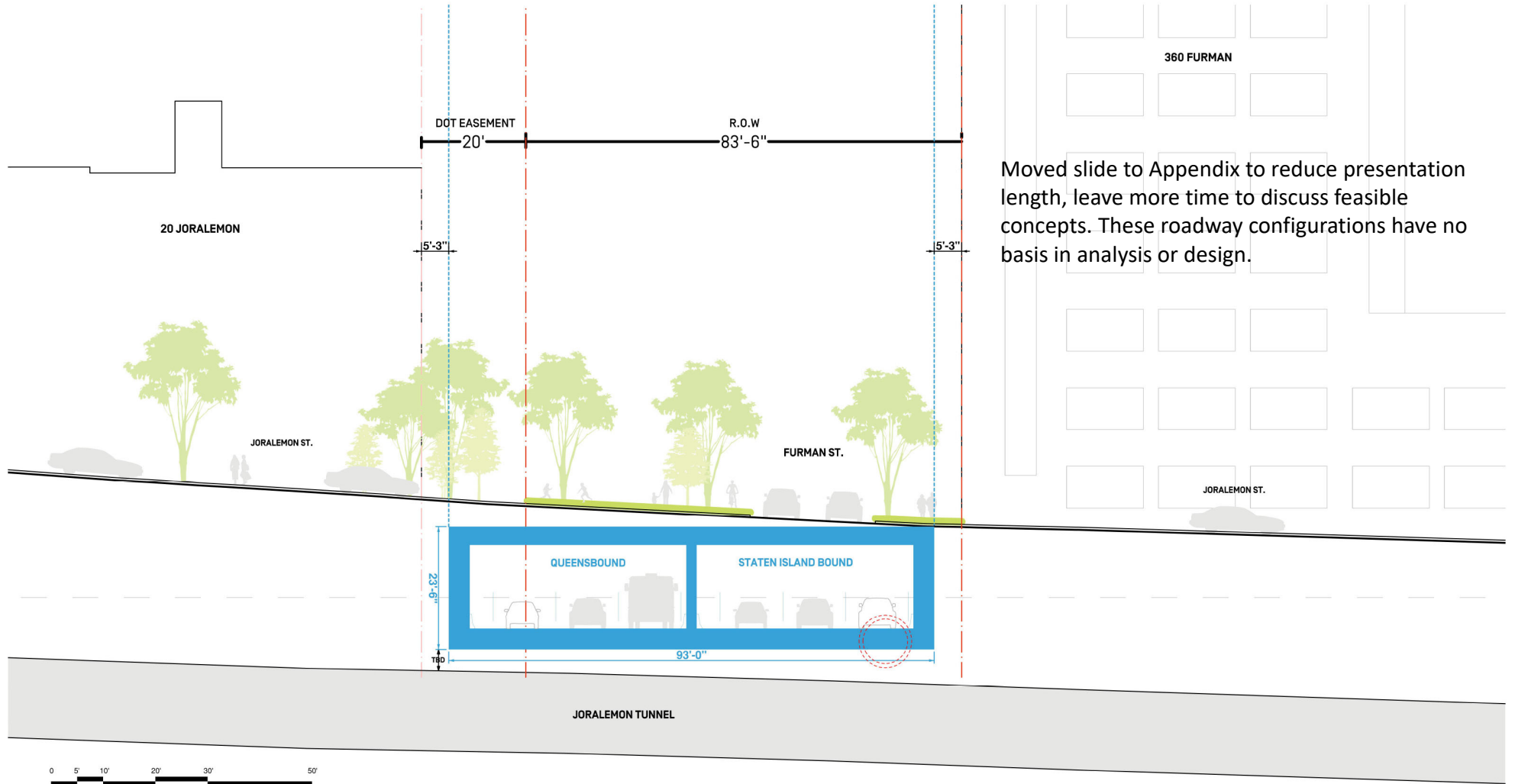
Joralemon Section - Existing



Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts.



Joralemon Section - 4 Lane

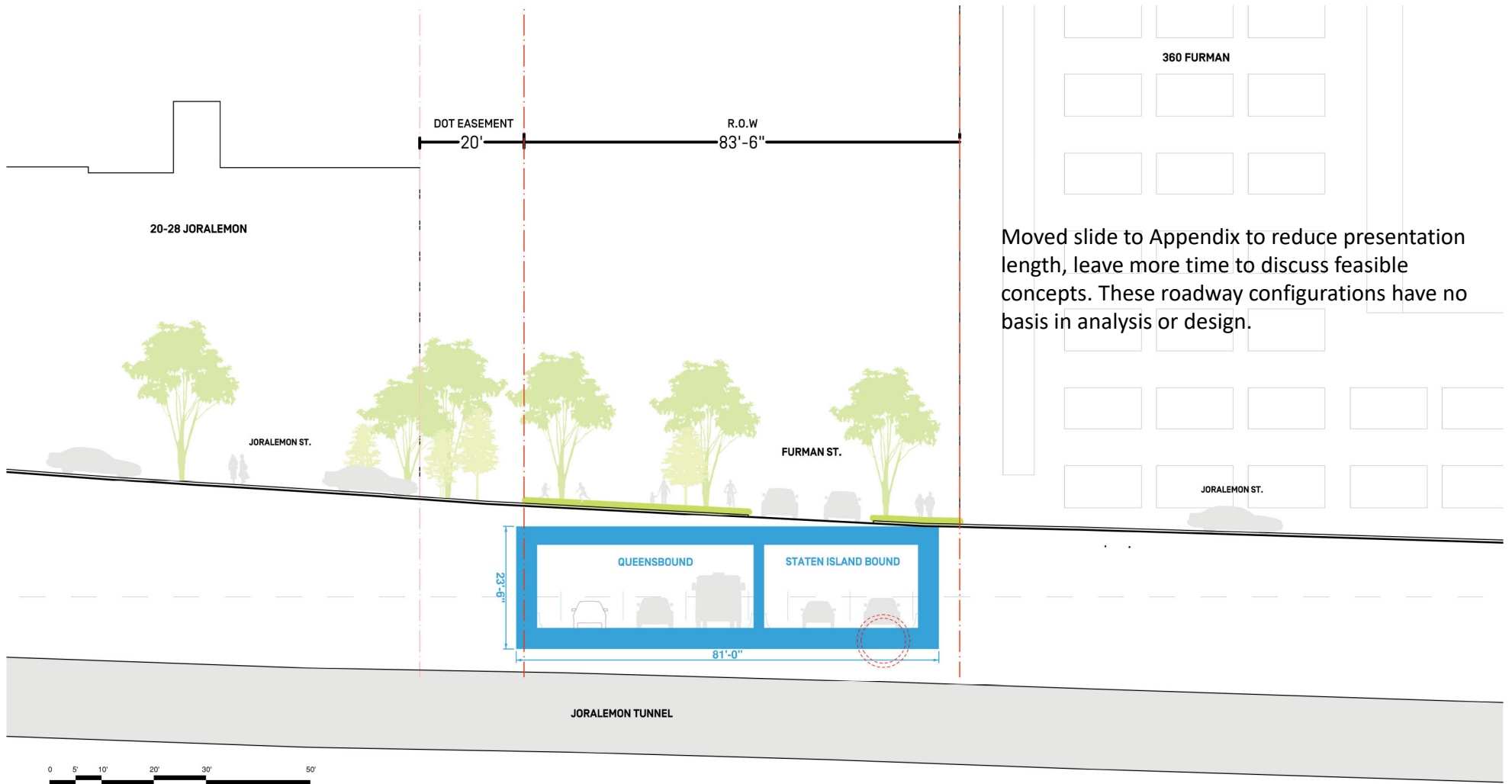


Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations have no basis in analysis or design.

Note: Above cut-and-cover configuration deemed infeasible due to conflicts with private property, and below-grade challenges.



Joralemon Section - 4 Lane + Northbound Ramp

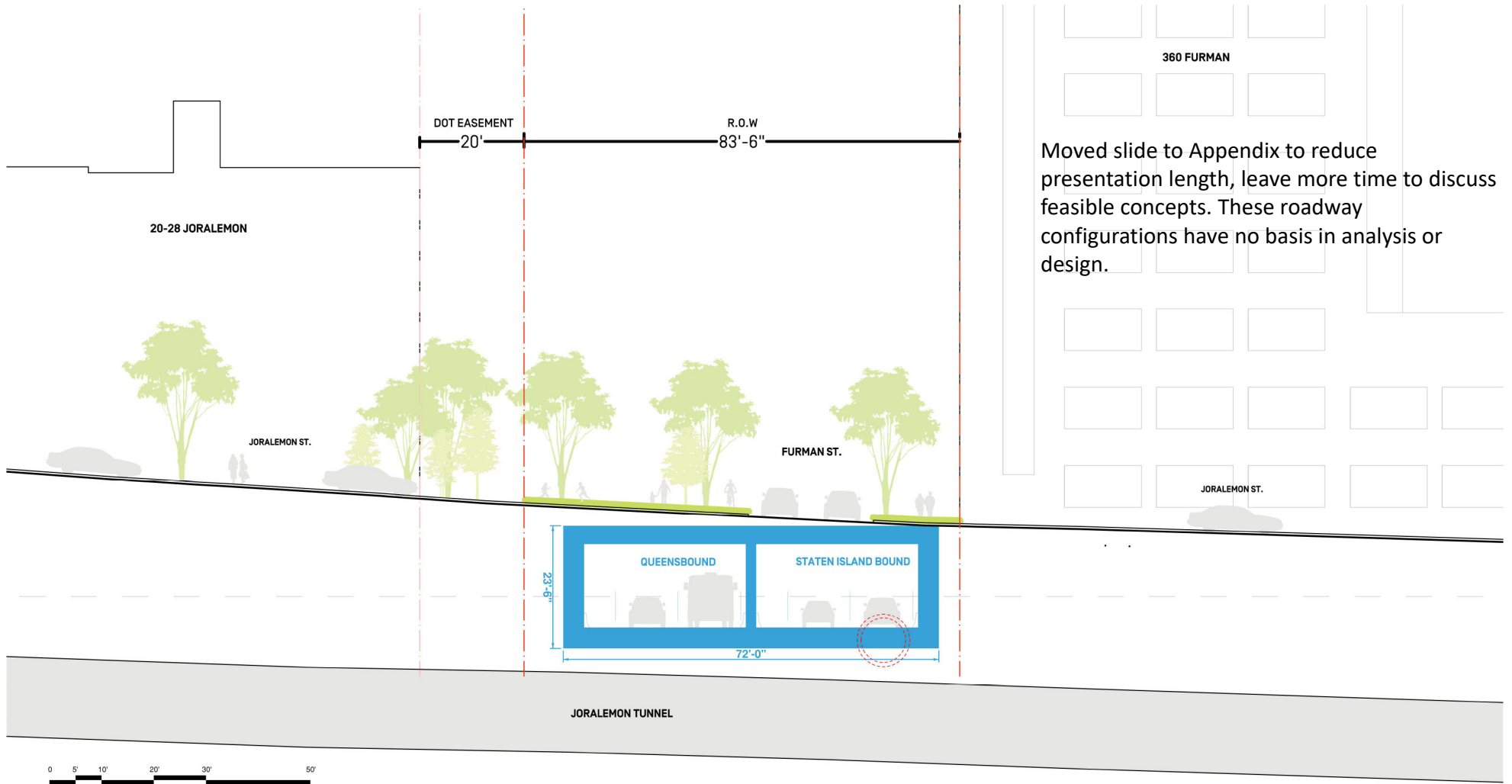


Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations have no basis in analysis or design.

Note: Above cut-and-cover configuration deemed infeasible due to conflicts with private property, and below-grade challenges.



Joralemon Section - 4 Lane

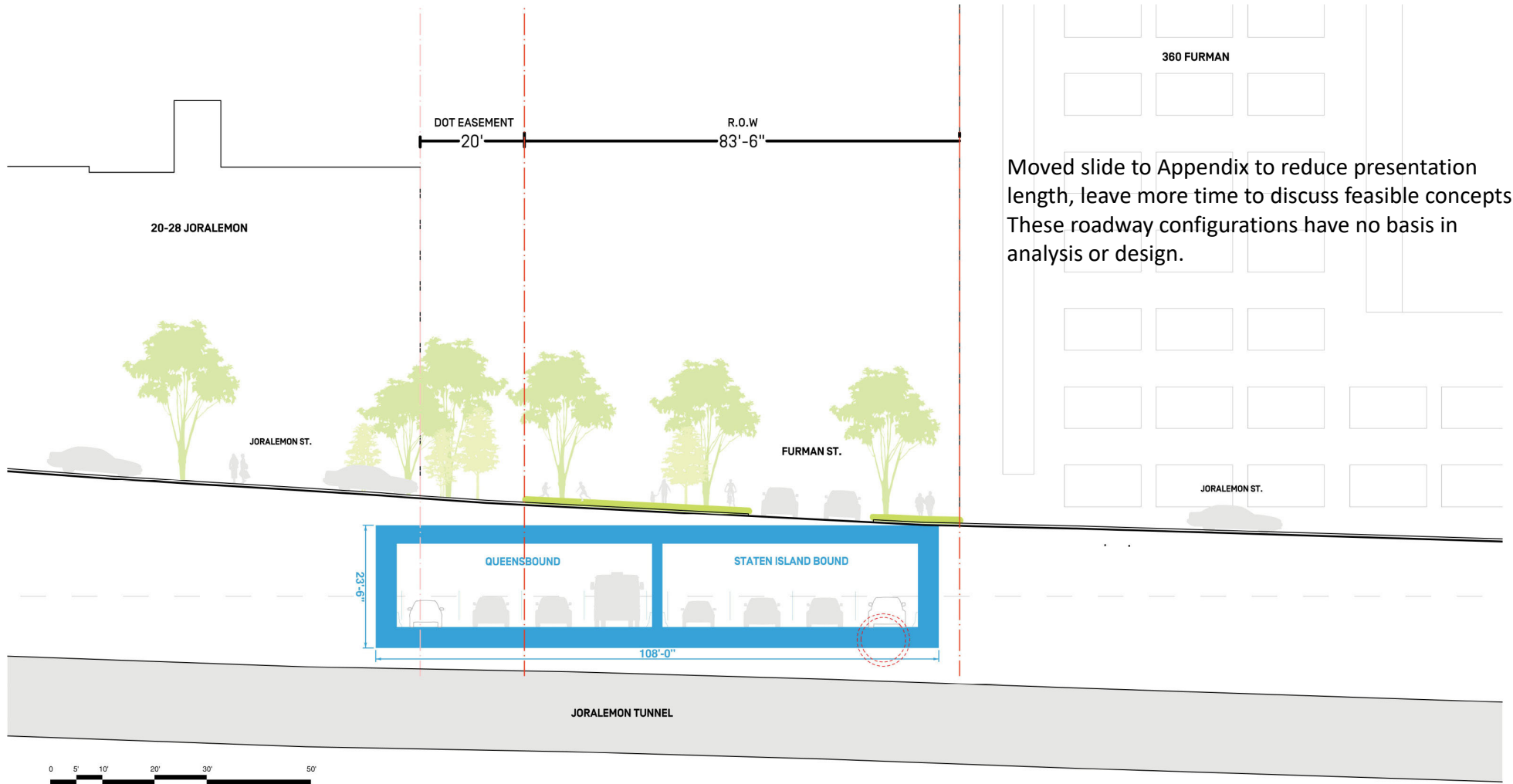


Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations have no basis in analysis or design.

Note: Above cut-and-cover configuration deemed infeasible due to inadequate merging configuration, and below-grade challenges.



Joralemon Section - 6 Lane + Ramps



Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations have no basis in analysis or design.

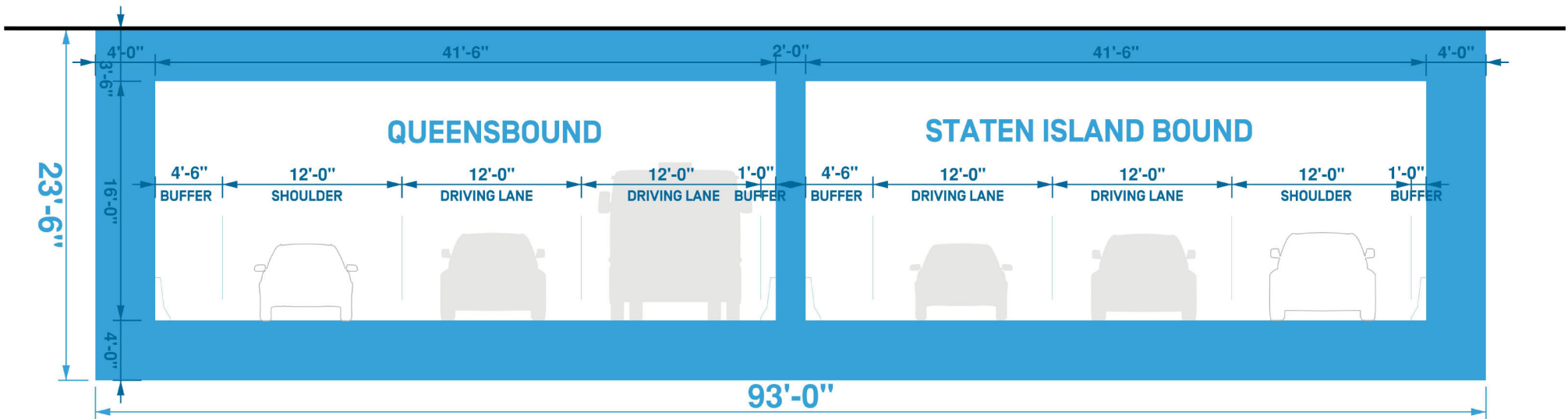
Note: Above cut-and-cover configuration deemed infeasible due to conflicts with existing buildings, private property, and below-grade challenges.



Roadway Section

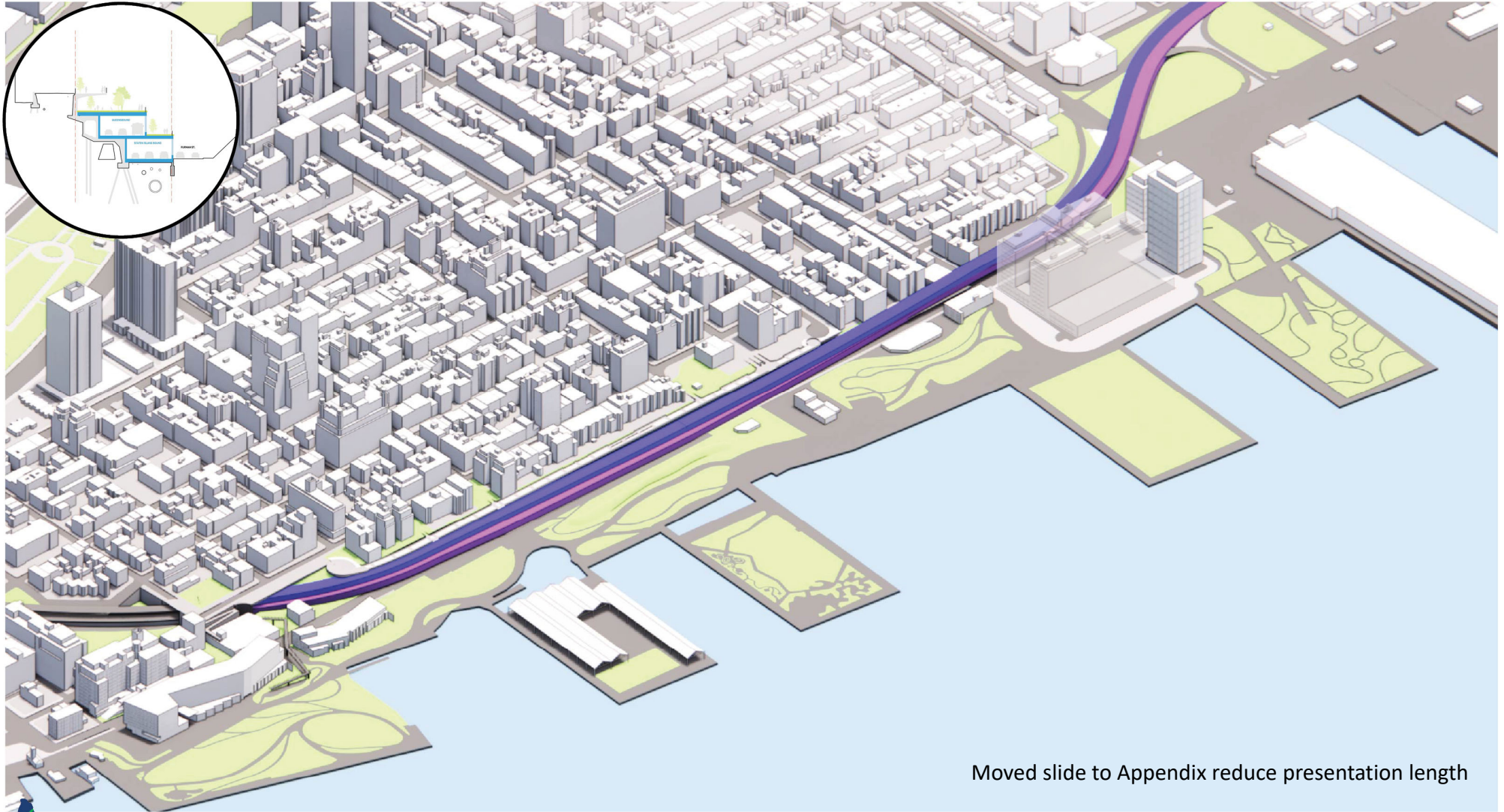
Below Street-Level Highway Geometry Assumptions

Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. The roadway configuration and structural dimensions are inaccurate and do not represent actual analysis or design.

