BROOKLYN BRIDGE PROMENADE

New York City Department of Transportation

August 2016

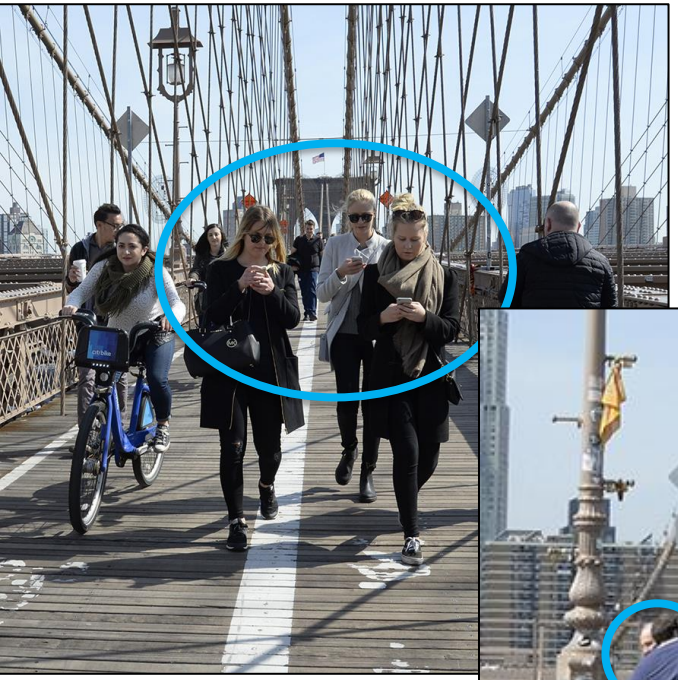
OUTLINE

I. Brooklyn Bridge – Times Square in the Sky
II. Lives of the Brooklyn Bridge
III. Project Overview
IV. Promenade Typologies & Issues
V. Deck to Girder Relationship
VI. Initial Improvement Concepts
VII. Process/Next Steps

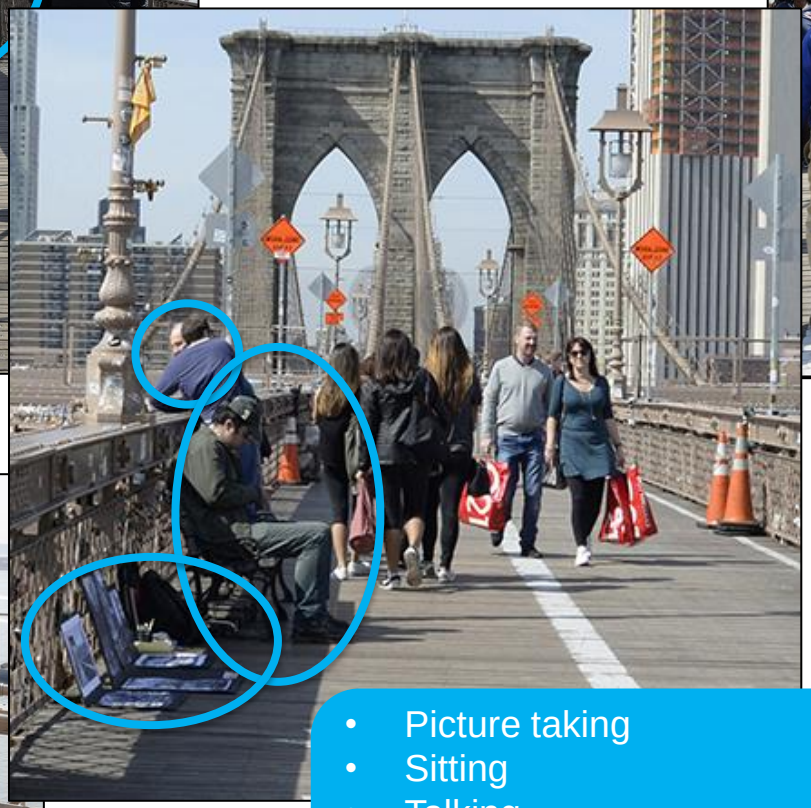
BROOKLYN BRIDGE

Times Square in the Sky

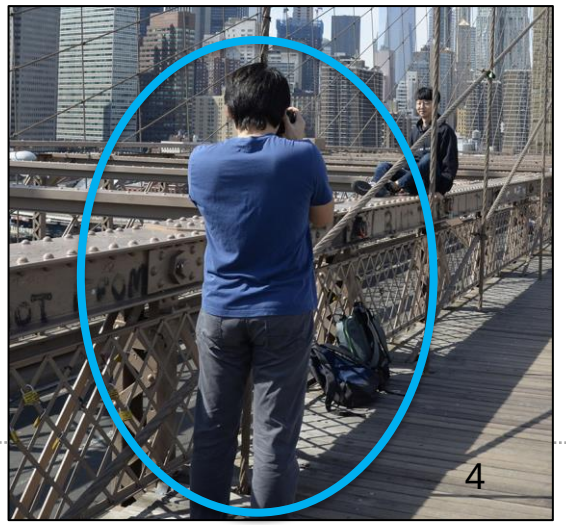
I. BROOKLYN BRIDGE – TIMES SQUARE IN THE SKY



The Brooklyn Bridge is more than a way to get from point A to B. It is a destination.