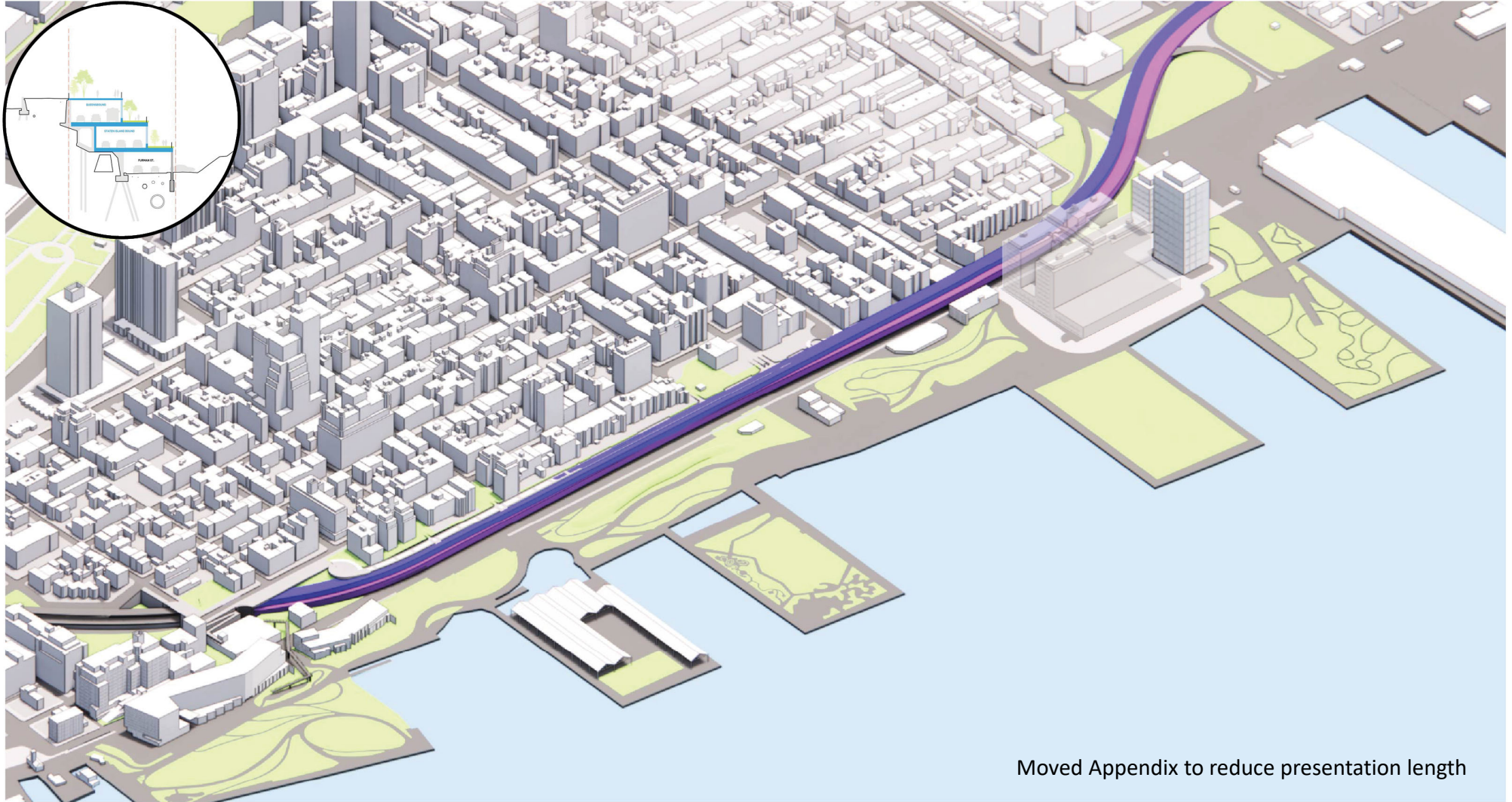


Triple Cantilever Roadway Studies

The Terraces | Partial Replacement



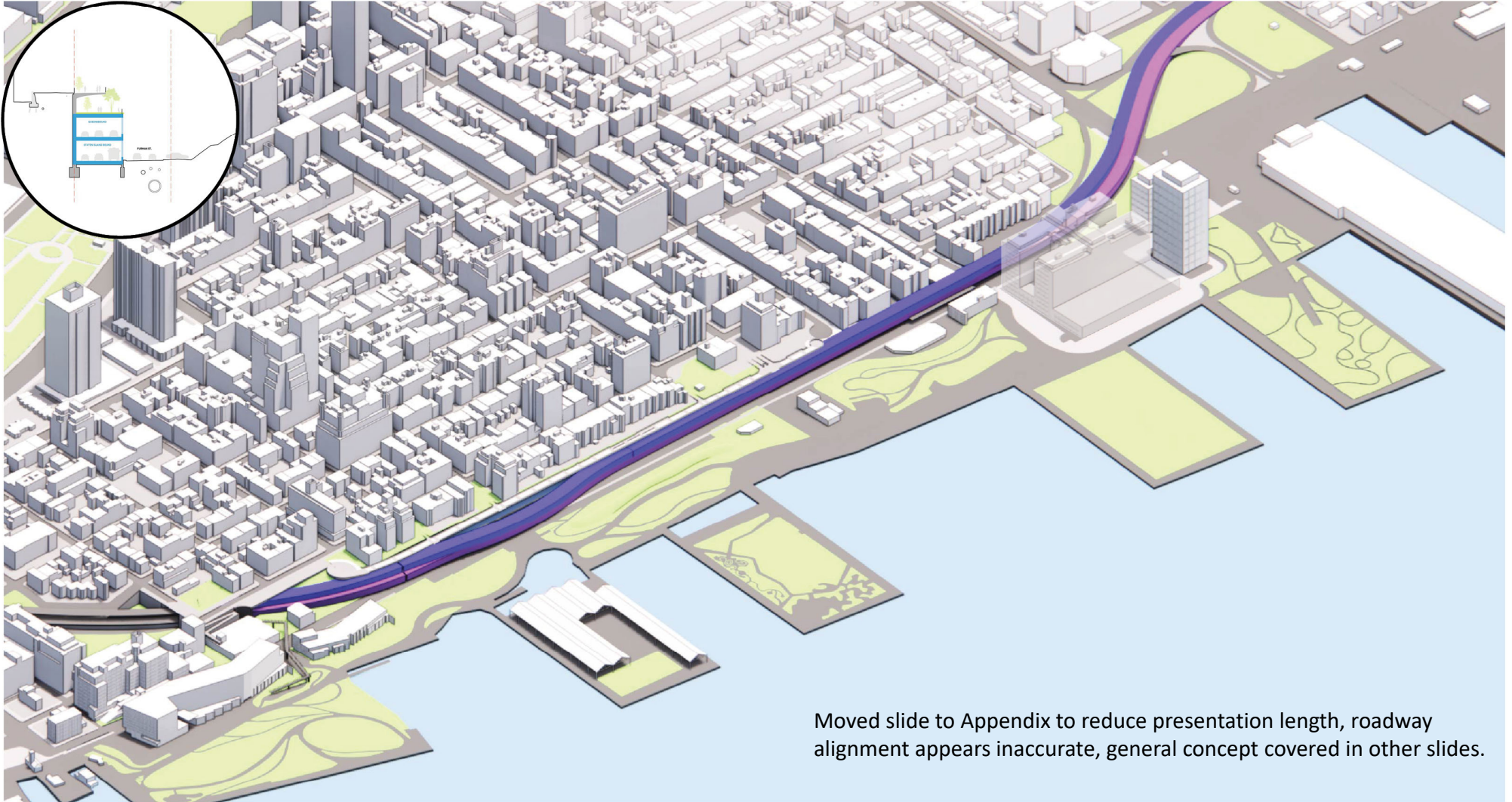
The Terraces | Partial Replacement



Moved Appendix to reduce presentation length



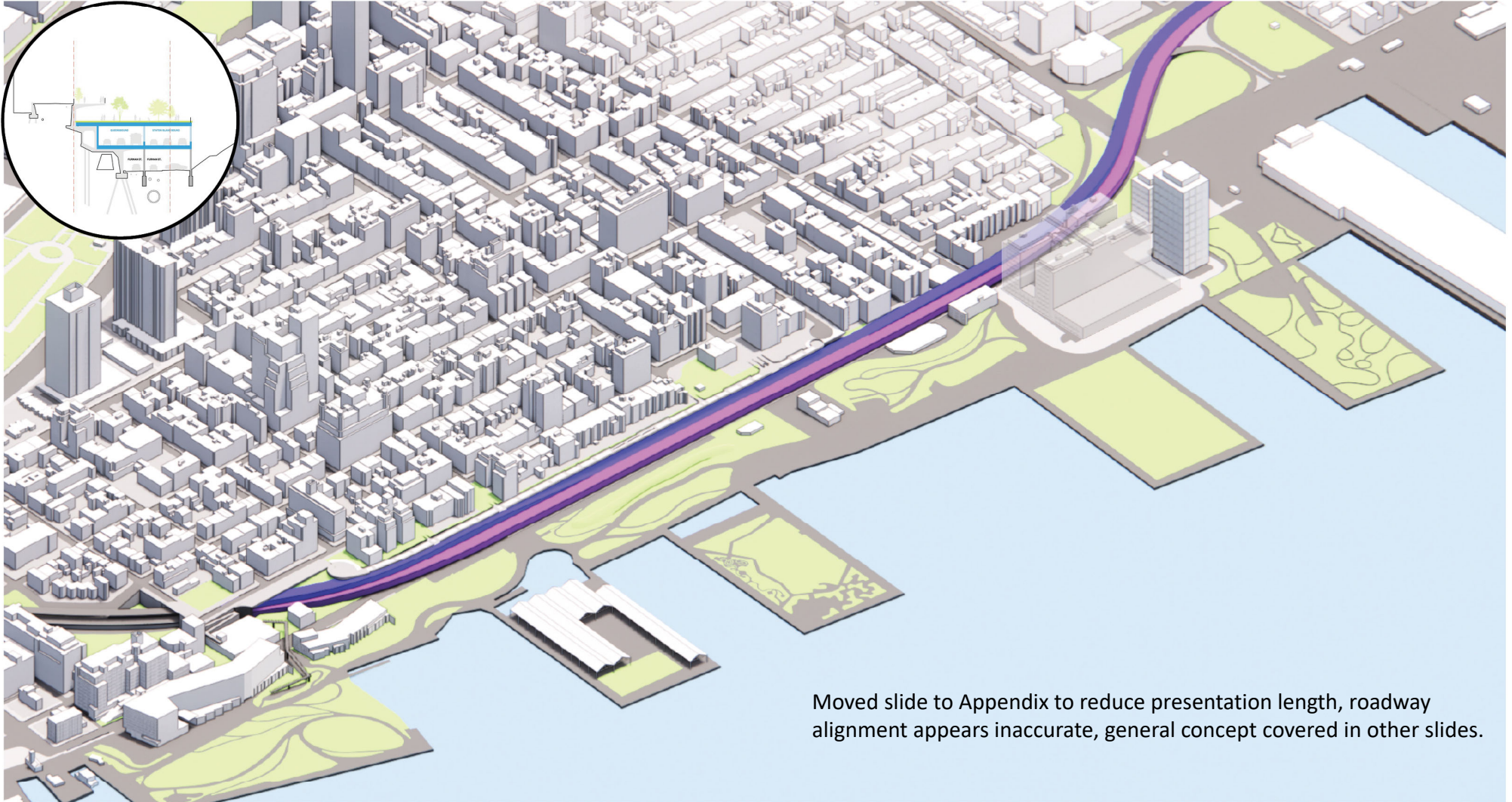
The Lookout | Full Replacement



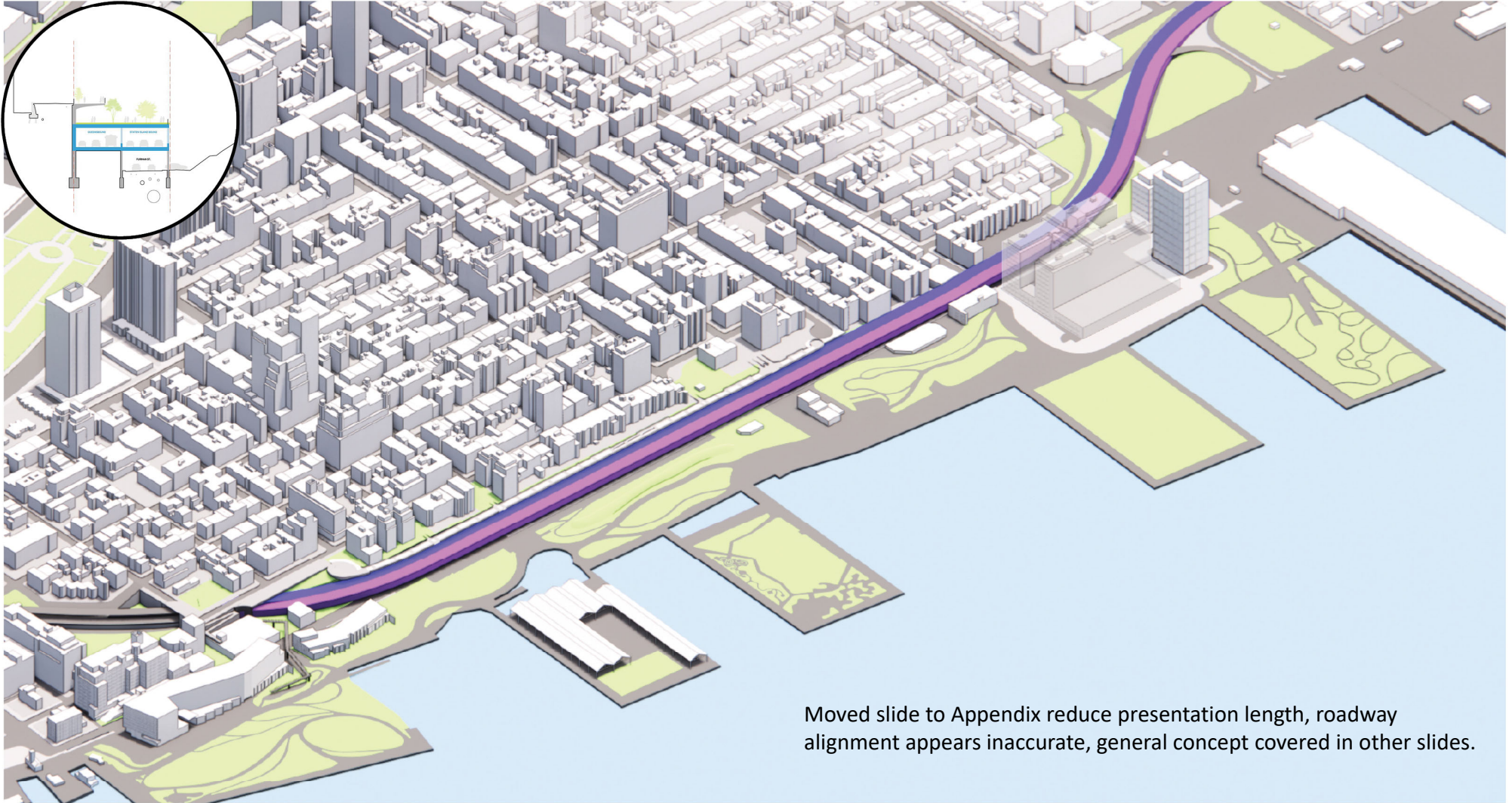
Moved slide to Appendix to reduce presentation length, roadway alignment appears inaccurate, general concept covered in other slides.



The Stoop | Partial Replacement



Single Level Above Grade Replacement

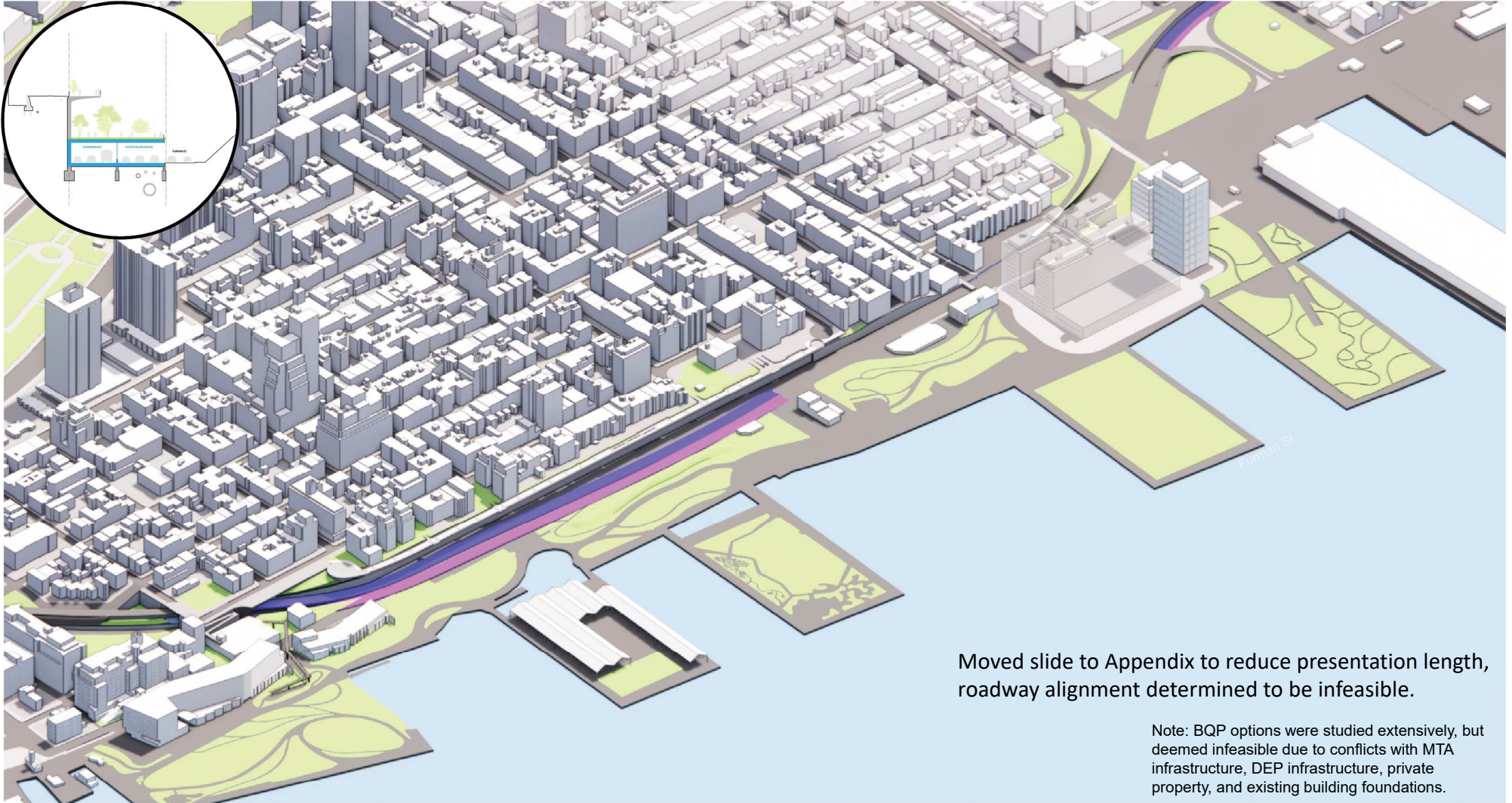


Moved slide to Appendix reduce presentation length, roadway alignment appears inaccurate, general concept covered in other slides.