- Picture taking
- Sitting
- Talking
- Communicating
- Performing
- Selling/Buying



I. BROOKLYN BRIDGE – TIMES SQUARE IN THE SKY

No formal system for providing services to Bridge visitors

TIMES SQUARE IN THE SKY

Average Peak Hour Volumes

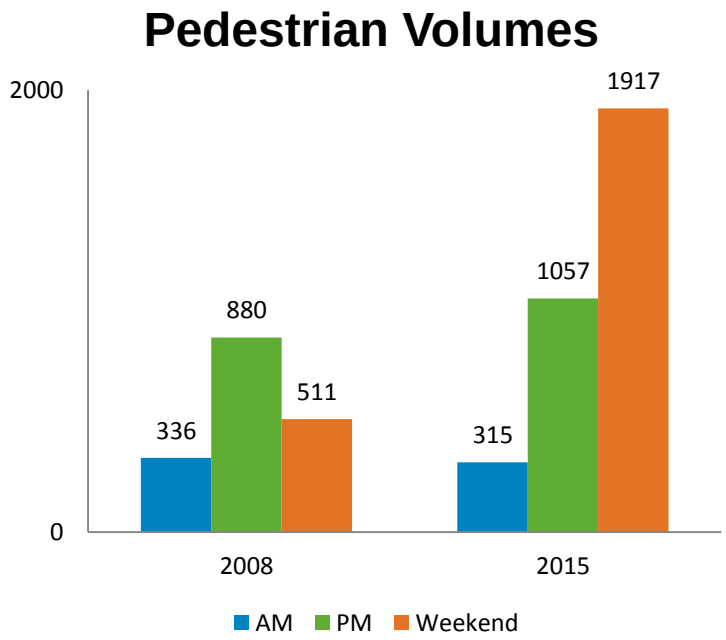
Spring 2008 vs. Spring 2015

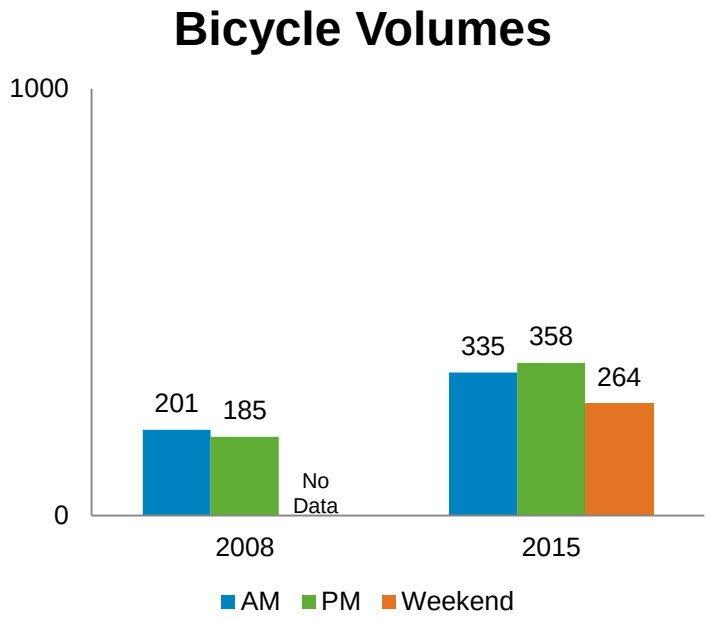
- Pedestrian volumes have increased 20% in the PM and 275% on the weekend from May 2008 to May 2015

- Bicycle volumes have increased 66% in the AM and 93% in the PM from May 2008 to May 2015