BQP | Full Replacement

Avoid 



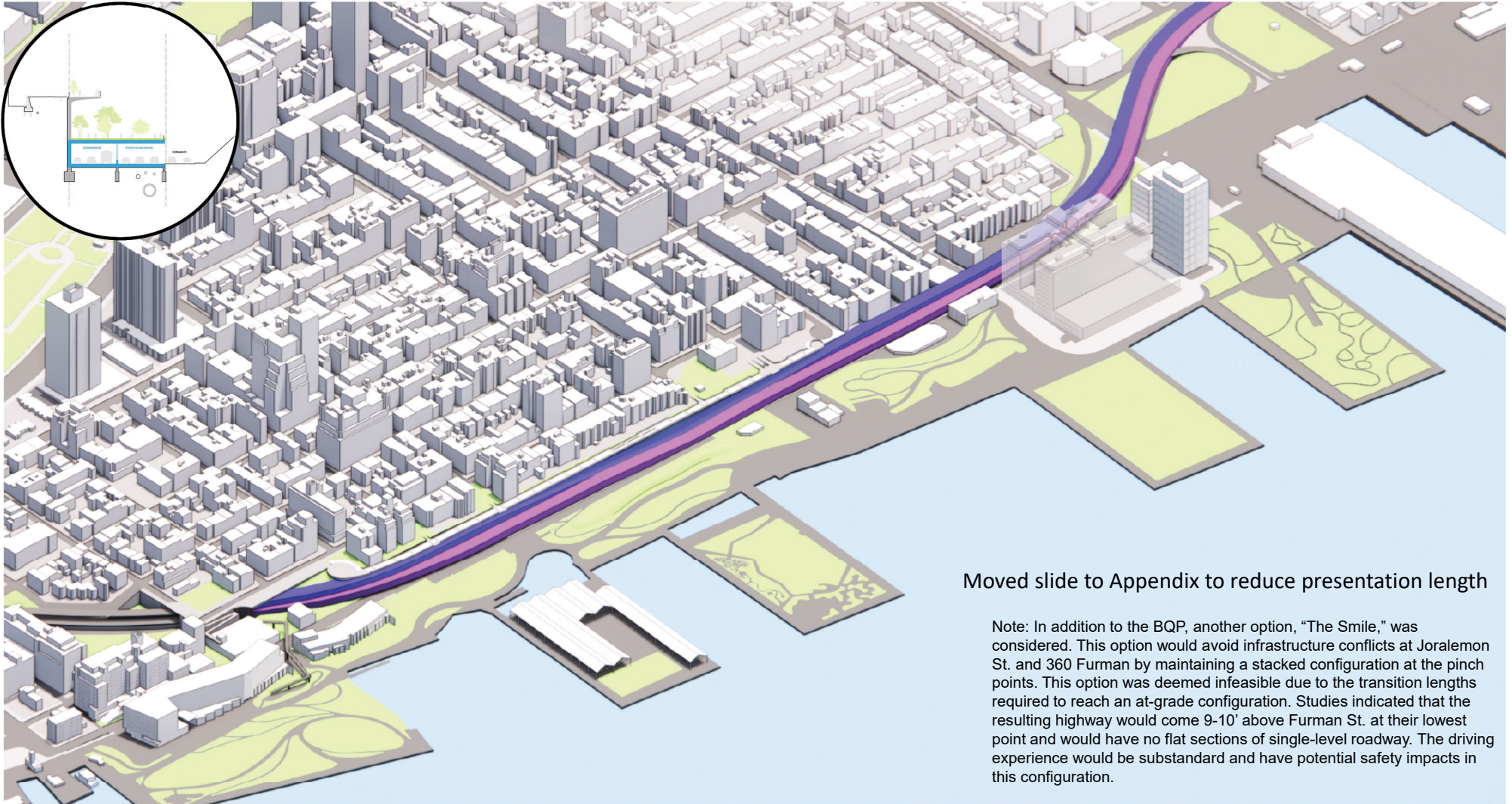
Moved slide to Appendix to reduce presentation length, roadway alignment determined to be infeasible.

Note: BQP options were studied extensively, but deemed infeasible due to conflicts with MTA infrastructure, DEP infrastructure, private property, and existing building foundations.



The Smile | Full Replacement

Avoid 



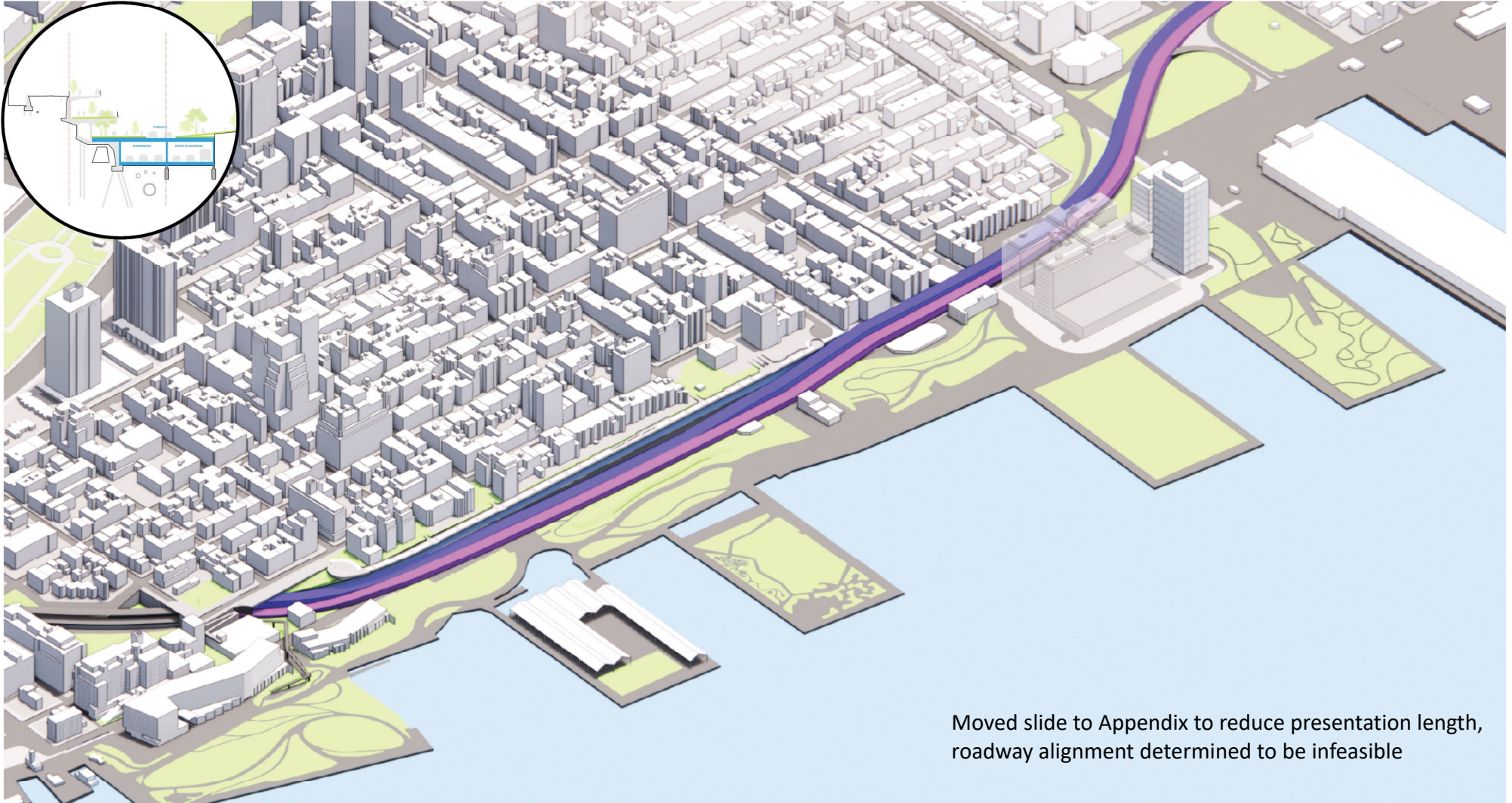
Moved slide to Appendix to reduce presentation length

Note: In addition to the BQP, another option, "The Smile," was considered. This option would avoid infrastructure conflicts at Joralemon St. and 360 Furman by maintaining a stacked configuration at the pinch points. This option was deemed infeasible due to the transition lengths required to reach an at-grade configuration. Studies indicated that the resulting highway would come 9-10' above Furman St. at their lowest point and would have no flat sections of single-level roadway. The driving experience would be substandard and have potential safety impacts in this configuration.



Single Level At Grade Partial Replacement

Avoid



**Preliminary Risk
Register Matrix
(November 2022)**

Risk Register

(PRELIMINARY)

BQE: DESIGN GUIDELINES									
ISSUE DESCRIPTION			EVALUATION PARAMETERS						Direction to Consultants
ID	CATEGORY	DESCRIPTION	BUDGET	PROJECT LIMITS	GRANT TIMELINE	STRUCTURAL CONDITION TIMELINE	EIS TIMELINE	LITIGATION RISK	
	TA Facilities	Shifting TA Facilities	HIGH	MODERATE	HIGH	HIGH	HIGH	HIGH	Avoid conflicts, at Clark St work around existing fan plant, review
4	DEP INTERCEPTOR	Shift inceptor	LOW	MODERATE	LOW	LOW	MODERATE	MODERATE	Review potential only if DEP has work planned for this interceptor
5	IMPACT ON PUBLIC PROPERTY	Connections to the park could impact ROW.	LOW	MODERATE	MODERATE	LOW	MODERATE	HIGH	Consider for open space/connections
6	IMPACT ON PRIVATE PROPERTY	Changes to elevations or access provide to greater flexibility in design concepts	LOW	LOW	HIGH	HIGH	HIGH	HIGH	Avoid
7	BROOKLYN BRIDGE	Explore opportunities to improve at grade connections	LOW	LOW	LOW	LOW	LOW	LOW	Explore
8	MANHATTAN BRIDGE	Manhattan Bridge to BQE direct connection	LOW	LOW	MODERATE	LOW	MODERATE	MODERATE	Explore
9	BROOKLYN BRIDGE PARK	Direct connection from Promenade to BBP	LOW	LOW	MODERATE	MODERATE	MODERATE	MODERATE	Explore
10	ATLANTIC AVE. INTERCHANGE (as planned)	Update interchange to address safety and operational changes	LOW	LOW	LOW	LOW	LOW	LOW	Explore
	ATLANTIC AVE. INTERCHANGE (if changed)	Option that changes roadway elevations significantly	MODERATE	HIGH	HIGH	MODERATE	HIGH	MODERATE	Avoid
11	2 Lane configuration	Structural width based on 2 lane configurations	LOW	HIGH	HIGH	MODERATE	HIGH	HIGH	Develop based on 3 lanes, 50' per anticipated FHWA regs, could be less at pinch points
12	Replacing or Maintaining Retaining Wall	Replacing wall allows more flexibility	LOW	LOW	LOW	LOW	LOW	HIGH	Explore
13	Covered Roadway Considerations	300' of less over covered sections	LOW	LOW	LOW	LOW	LOW	LOW	Explore and determine > 300' length of coverage without tunnel triggers
14	Covered Roadway Considerations	Longer covered sections that would cause tunnel type conditions	HIGH	MODERATE	MODERATE	MODERATE	HIGH	MODERATE	Avoid
15	Promenade Configuration & Maintaining the View Shed	View shed is defined in current zoning. Promenade modification	LOW	LOW	LOW	LOW	LOW	HIGH	Explore

Avoid MTA Conflicts

Explore DEP Conflict

Open Space connections to BBP (but not roadway)

No elevation change at Atlantic

3 Lanes (not 2) at 40-50'

Limit covers to 800'

Consider beyond scenic view corridor

Note: During the design process, in October and November 2022, NYC DOT evaluated an overall “risk register” to determine which types of conflicts and considerations might have significant implications that would negatively impact the overall timeline of the project. Risks were determined as High, Medium, or Low. This process resulted in a set of general design guidelines provided to the design and engineering team.

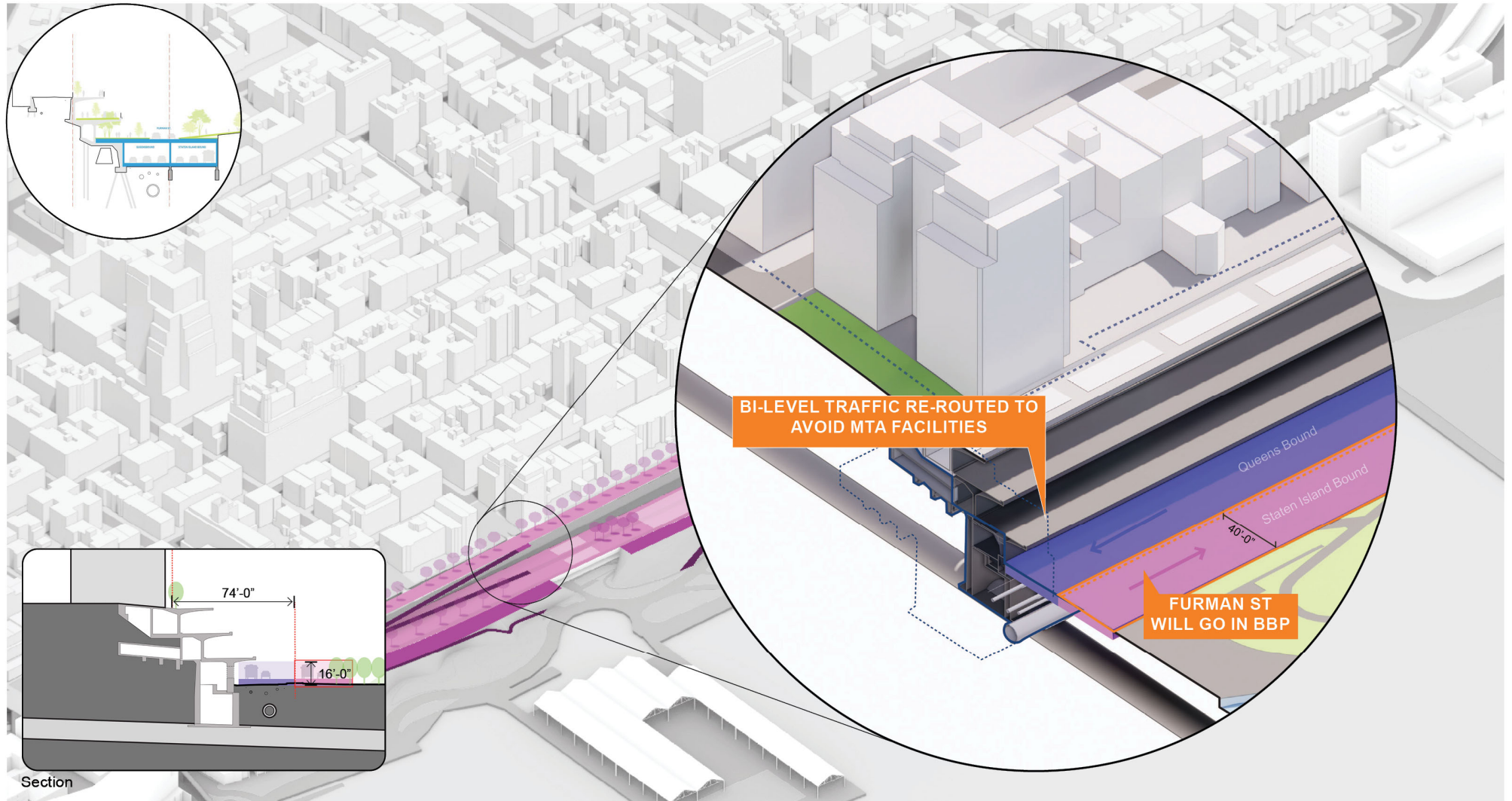
Guidelines provided a framework for design and engineering. Nonetheless, roadway configurations that went beyond the risk register recommendations were studied extensively and explored by NYC DOT throughout the design process and will be appropriately reviewed during environmental approval process.



Constraints Study Zoom-in

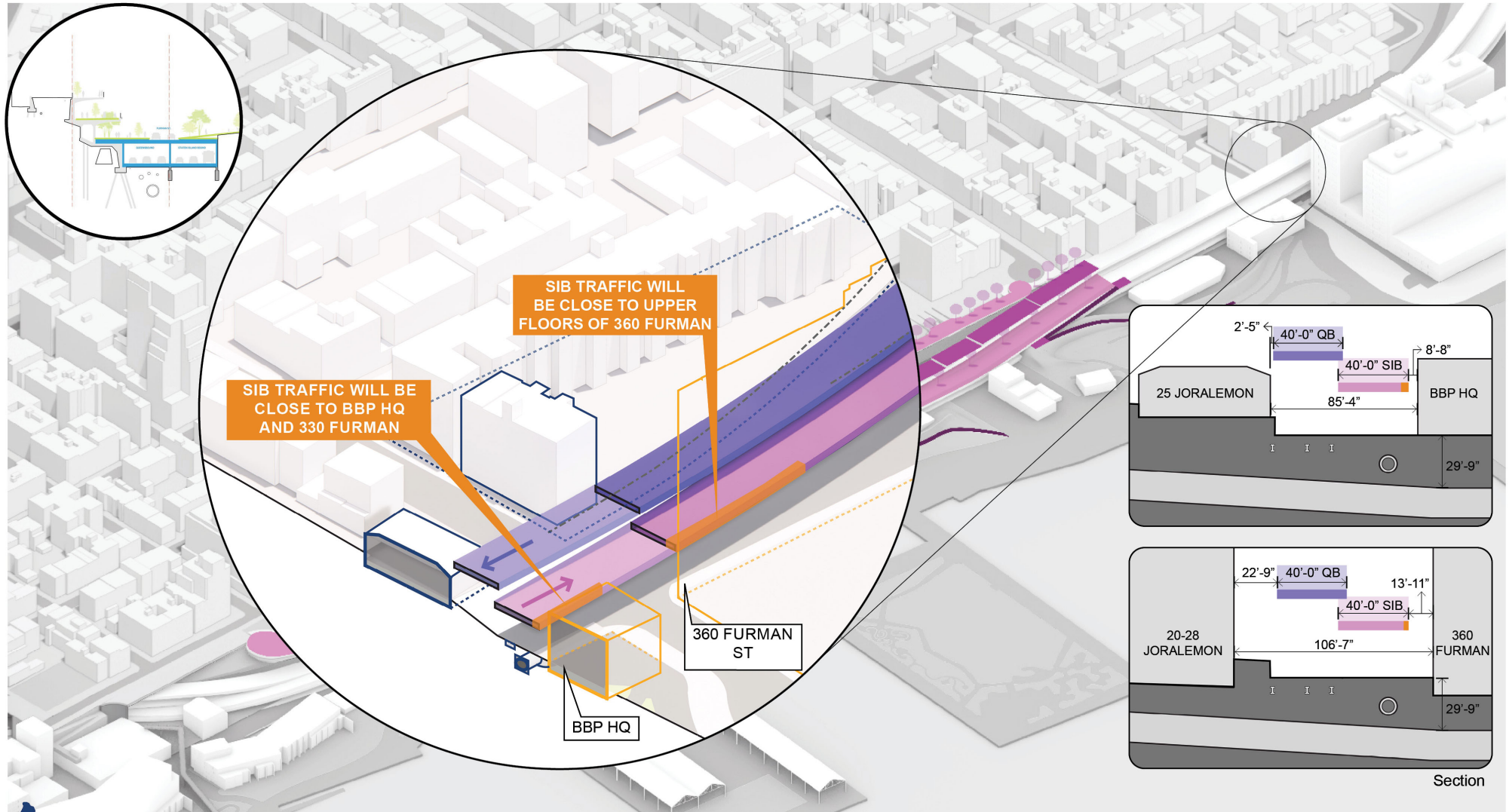
BQP | Full Replacement

Moved slide to Appendix to reduce presentation length, leave more time to discuss feasible concepts. These roadway configurations have no basis in analysis or design.



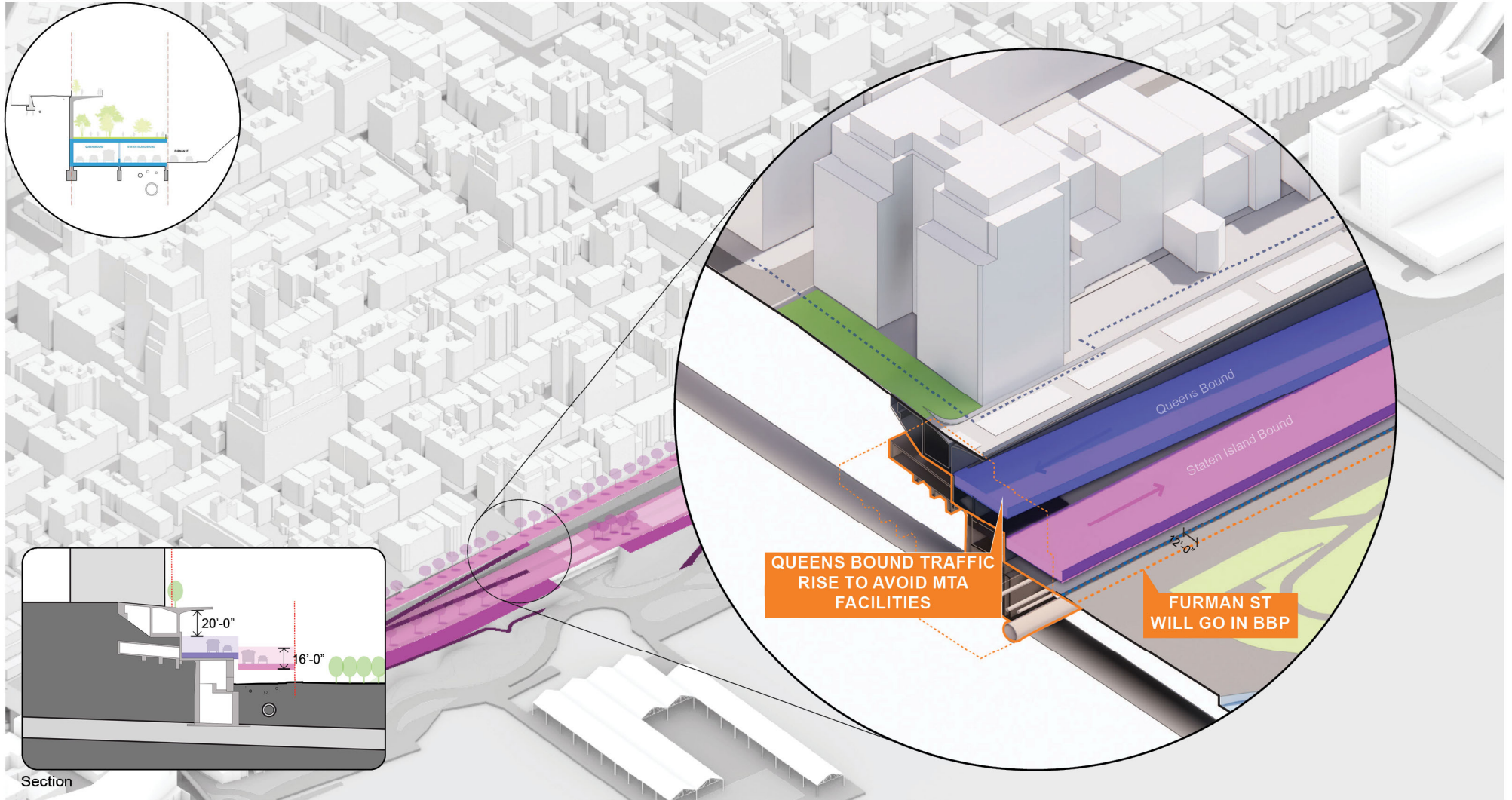
BQP | Full Replacement

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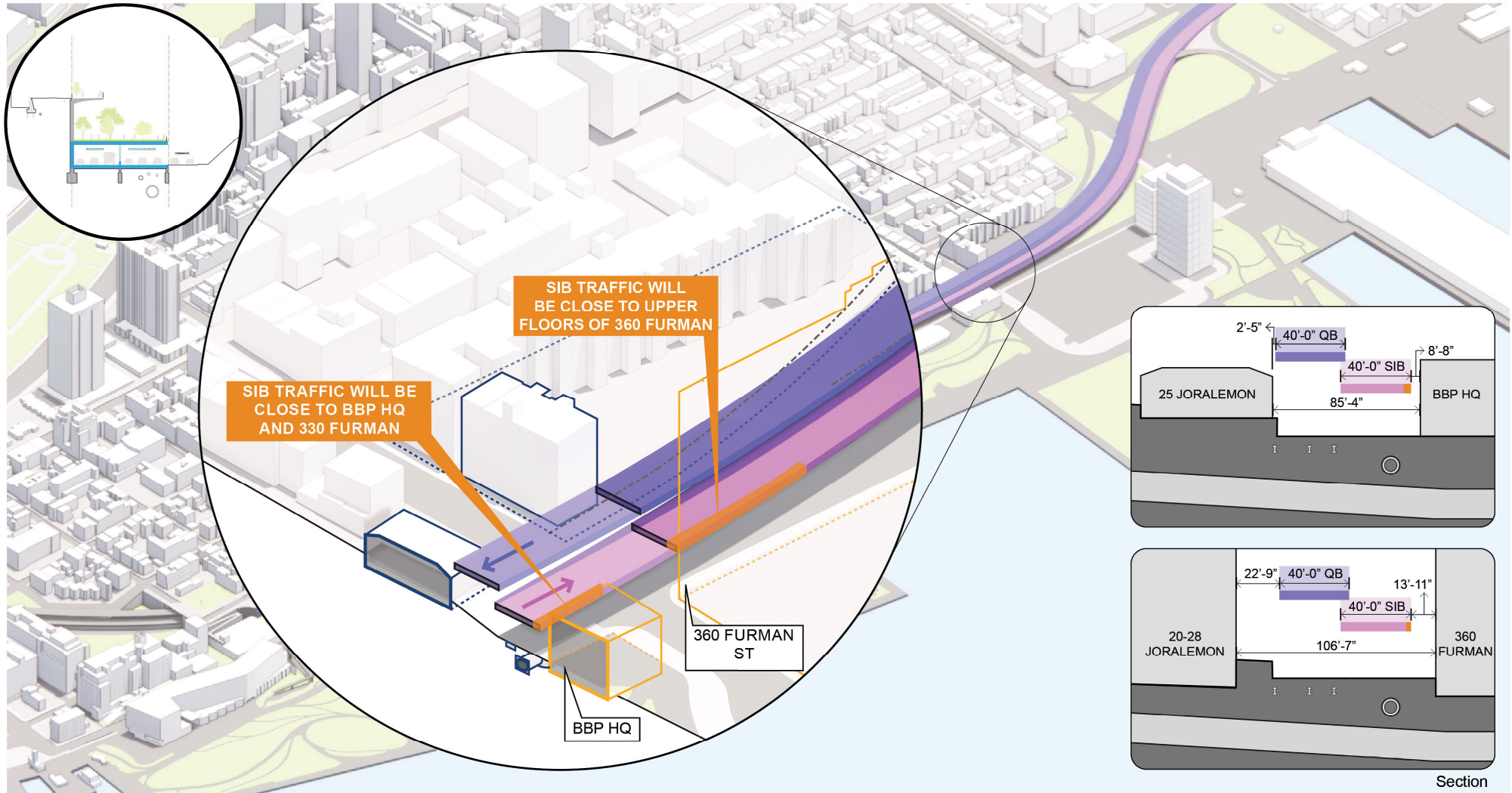
The Smile | Full Replacement

Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.



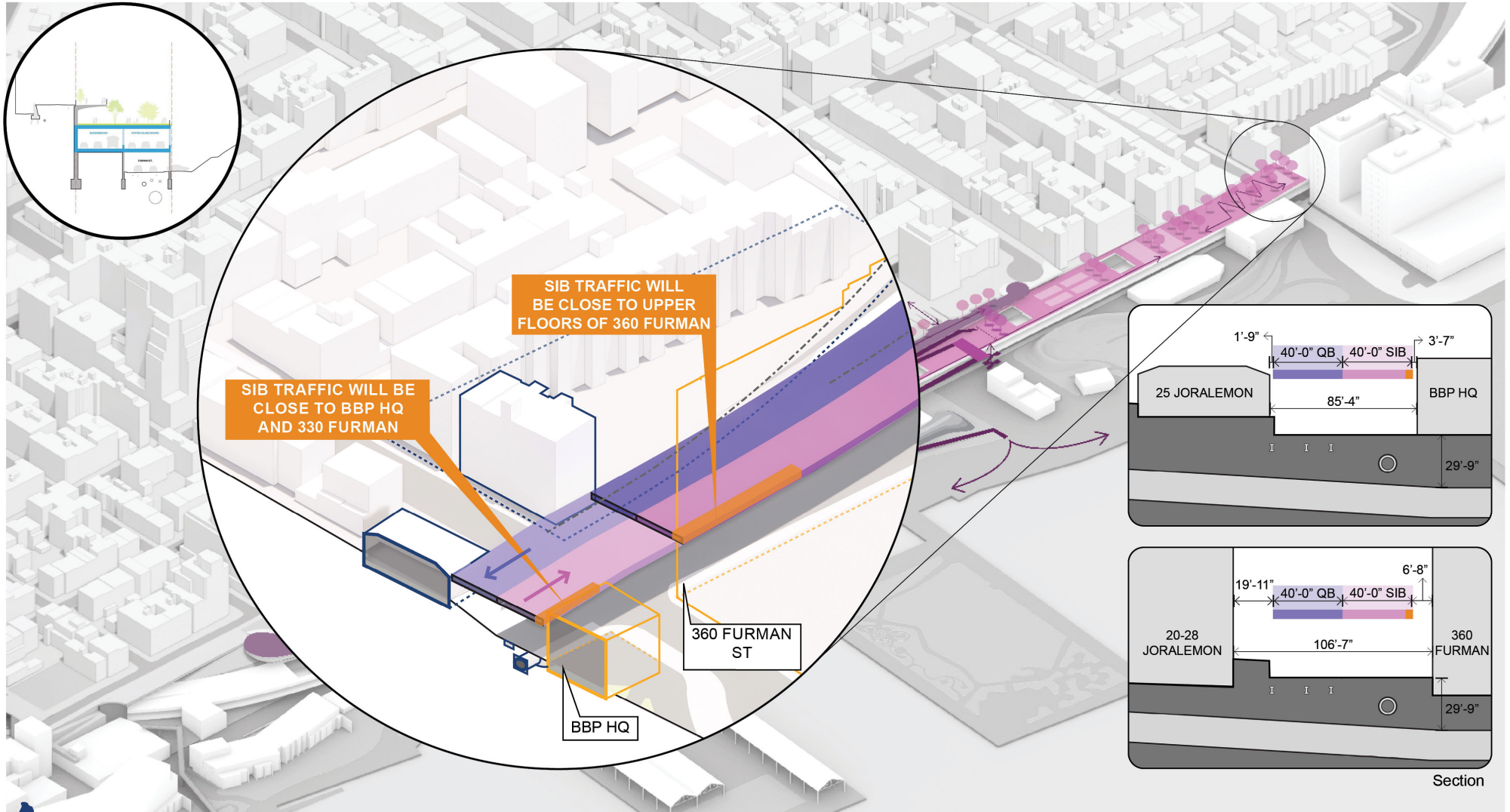
The Smile | Full Replacement

Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.



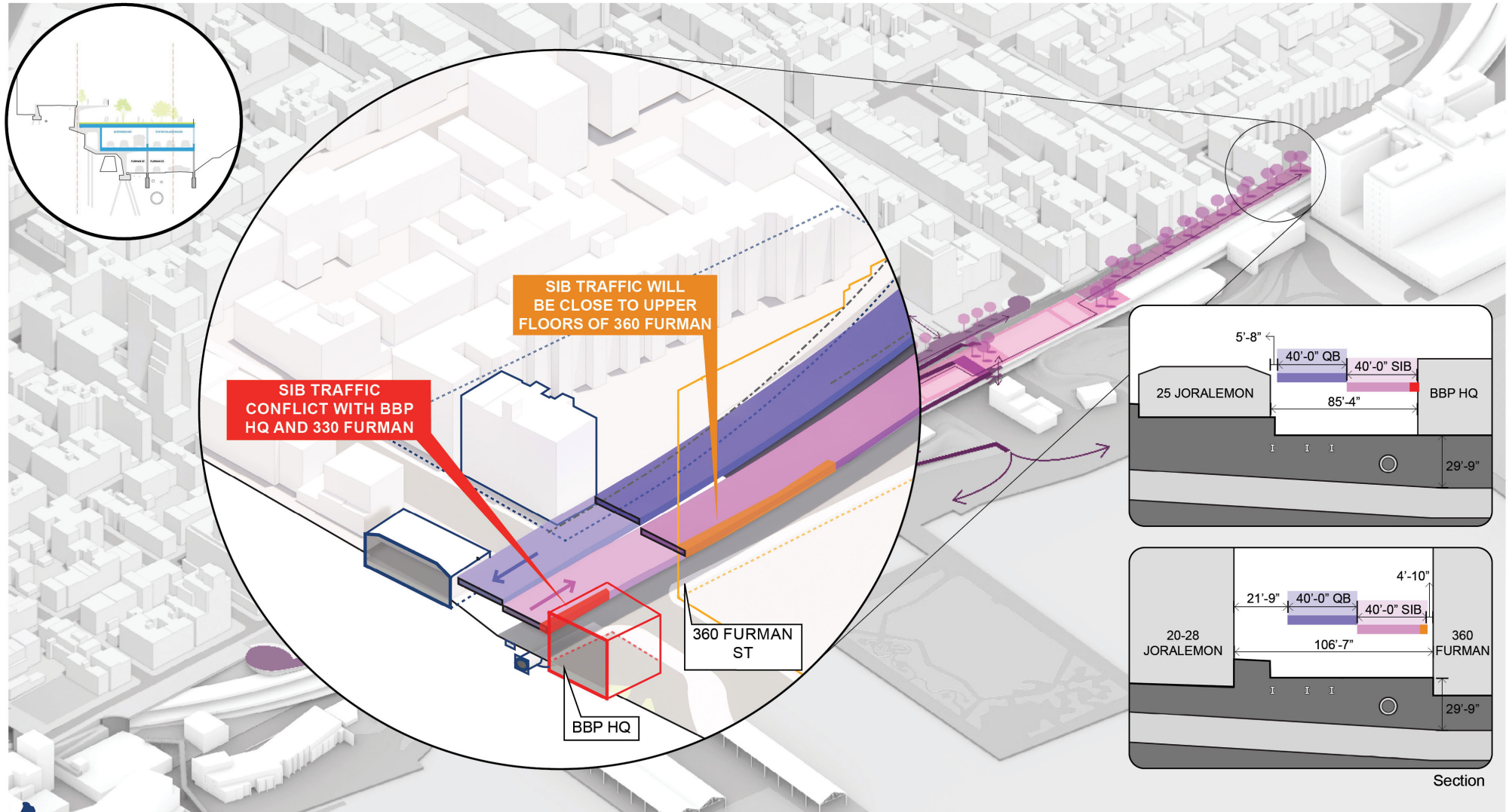
The Smile | Full Replacement

Moved slide to Appendix to reduce presentation length.
Roadway geometry in this configuration not feasible.



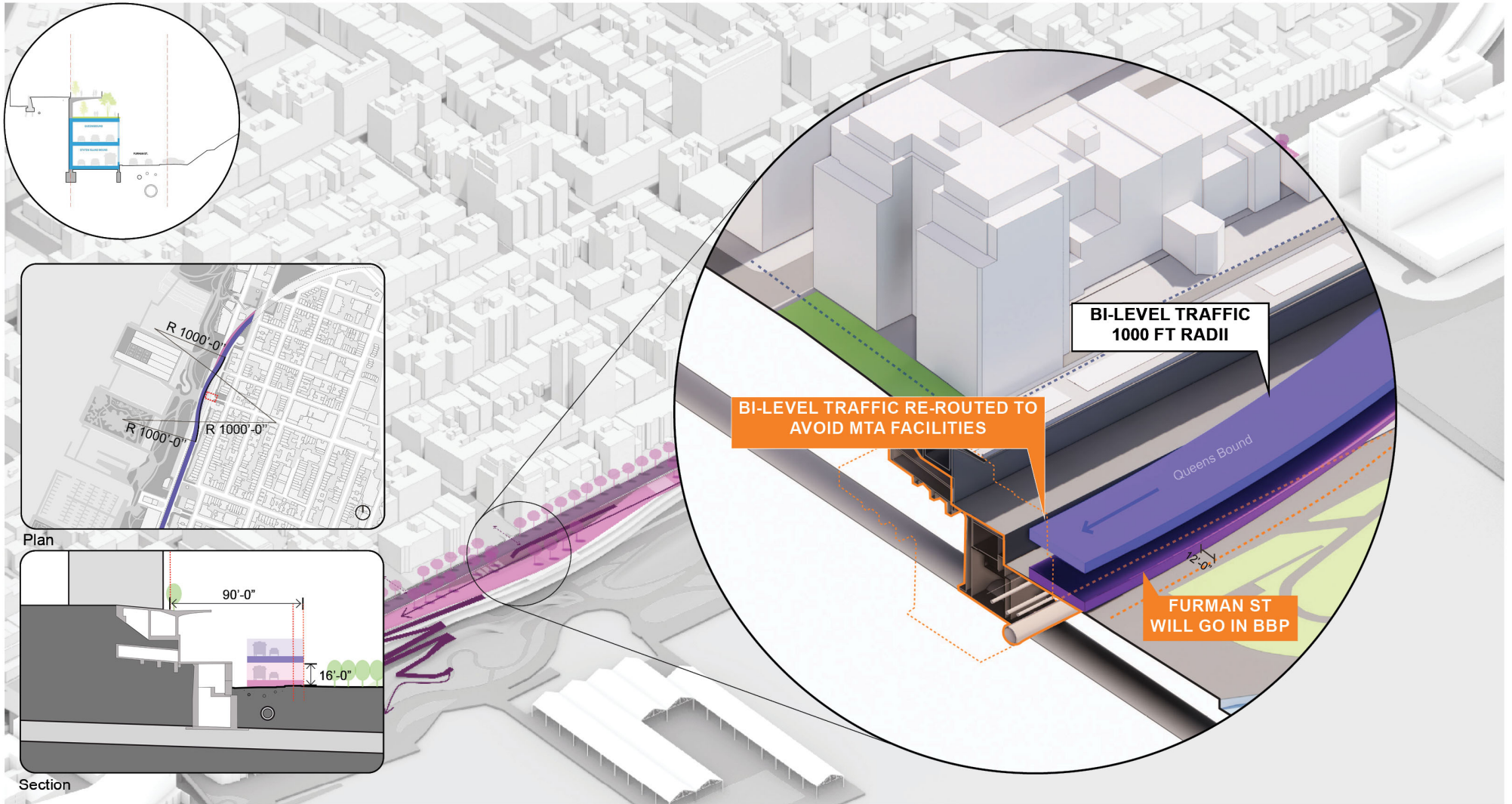
The Stoop | Partial Replacement

Moved slide to Appendix to reduce presentation length. Roadway geometry in this configuration not feasible in this section.



The Lookout | Full Replacement

Moved slide to Appendix to reduce presentation length. Roadway geometry in this configuration not feasible.

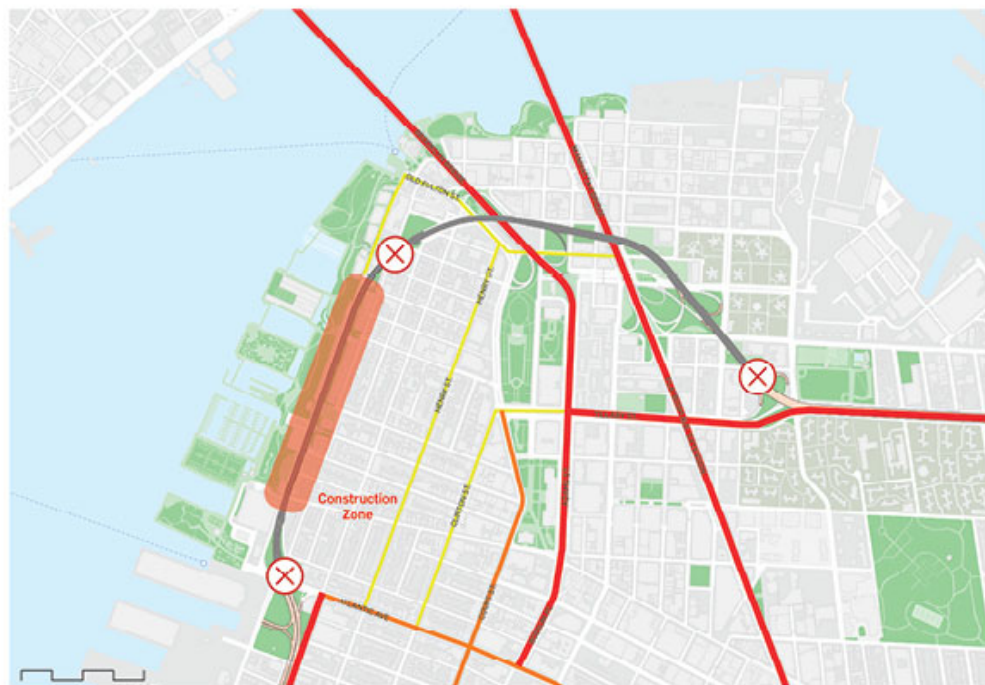


Interim Condition

Construction Process Bypass or Diversion

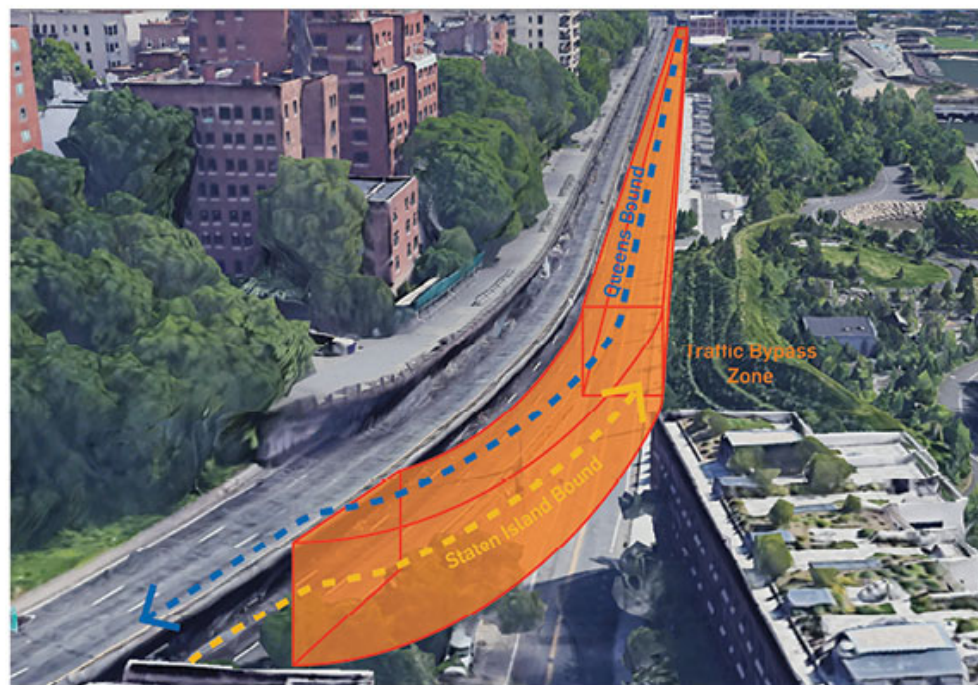
Note: Construction phasing and staging alternatives were not studied during the concept development in preparation for NYC DOT's December 2022 workshop. Construction phasing and staging, including potential trade-offs related to bypass structures or diversions, will be evaluated in greater depth and shared with the public in future workshops. Graphic below based on older studies, not directly relevant to current discussion.

Option 1: Continuous Traffic Diversions



This option requires ongoing overnight closures and several weekend shutdowns. Wherever a temporary bypass is not used, overnight and weekend diversions will increase. Different areas of the triple cantilever can use different options.

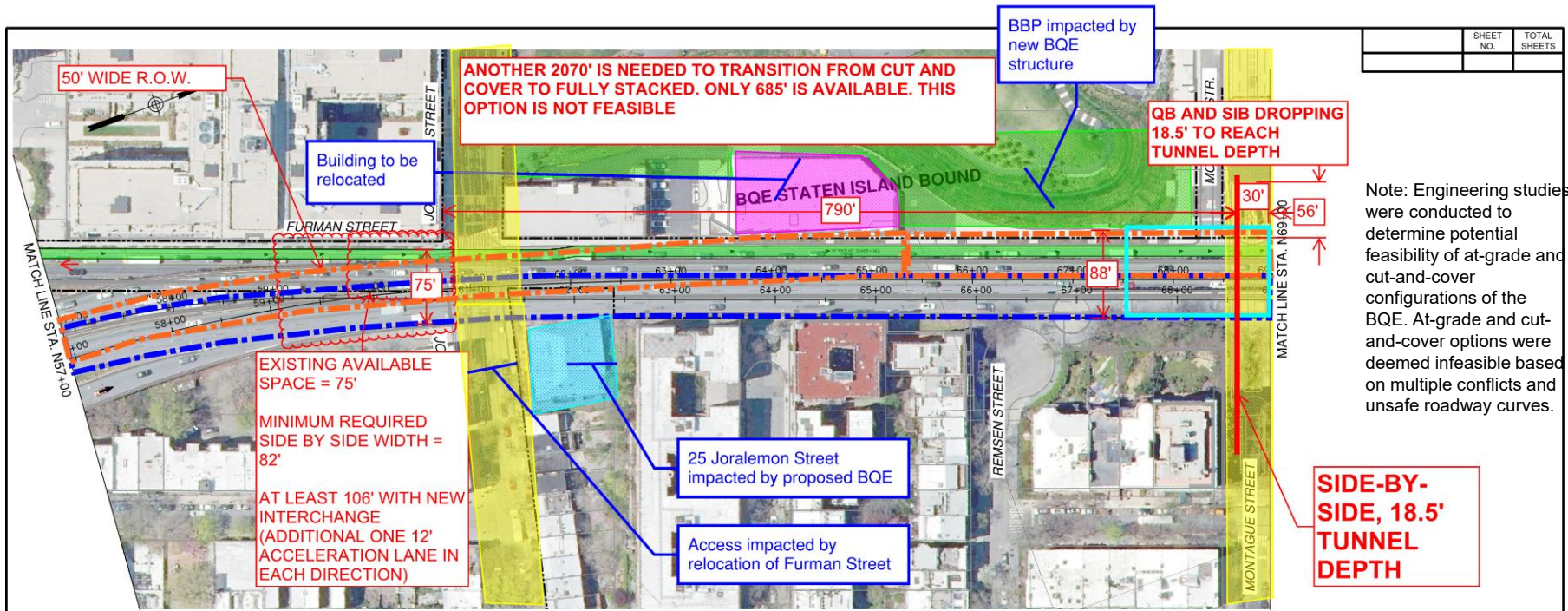
Option 2: Bypass



This option requires building a temporary structure that reroutes traffic off the BQE to allow the BQE to be under construction. Any bypass would take around one year to build and be in service for two to three years, with less time for shorter segments.

Engineering Analysis

Single Level Cut and Cover to At-Grade to Bi-level Transition



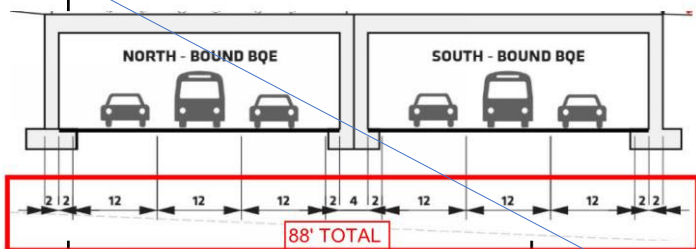
Note: Engineering studies were conducted to determine potential feasibility of at-grade and cut-and-cover configurations of the BQE. At-grade and cut-and-cover options were deemed infeasible based on multiple conflicts and unsafe roadway curves.

Engineering analysis for review of certain concepts showing infeasibility

TO CLIMB 17' AT 5% GRADE = 340'
TO CLIMB 35' AT 5% GRADE = 700'

1000' TO HORIZONTALLY SHIFT 3 LANES SIDE BY SIDE TO STACKED

1700' TOTAL TO TRANSITION FROM SIDE TO SIDE AT GRADE TO FULLY STACKED



LEGEND: R.O.W.

TRIPLE CANTILEVER DESIGN JV
100 BROADWAY
NEW YORK, N.Y. 10005

PREPARED BY
IN CHARGE M.S. DRAFTER Y.K.
DESIGNER L.S. CHECKER N.B.

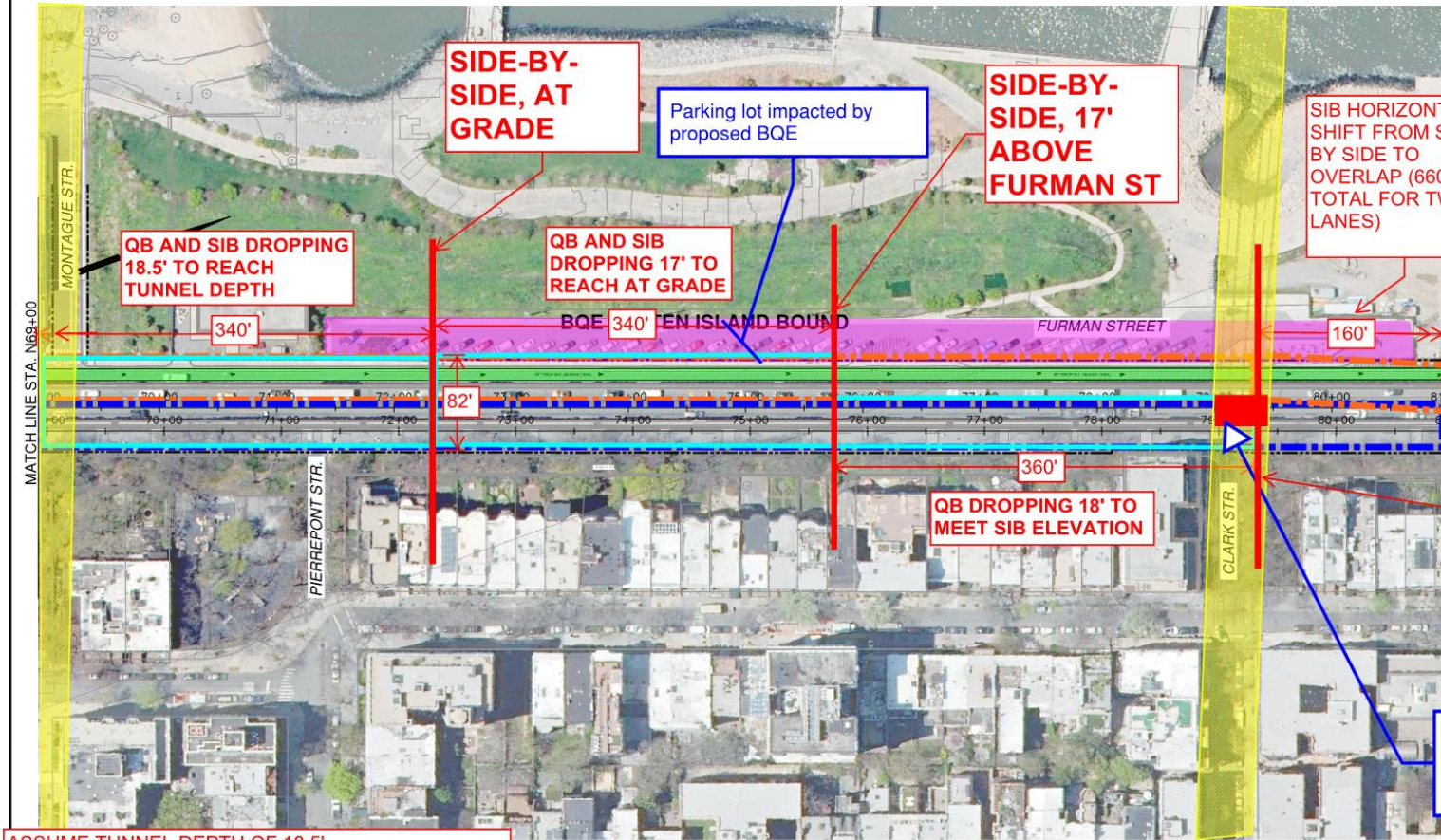


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NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO. 84116BKB981	
CONTRACT NO. HBKBQE	CD NO.
BQE WEIGHT-IN-MOTION AT SUMMIT STREET	
BOROUGH OF BROOKLYN	B.I.N.
AREA 2 FROM JORALEMON ST. TO PINEAPPLE ST. PROPOSED SIB PLANS	
DWG. NO. BQP-2	SHEET NO. 2
SCALE 1"=100'	DATE

Single Level Cut and Cover to At-Grade to Bi-level Transition

SHEET NO.	TOTAL SHEETS



Note: Engineering studies were conducted to determine potential feasibility of at-grade and cut-and-cover configurations of the BQE. At-grade and cut-and-cover options were deemed infeasible based on multiple conflicts and unsafe roadway curves.

ASSUME TUNNEL DEPTH OF 18.5'
4' STRUCTURE DEPTH
14.5' VERTICAL CLEARANCE

1360' TOTAL TO TRANSITION FROM SIDE TO SIDE AT GRADE TO PARTIALLY STACKED AT COLUMBIA HEIGHTS

TO CLIMB 36' AT 5% GRADE = 720'
TO CLIMB 54' AT 5% GRADE = 1080'
TO CLIMB 24' AT 5% GRADE = 480'

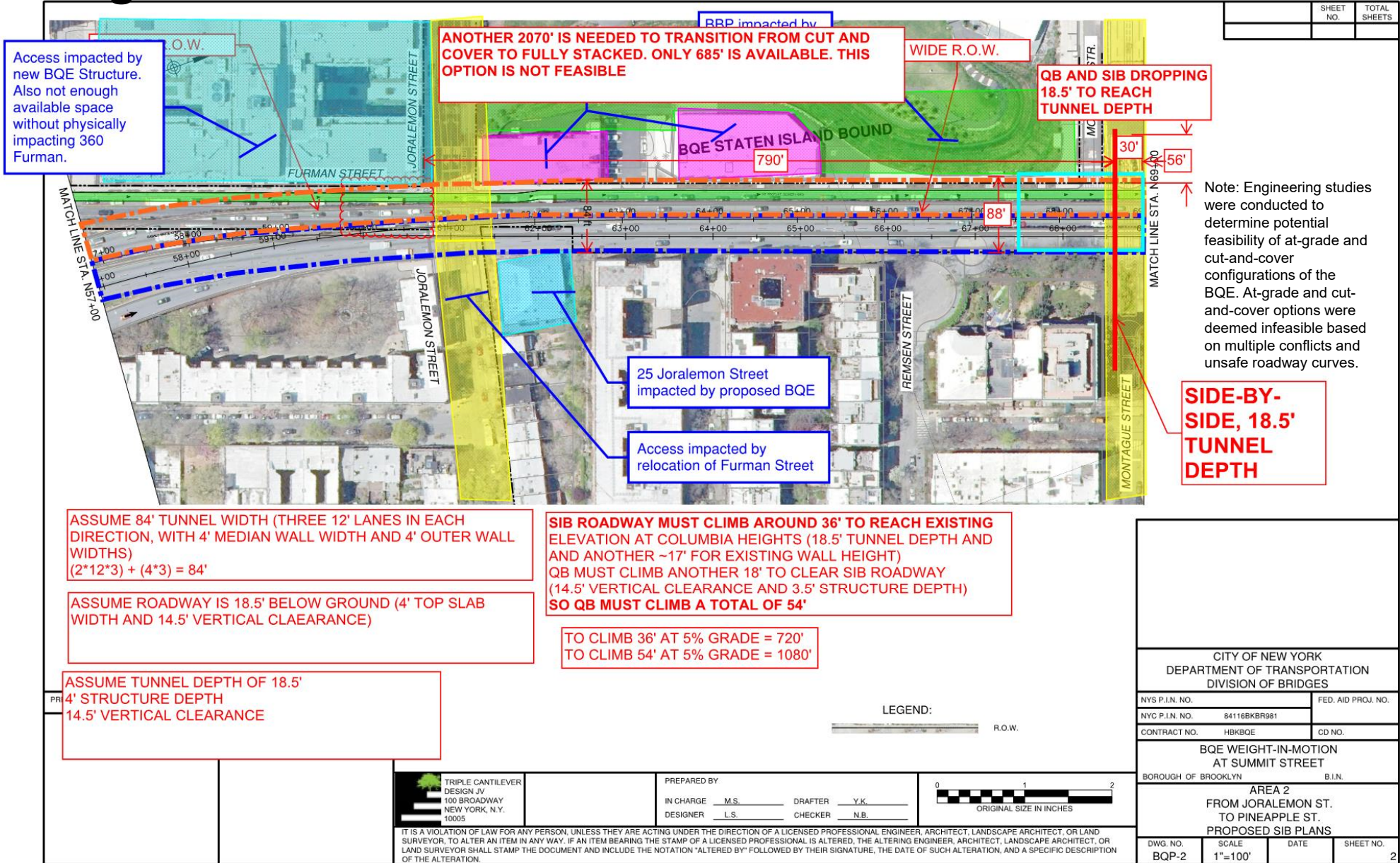
SIDE-BY-SIDE WITH QB 18' ABOVE SIB

Existing Clark Street substation and proposed stairs

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION DIVISION OF BRIDGES	
NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO. 84116BKBR981	
CONTRACT NO. HKBKOE	CD NO.
BQE WEIGHT-IN-MOTION AT SUMMIT STREET	
BOROUGH OF BROOKLYN B.I.N.	
AREA 3 FROM JORALEMON ST. TO PINEAPPLE ST. PROPOSED SIB PLANS	
DWG. NO. BQP-3	SCALE 1"=100'
DATE	SHEET NO. 3

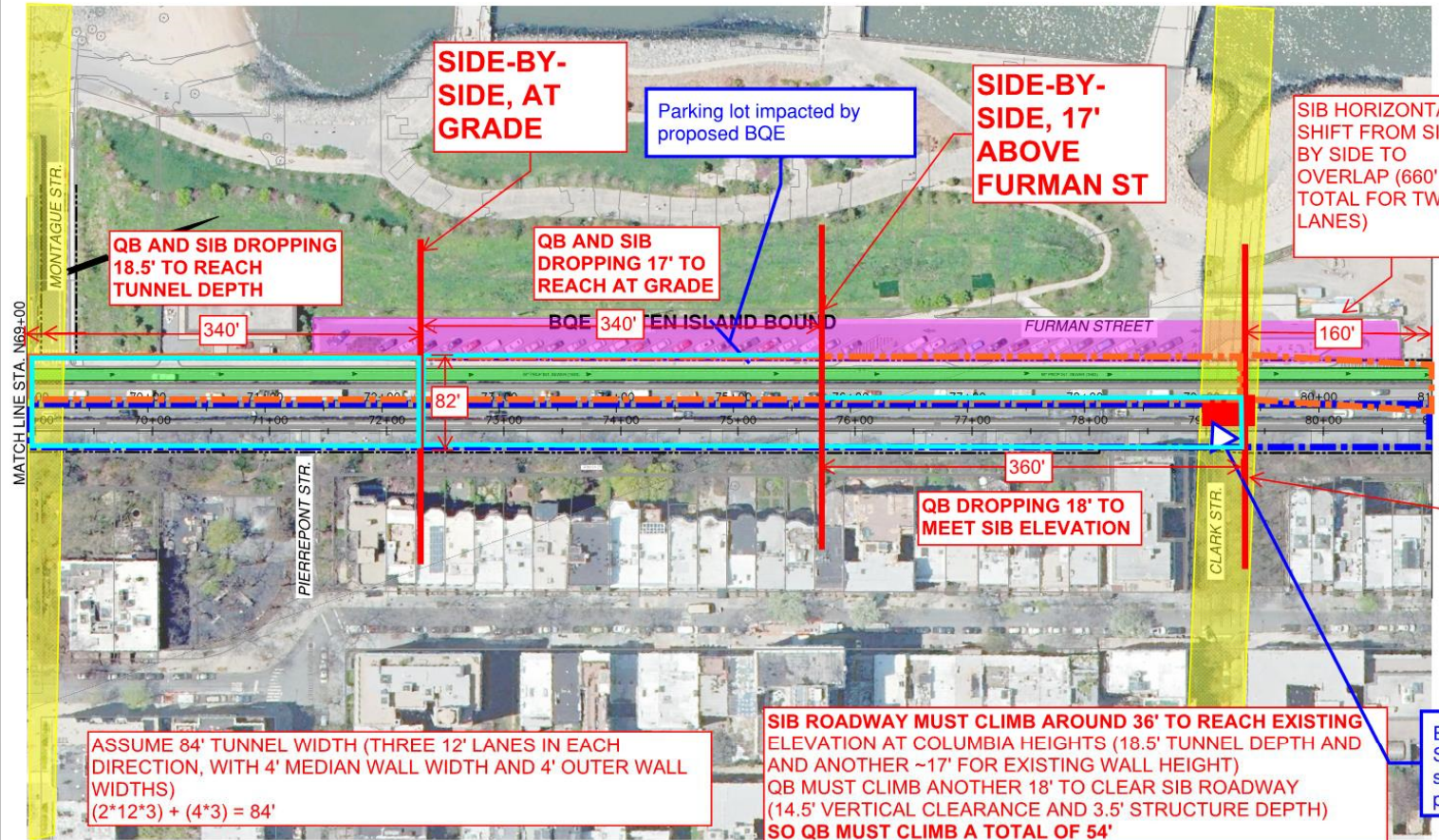
TRIPLE CANTILEVER DESIGN JV 100 BROADWAY NEW YORK, N.Y. 10005	PREPARED BY		ORIGINAL SIZE IN INCHES
	IN CHARGE M.S.	DRAFTER Y.K.	
	DESIGNER L.S.	CHECKER N.B.	
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.			

Single Level Cut and Cover to Bi-level Transition



Single Level Cut and Cover to Bi-level Transition

SHEET NO.	TOTAL SHEETS



Note: Engineering studies were conducted to determine potential feasibility of at-grade and cut-and-cover configurations of the BQE. At-grade and cut-and-cover options were deemed infeasible based on multiple conflicts and unsafe roadway curves.

SIDE-BY-SIDE WITH QB 18' ABOVE SIB

Existing Clark Street substation and proposed stairs

ASSUME 84' TUNNEL WIDTH (THREE 12' LANES IN EACH DIRECTION, WITH 4' MEDIAN WALL WIDTH AND 4' OUTER WALL WIDTHS)
 $(2 \times 12 \times 3) + (4 \times 3) = 84'$

SIB ROADWAY MUST CLIMB AROUND 36' TO REACH EXISTING ELEVATION AT COLUMBIA HEIGHTS (18.5' TUNNEL DEPTH AND ANOTHER ~17' FOR EXISTING WALL HEIGHT)
 QB MUST CLIMB ANOTHER 18' TO CLEAR SIB ROADWAY (14.5' VERTICAL CLEARANCE AND 3.5' STRUCTURE DEPTH)
SO QB MUST CLIMB A TOTAL OF 54'

SIB ROADWAY NEEDS 1000' TO HORIZONTALLY SHIFT ALL 3 LANES FROM SIDE BY SIDE TO FULL OVERLAP WITH QB

TO CLIMB 36' AT 5% GRADE = 720'
 TO CLIMB 54' AT 5% GRADE = 1080'

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 NEW YORK, N.Y.
 10005

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 IN CHARGE M.S. DRAFTER Y.K.
 DESIGNER L.S. CHECKER N.B.

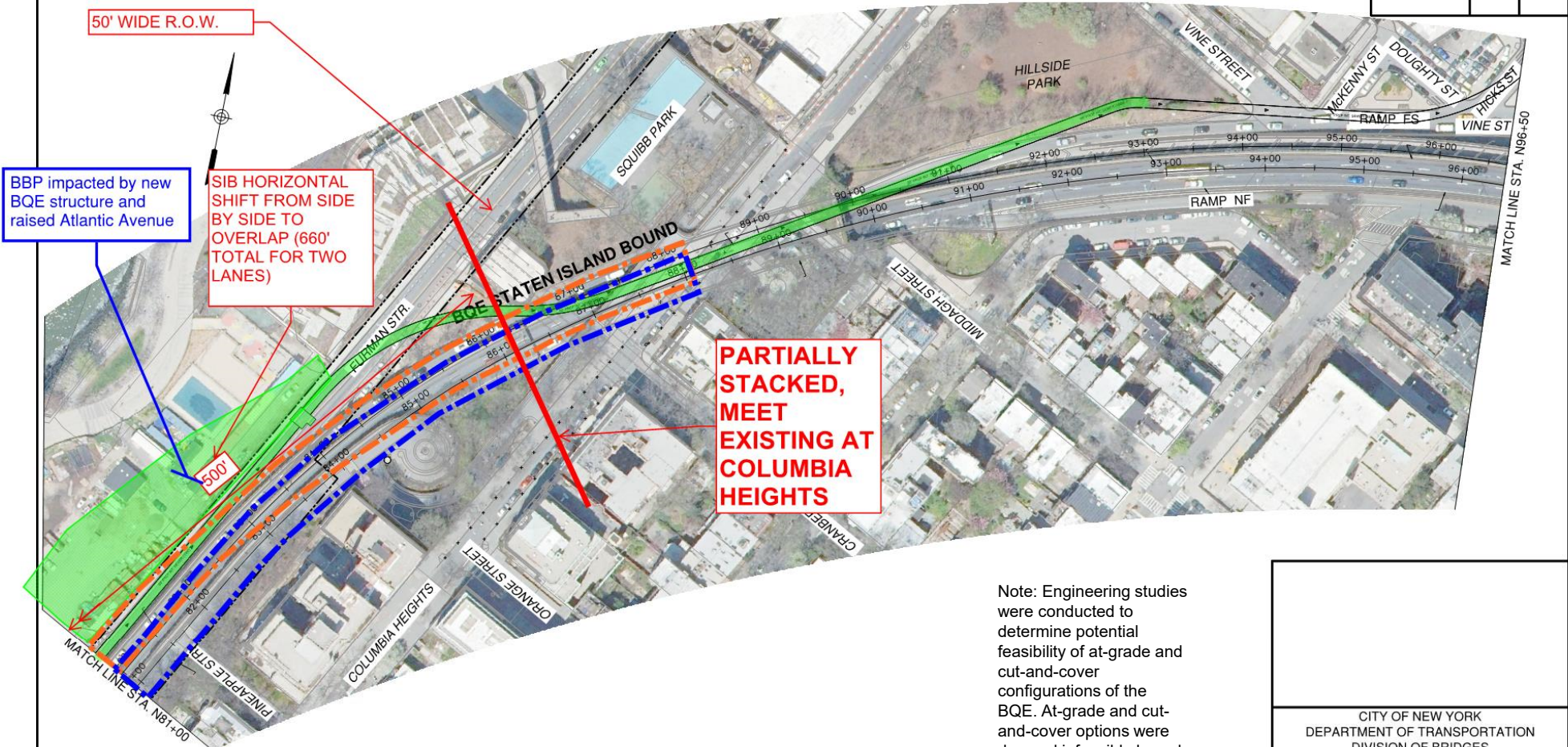


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NY'S P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO. 84116BKBR981	
CONTRACT NO. HBKBOE	CD NO.
BQE WEIGHT-IN-MOTION AT SUMMIT STREET BOROUGH OF BROOKLYN B.I.N.	
AREA 3 FROM JORALEMON ST. TO PINEAPPLE ST. PROPOSED SIB PLANS	
DWG. NO. BQP-3	SCALE 1"=100'
DATE	SHEET NO. 3

Single Level Cut and Cover to Bi-level Transition

SHEET NO.	TOTAL SHEETS



Note: Engineering studies were conducted to determine potential feasibility of at-grade and cut-and-cover configurations of the BQE. At-grade and cut-and-cover options were deemed infeasible based on multiple conflicts and unsafe roadway curves.

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DESIGN JV
100 BROADWAY
NEW YORK, N.Y.
10005

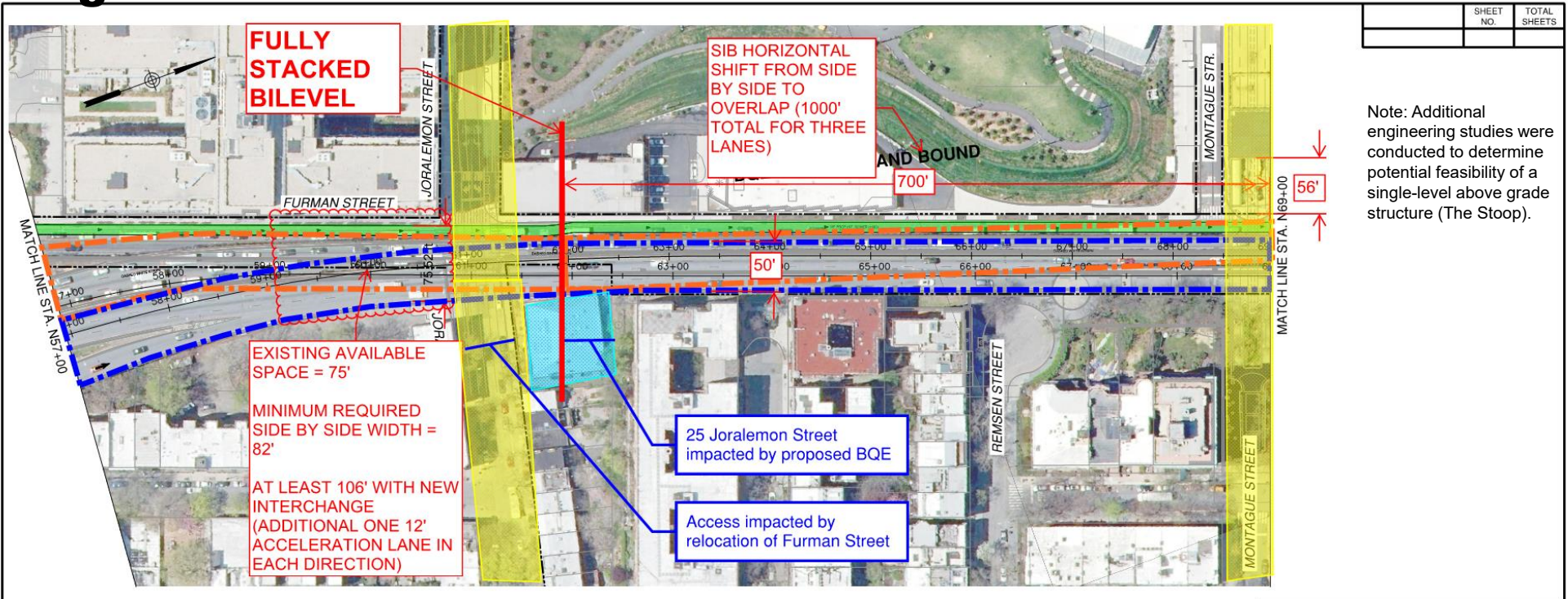
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NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO. 841168KBR981	
CONTRACT NO. HBKBOE	CD NO.
BQE WEIGHT-IN-MOTION AT SUMMIT STREET BOROUGH OF BROOKLYN B.I.N.	
AREA 4 FROM PINEAPPLE ST. TO OLD FULTON ST. PROPOSED SIB PLANS	
DWG. NO. BQP-4	SCALE 1"=100'
DATE	SHEET NO. 4

Single Level Viaduct to Stacked



Note: Additional engineering studies were conducted to determine potential feasibility of a single-level above grade structure (The Stoop).

ASSUME 80' SIDE BY SIDE WIDTH (THREE 12' LANES IN EACH DIRECTION, WITH 4' MEDIAN WALL WIDTH AND 2' OUTER WALL WIDTHS)
 $(2 \times 12 \times 3) + (4) + (2 \times 2) = 80'$

PREPARED BY	ALTERED BY



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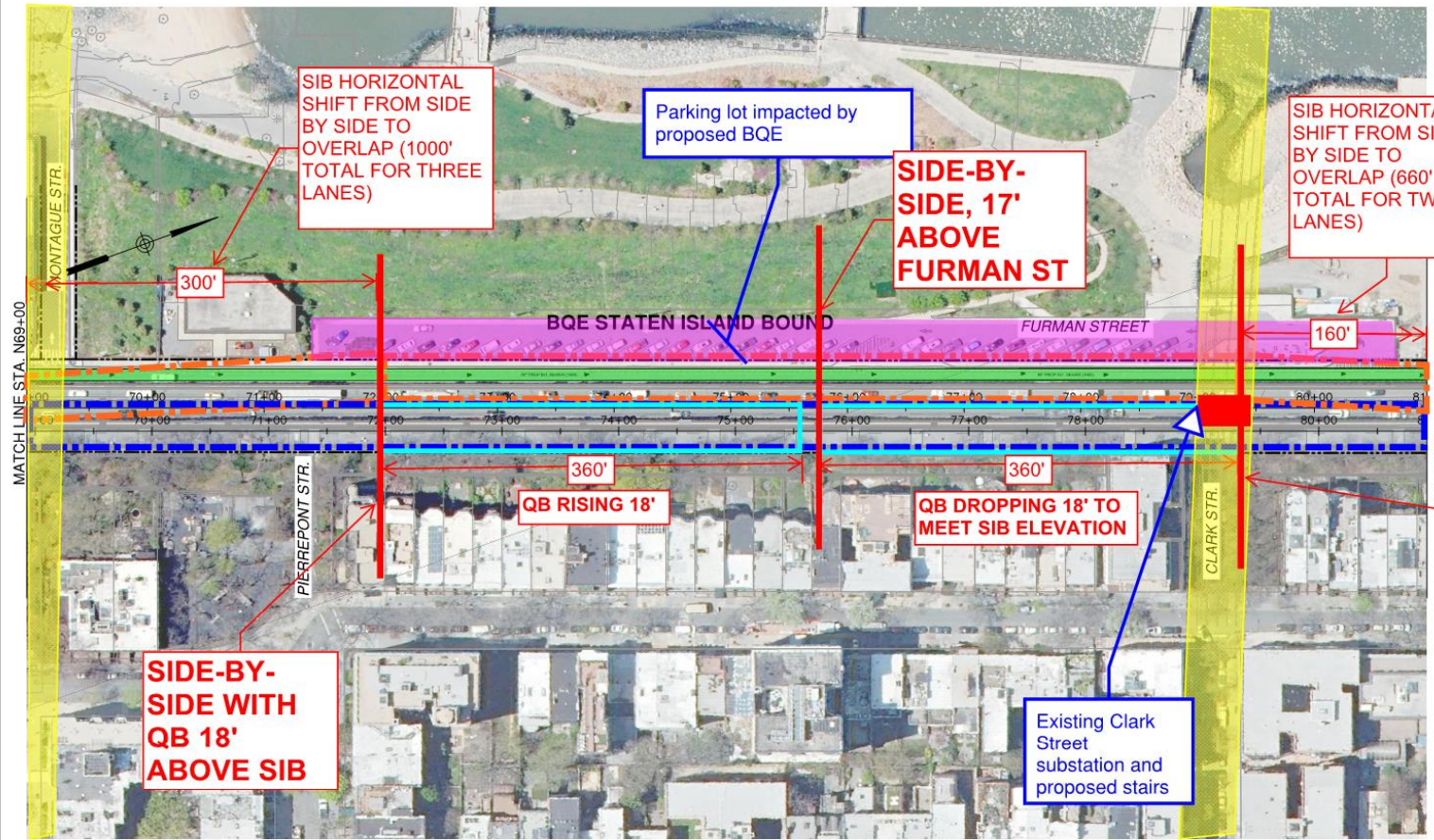
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NYC P.I.N. NO. 84116BKB981	
CONTRACT NO. HBKBOE	CD NO.
BQE WEIGHT-IN-MOTION AT SUMMIT STREET BOROUGH OF BROOKLYN B.I.N.	
AREA 2 FROM JORALEMON ST. TO PINEAPPLE ST. PROPOSED SIB PLANS	
DWG. NO. BQP-2	SCALE 1"=100'
DATE	SHEET NO. 2

Single Level Viaduct to Stacked

	SHEET NO.	TOTAL SHEETS



Note: Engineering studies were conducted to determine potential feasibility of a single-level above grade structure (The Stoop). These studies determined that a roughly 300' portion of single-level roadway would be entirely flat at the location of the BBP Parking Lot.

SIDE-BY-SIDE WITH QB 18' ABOVE SIB

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NEW YORK, N.Y.
10005

PREPARED BY
IN CHARGE M.S. DRAFTER Y.K.
DESIGNER L.S. CHECKER N.B.



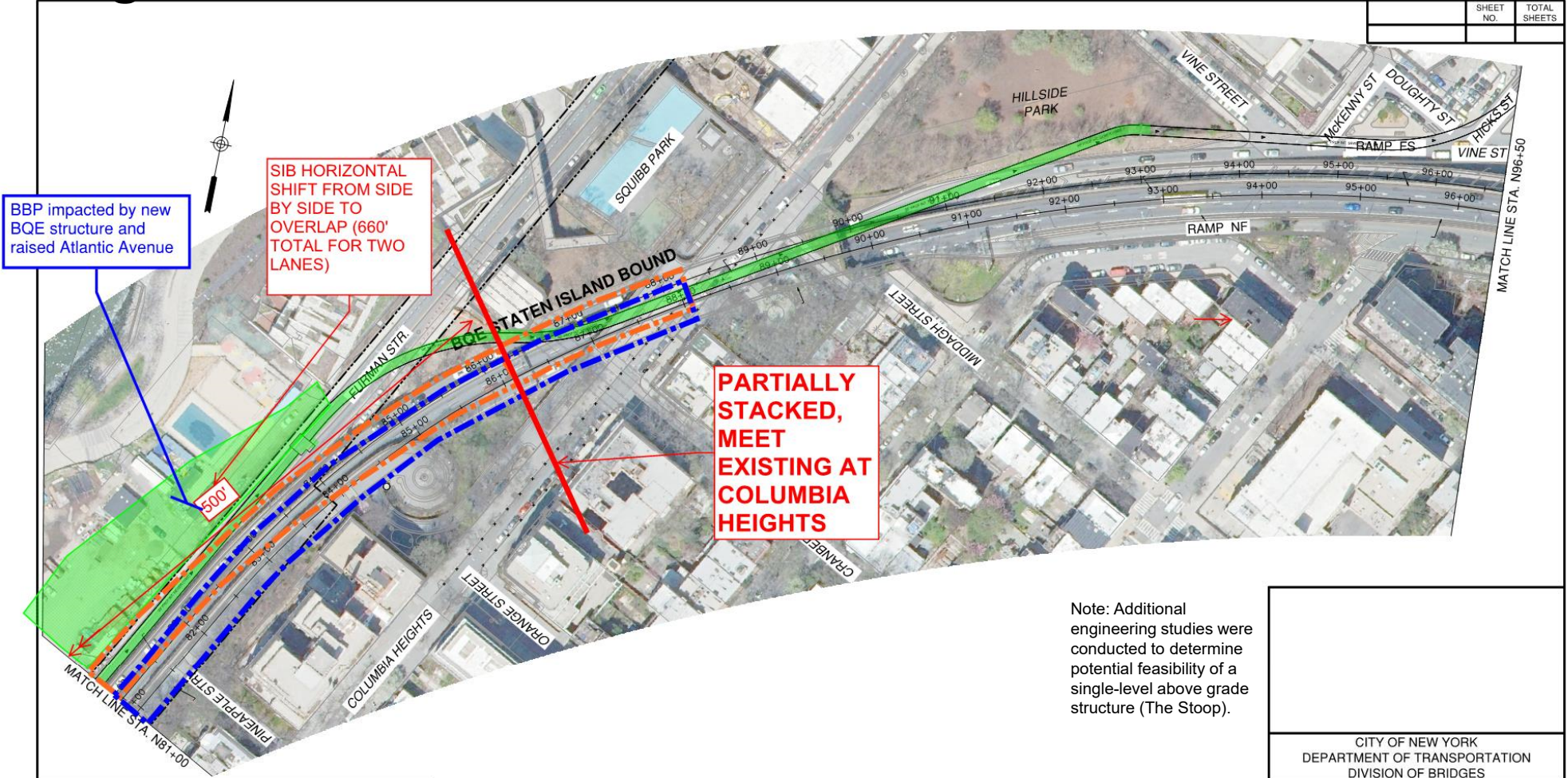
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LEGEND:
R.O.W.

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION DIVISION OF BRIDGES	
NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO. 84116BKB981	
CONTRACT NO. HBKBOE	CD NO.
BQE WEIGHT-IN-MOTION AT SUMMIT STREET BOROUGH OF BROOKLYN B.I.N.	
AREA 3 FROM JORALEMON ST. TO PINEAPPLE ST. PROPOSED SIB PLANS	
DWG. NO. BQP-3	SCALE 1"=100'
DATE	SHEET NO. 3

Single Level Viaduct to Stacked

SHEET NO.	TOTAL SHEETS



BBP impacted by new BQE structure and raised Atlantic Avenue

SIB HORIZONTAL SHIFT FROM SIDE BY SIDE TO OVERLAP (660' TOTAL FOR TWO LANES)

PARTIALLY STACKED, MEET EXISTING AT COLUMBIA HEIGHTS

Note: Additional engineering studies were conducted to determine potential feasibility of a single-level above grade structure (The Stoop).

PREPARED BY	ALTERED BY

TRIPLE CANTILEVER
DESIGN JV
100 BROADWAY
NEW YORK, N.Y.
10005

PREPARED BY
IN CHARGE M.S. DRAFTER Y.K.
DESIGNER L.S. CHECKER N.B.

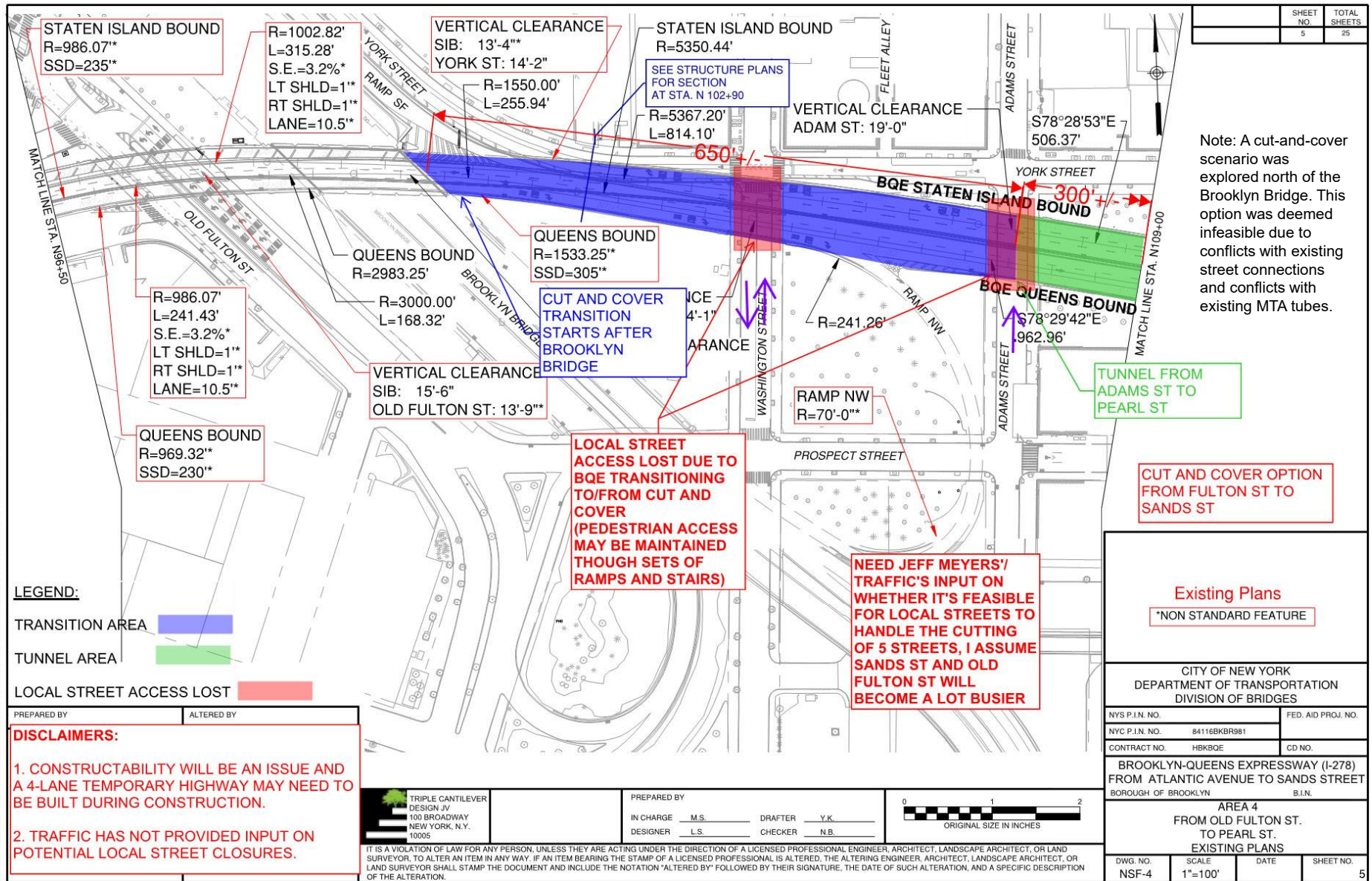


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NYC P.I.N. NO. 84116BKBR981	
CONTRACT NO. HKBQE	CD NO.
BQE WEIGHT-IN-MOTION AT SUMMIT STREET	
BOROUGH OF BROOKLYN	B.I.N.
AREA 4 FROM PINEAPPLE ST. TO OLD FULTON ST. PROPOSED SIB PLANS	
DWG. NO. BQP-4	SCALE 1"=100'
DATE	SHEET NO. 4

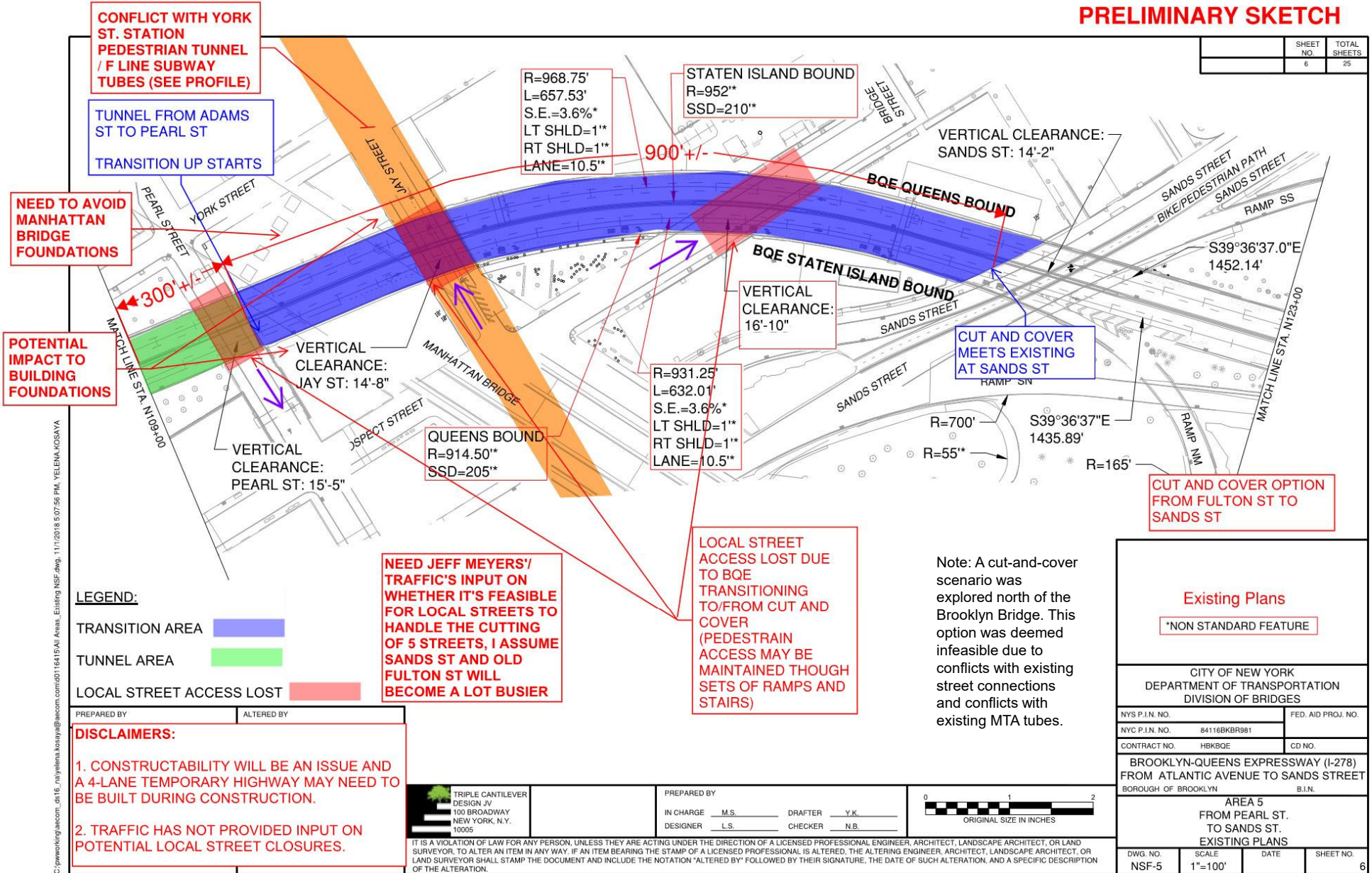
Dumbo Cut and Cover From Fulton to Sand St

PRELIMINARY SKETCH



Dumbo Cut and Cover From Fulton to Sand St

PRELIMINARY SKETCH



SHEET NO.	TOTAL SHEETS
6	25

LEGEND:

- TRANSITION AREA
- TUNNEL AREA
- LOCAL STREET ACCESS LOST

DISCLAIMERS:

1. CONSTRUCTABILITY WILL BE AN ISSUE AND A 4-LANE TEMPORARY HIGHWAY MAY NEED TO BE BUILT DURING CONSTRUCTION.
2. TRAFFIC HAS NOT PROVIDED INPUT ON POTENTIAL LOCAL STREET CLOSURES.

NEED JEFF MEYERS'/ TRAFFIC'S INPUT ON WHETHER IT'S FEASIBLE FOR LOCAL STREETS TO HANDLE THE CUTTING OF 5 STREETS, I ASSUME SANDS ST AND OLD FULTON ST WILL BECOME A LOT BUSIER

LOCAL STREET ACCESS LOST DUE TO BQE TRANSITIONING TO/FROM CUT AND COVER (PEDESTRAIN ACCESS MAY BE MAINTAINED THROUGH SETS OF RAMPS AND STAIRS)

Note: A cut-and-cover scenario was explored north of the Brooklyn Bridge. This option was deemed infeasible due to conflicts with existing street connections and conflicts with existing MTA tubes.

CUT AND COVER OPTION FROM FULTON ST TO SANDS ST

Existing Plans
*NON STANDARD FEATURE

CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION DIVISION OF BRIDGES	
NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO. 84116BKBR981	
CONTRACT NO. HKBQEE	CD NO.
BROOKLYN-QUEENS EXPRESSWAY (I-278) FROM ATLANTIC AVENUE TO SANDS STREET BOROUGH OF BROOKLYN B.I.N.	
AREA 5 FROM PEARL ST. TO SANDS ST. EXISTING PLANS	
DWG. NO. NSF-5	SHEET NO. 6
SCALE 1"=100'	DATE



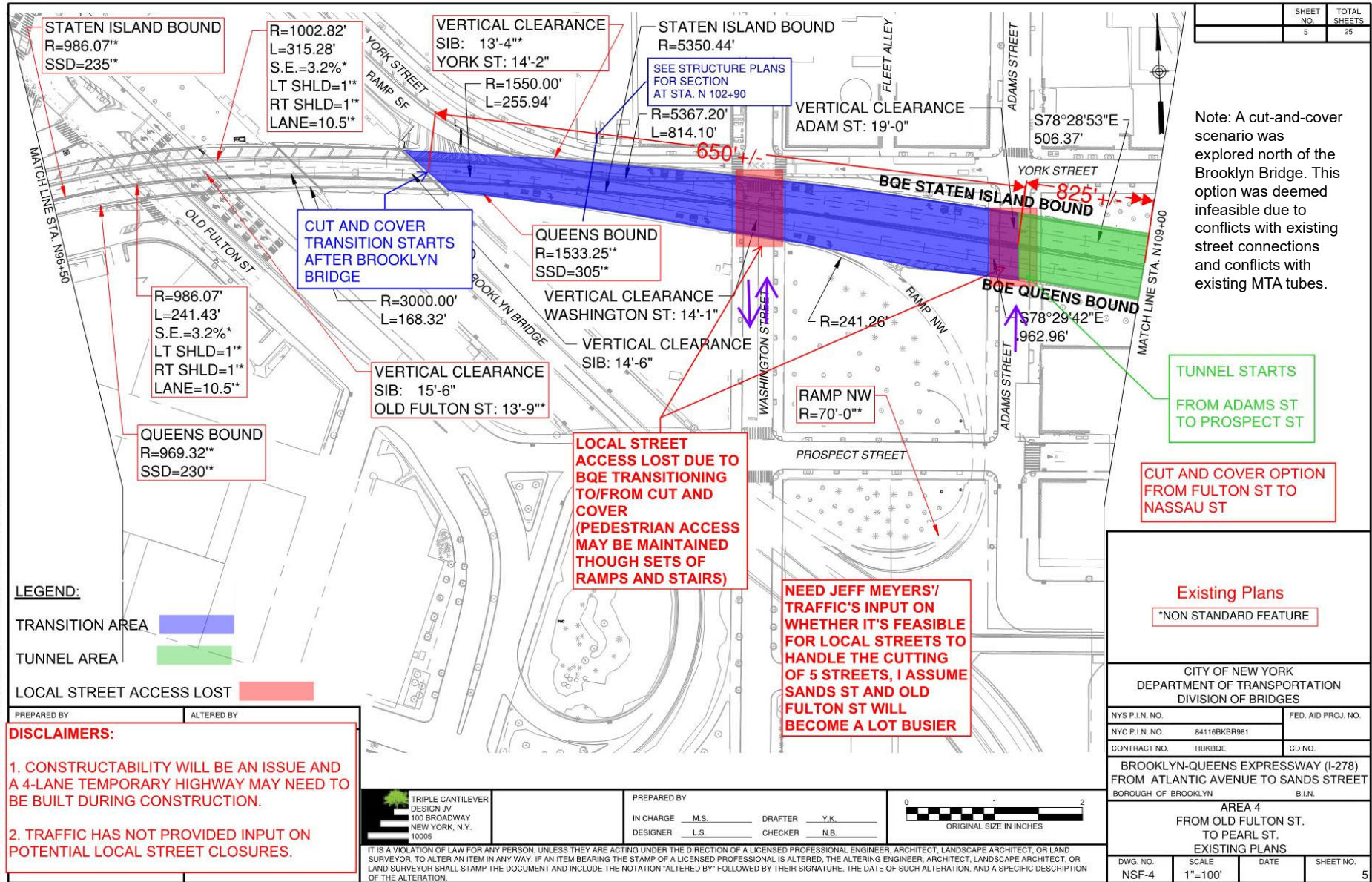
PREPARED BY	IN CHARGE	DESIGNER	DRAFTER	CHECKER
	M.S.	L.S.	Y.K.	N.B.



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Dumbo Cut and Cover From Fulton to Nassau St

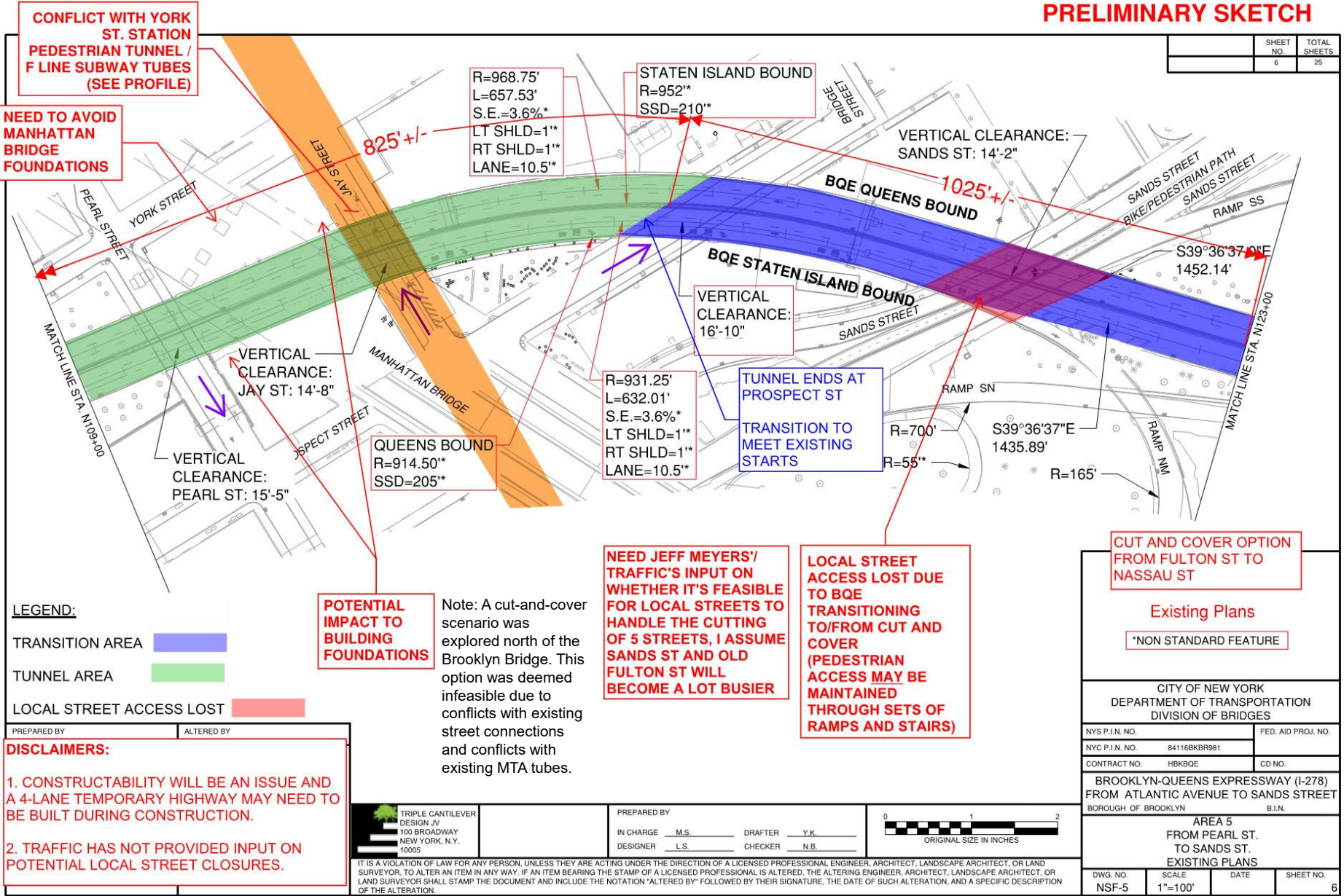
PRELIMINARY SKETCH



For Discussion Purposes Only – Subject to Change and Refinement

Dumbo Cut and Cover From Fulton to Nassau St

PRELIMINARY SKETCH



CONFLICT WITH YORK ST. STATION PEDESTRIAN TUNNEL / F LINE SUBWAY TUBES (SEE PROFILE)

NEED TO AVOID MANHATTAN BRIDGE FOUNDATIONS

R=968.75'
L=657.53'
S.E.=3.6%*
LT SHLD=1''*
RT SHLD=1''*
LANE=10.5''*

STATEN ISLAND BOUND
R=952''*
SSD=210''*

VERTICAL CLEARANCE:
SANDS ST: 14'-2''

VERTICAL CLEARANCE:
JAY ST: 14'-8''

VERTICAL CLEARANCE:
PEARL ST: 15'-5''

QUEENS BOUND
R=914.50''*
SSD=205''*

R=931.25'
L=632.01'
S.E.=3.6%*
LT SHLD=1''*
RT SHLD=1''*
LANE=10.5''*

TUNNEL ENDS AT PROSPECT ST
TRANSITION TO MEET EXISTING STARTS

LEGEND:

- TRANSITION AREA
- TUNNEL AREA
- LOCAL STREET ACCESS LOST

POTENTIAL IMPACT TO BUILDING FOUNDATIONS

Note: A cut-and-cover scenario was explored north of the Brooklyn Bridge. This option was deemed infeasible due to conflicts with existing street connections and conflicts with existing MTA tubes.

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LOCAL STREET ACCESS LOST DUE TO BQE TRANSITIONING TO/FROM CUT AND COVER (PEDESTRIAN ACCESS MAY BE MAINTAINED THROUGH SETS OF RAMPS AND STAIRS)

CUT AND COVER OPTION FROM FULTON ST TO NASSAU ST

Existing Plans

*NON STANDARD FEATURE

DISCLAIMERS:

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TRIPLE CANTILEVER DESIGN JV
100 BROADWAY
NEW YORK, N.Y.
10005

PREPARED BY:
IN CHARGE M.S. DRAFTER Y.K.
DESIGNER L.S. CHECKER N.B.



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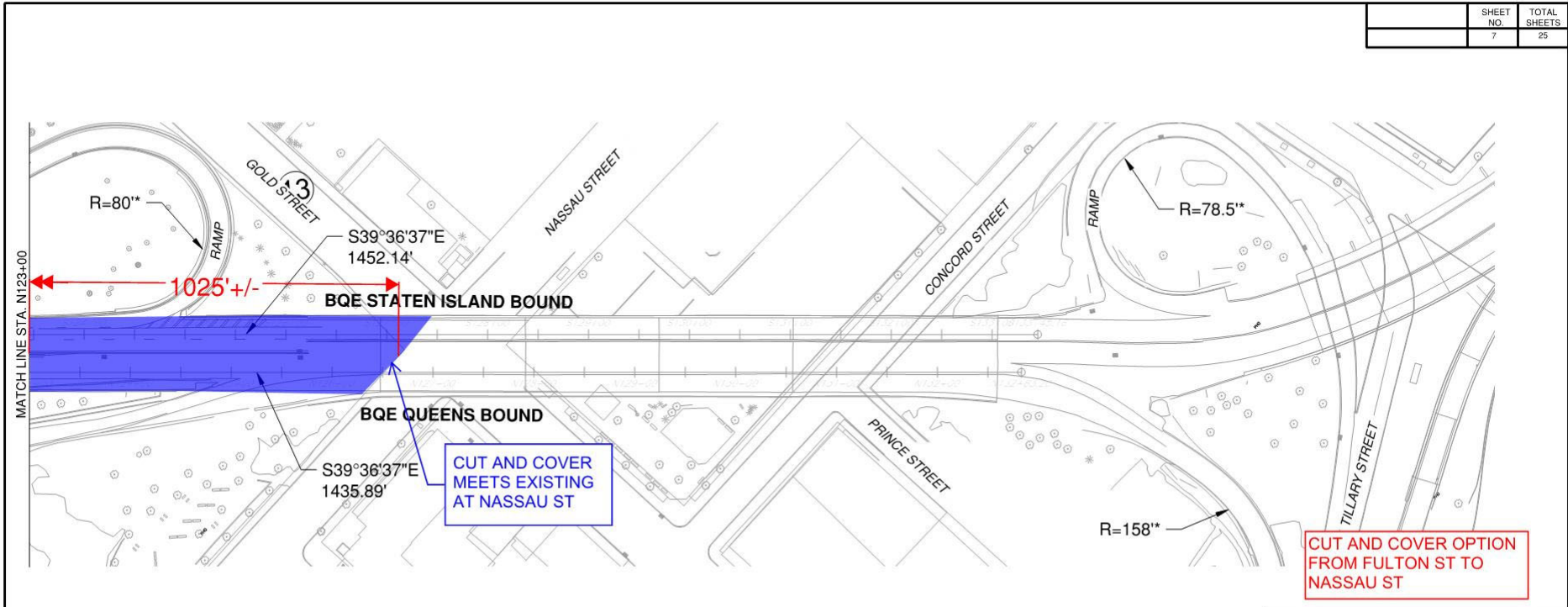
CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION DIVISION OF BRIDGES	
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CONTRACT NO. HKBQEE	CD NO.
BROOKLYN-QUEENS EXPRESSWAY (I-278) FROM ATLANTIC AVENUE TO SANDS STREET BOROUGH OF BROOKLYN B.I.N.	
AREA 5 FROM PEARL ST. TO SANDS ST. EXISTING PLANS	
DWG. NO. NSF-5	SHEET NO. 6
SCALE 1"=100'	DATE

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Dumbo Cut and Cover From Fulton to Nassau St

PRELIMINARY SKETCH

SHEET NO.	TOTAL SHEETS
7	25



LEGEND:

- TRANSITION AREA
- TUNNEL AREA
- LOCAL STREET ACCESS LOST

PREPARED BY	ALTERED BY
<p>DISCLAIMERS:</p> <p>1. CONSTRUCTABILITY WILL BE AN ISSUE AND A 4-LANE TEMPORARY HIGHWAY MAY NEED TO BE BUILT DURING CONSTRUCTION.</p> <p>2. TRAFFIC HAS NOT PROVIDED INPUT ON POTENTIAL LOCAL STREET CLOSURES.</p>	

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Existing Plans

*NON STANDARD FEATURE

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
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CONTRACT NO. HBKBOE	CD NO.

BROOKLYN-QUEENS EXPRESSWAY (I-278)
FROM ATLANTIC AVENUE TO SANDS STREET
BOROUGH OF BROOKLYN B.I.N.

AREA 6
FROM SANDS ST.
TO TILLARY ST.

DWG. NO. NSF-6	SCALE 1"=100'	DATE	SHEET NO. 7
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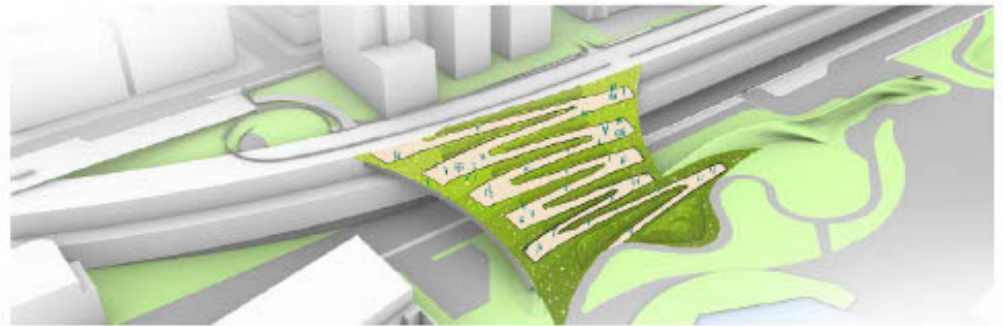
TRIPLE CANTILEVER DESIGN JV 100 BROADWAY NEW YORK, N.Y. 10005	PREPARED BY		ORIGINAL SIZE IN INCHES	
	IN CHARGE <u>N.B.</u>	DRAFTER <u>Y.K.</u>	DESIGNER <u>L.S.</u>	CHECKER <u>N.B.</u>
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Landscape Bridge Studies

Land Bridge Options

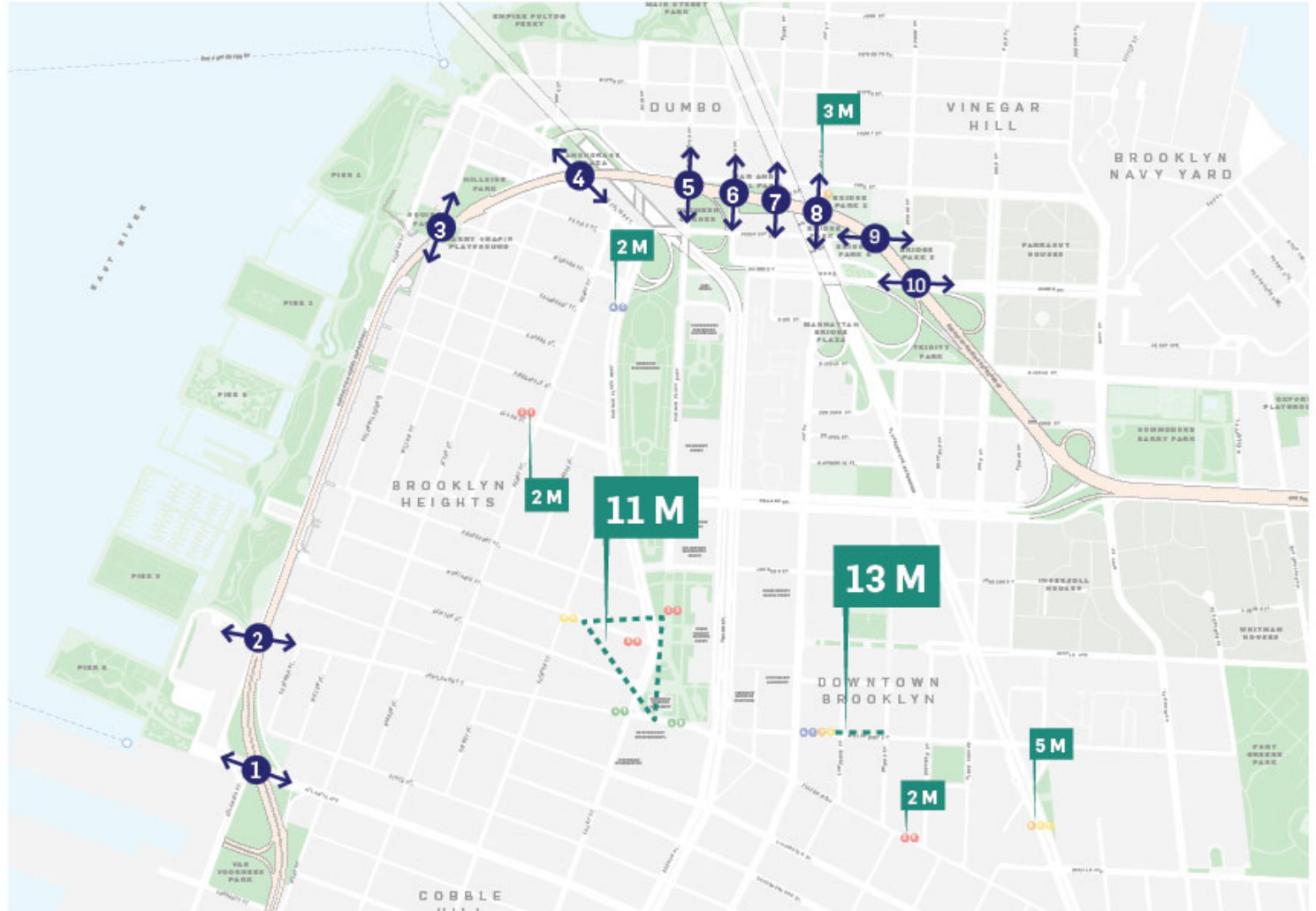
Note: Additional "Landscape Bridge" concept studies explored opportunities for more vertical open space transition directly from the Promenade to the berms in Brooklyn Bridge Park. Further studies of these options are being explored.



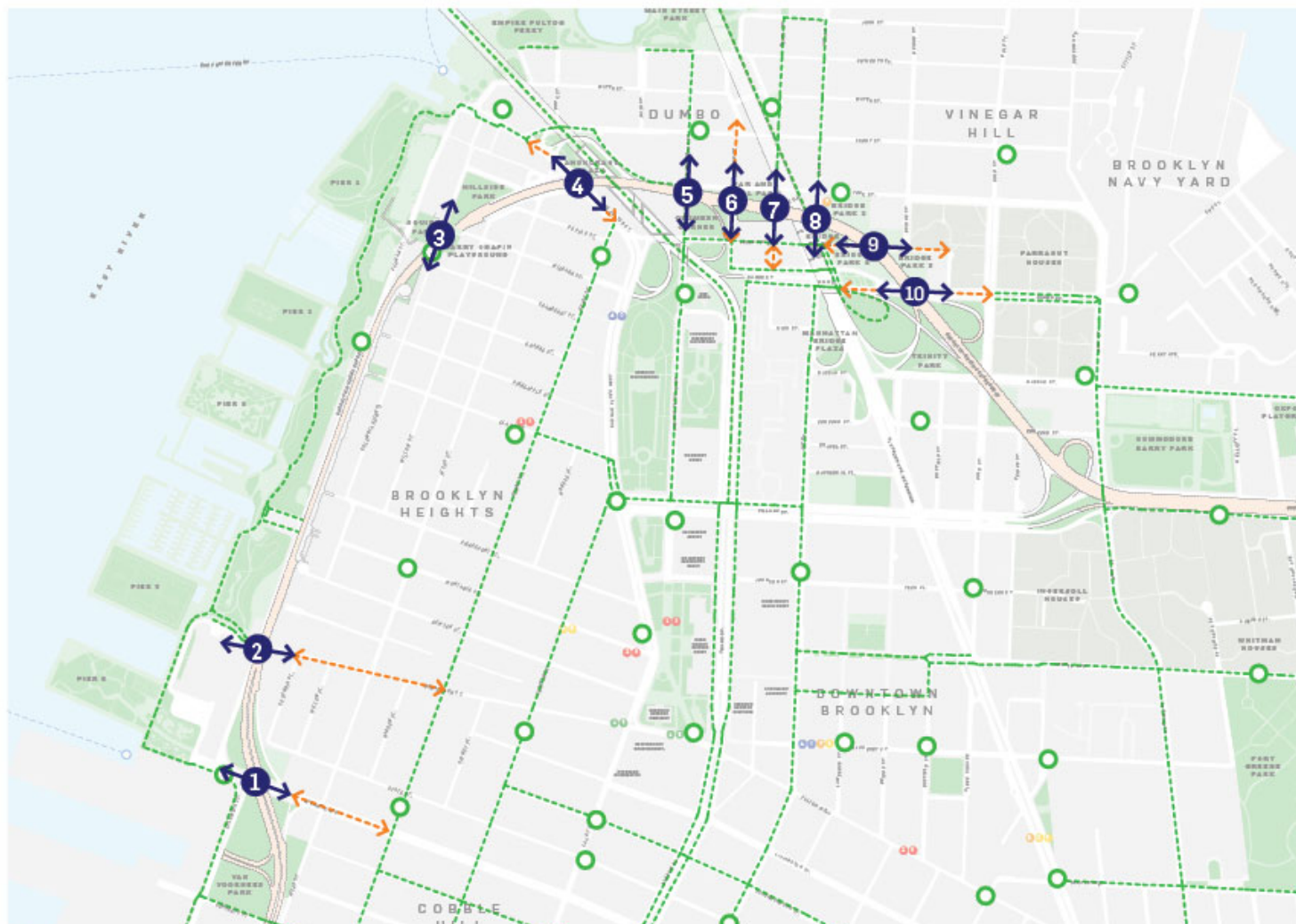
Transportation Network

Transit Ridership Per Station

Unverified data, to be discussed in the future



Bicycle Connections



Legend

- Existing BQE
- Existing Bike Lane
- Missed Bike Connections
- Citibike Station
- Existing Pedestrian Connections



Bus Routes



Transportation Network

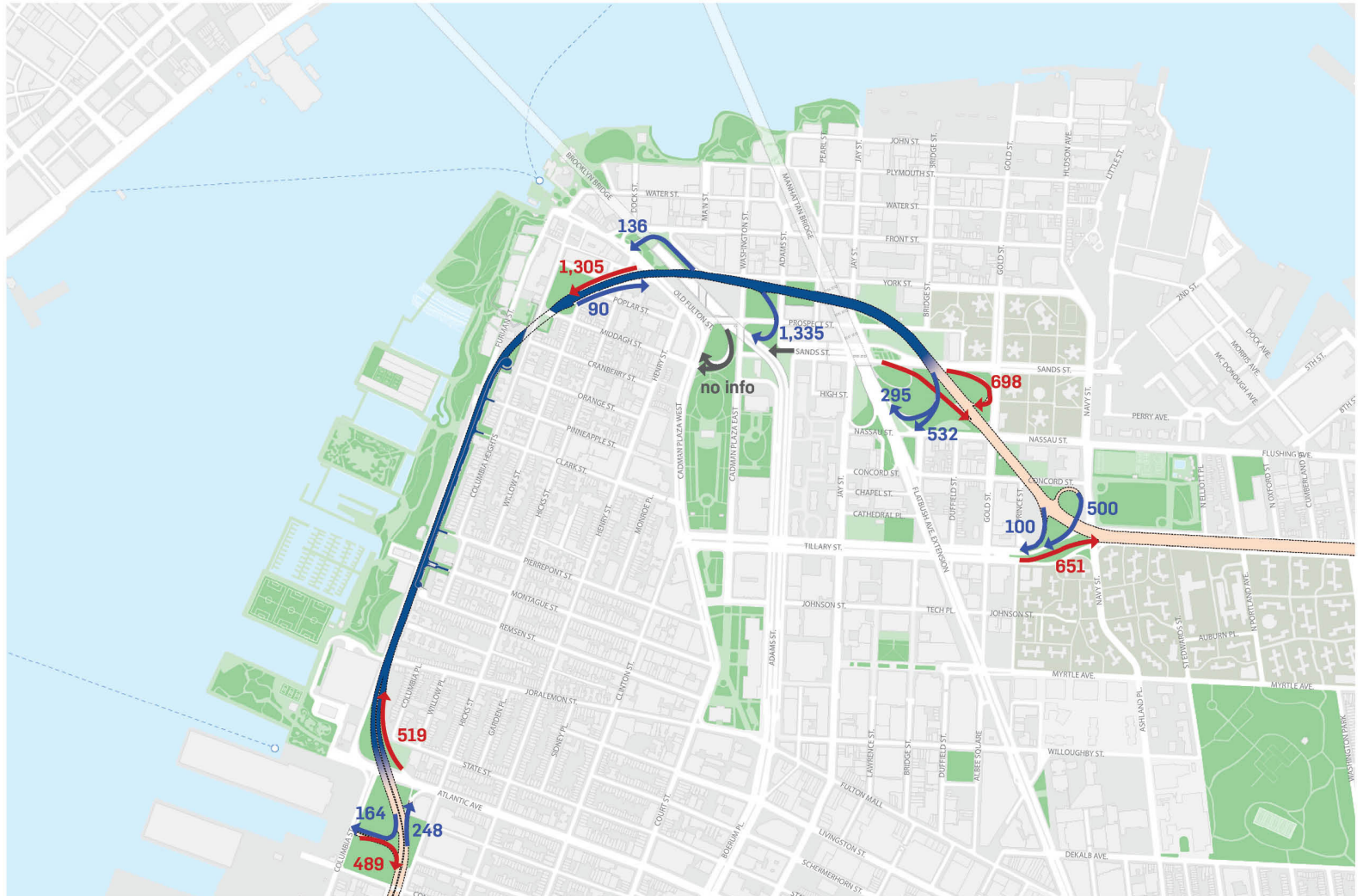
BQE Network Level Traffic Volumes

Note: Traffic volumes reflect per hour vehicles for select on and off ramps from the BQE.

The Brooklyn Bridge off ramp at Cadman Plaza has approximately **[DOT TO PROVIDE]** vehicles exiting onto Cadman Plaza per hour.

DOT TO CONFIRM

Stale data to be discussed in the future with updated information





Mayor Eric Adams
Deputy Mayor Meera Joshi
Commissioner Ydanis Rodriguez

For Discussion Purposes Only – Subject to Change and Refinement

WXY | SCAPE | BIG | TRIPLE CANTILEVER DESIGN JV