Typical Weekday Volumes

- 100,000 Motor vehicles
- 10,000 Pedestrians
- 3,500 Cyclists



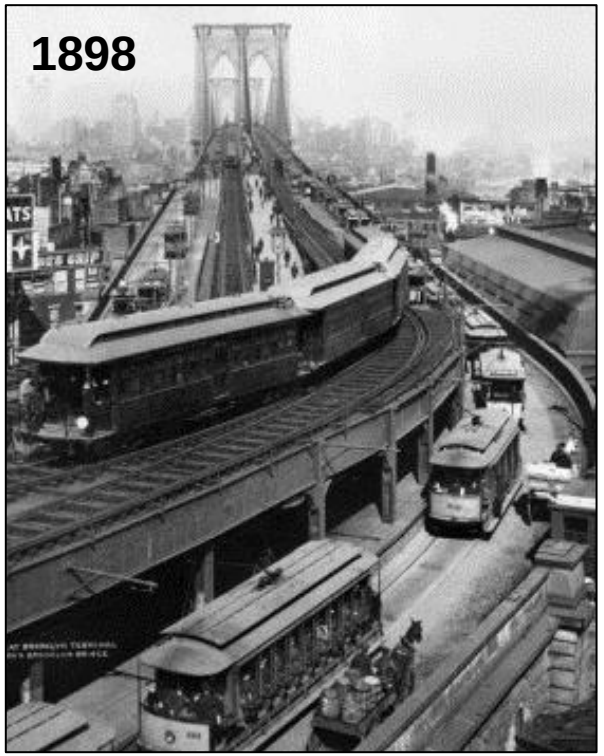


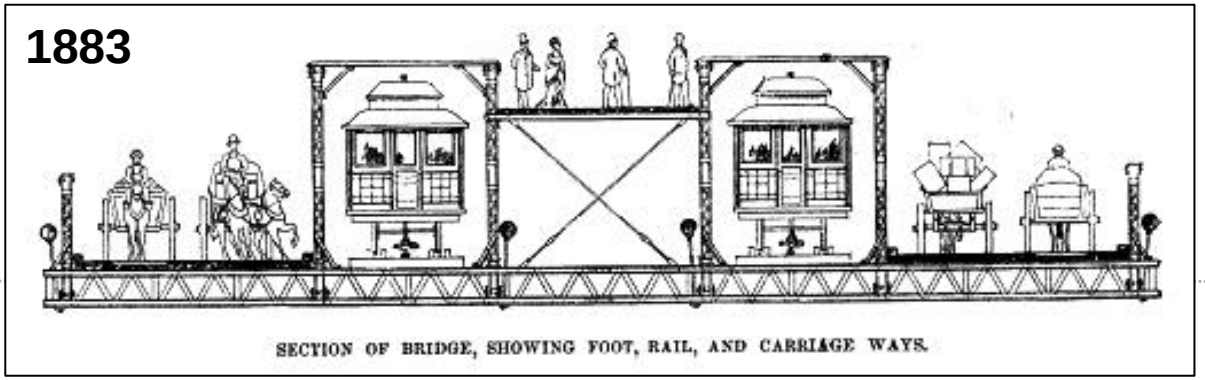
DOT Bi-Annual Pedestrian Counts (Spring)
AM counts averaged: 7-9AM, PM counts averaged: 4-7PM, Weekend counts averaged: 12-2PM

LIVES OF THE BROOKLYN BRIDGE

II

- **May 24th, 1883** - Opened for horse-drawn and rail traffic with elevated promenade for pedestrians and cyclists
- **1898** - Roadway configured to allow trolley and carriages
- **1944** - Manhattan and Brooklyn terminals torn down, elevated trains removed
- **1950** - Bridge closed for construction - Trolley tracks removed and traffic restricted to passenger cars. There are currently six lanes of vehicular traffic
- **1980s –** Ramp to Adams/Tillary St added; Stairs to Towers Removed



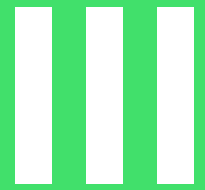


1982 STAIRS TO TOWERS REMOVED
1983 RAMP/CATTLE CHUTE TO TILLARY STREET CONSTRUCTED

Brooklyn Bridge: Reconstruction of the promenade began in 1982. Controversy over design resulted from conflicting user demands. Handicapped and bicycle groups were in favor of replacing all four stairways with ramps. Preservationists contended that the existing steps were an integral part of the promenade and must remain. After a public hearing in May, 1982, the Landmarks Preservation Commission approved the removal of the stairs and construction of a fully ramped promenade. Reconstruction of the promenade between the two towers took place between August and December, 1982. A temporary walkway was installed eight feet above the existing promenade to allow pedestrians and bicycles to cross the Bridge during reconstruction. After the Brooklyn Bridge centennial celebration in May, 1983, a new 10′ to 12′ wide bikepath will be constructed at the Brooklyn approach in conjunction with promenade reconstruction between the towers and land (See Photo 12). This will eliminate the need to carry bicycles up or down a 3-level staircase of over 30 steps.

Photo 12. Brooklyn Bridge: projected Bike Path leading to Tillary Street

PROJECT OVERVIEW



BROOKLYN BRIDGE PROMENADE

Goals

- Relieve overcrowding of existing promenade
- Enhance the visitor experience of the iconic and historic Brooklyn Bridge promenade
- Greatly reduce conflicts between and improve safety of cyclists, pedestrians, and visitors on the promenade

PROCESS

1. **Initial Assessment**
   DOT has performed an initial assessment of the Brooklyn Bridge existing conditions, issues, and opportunities

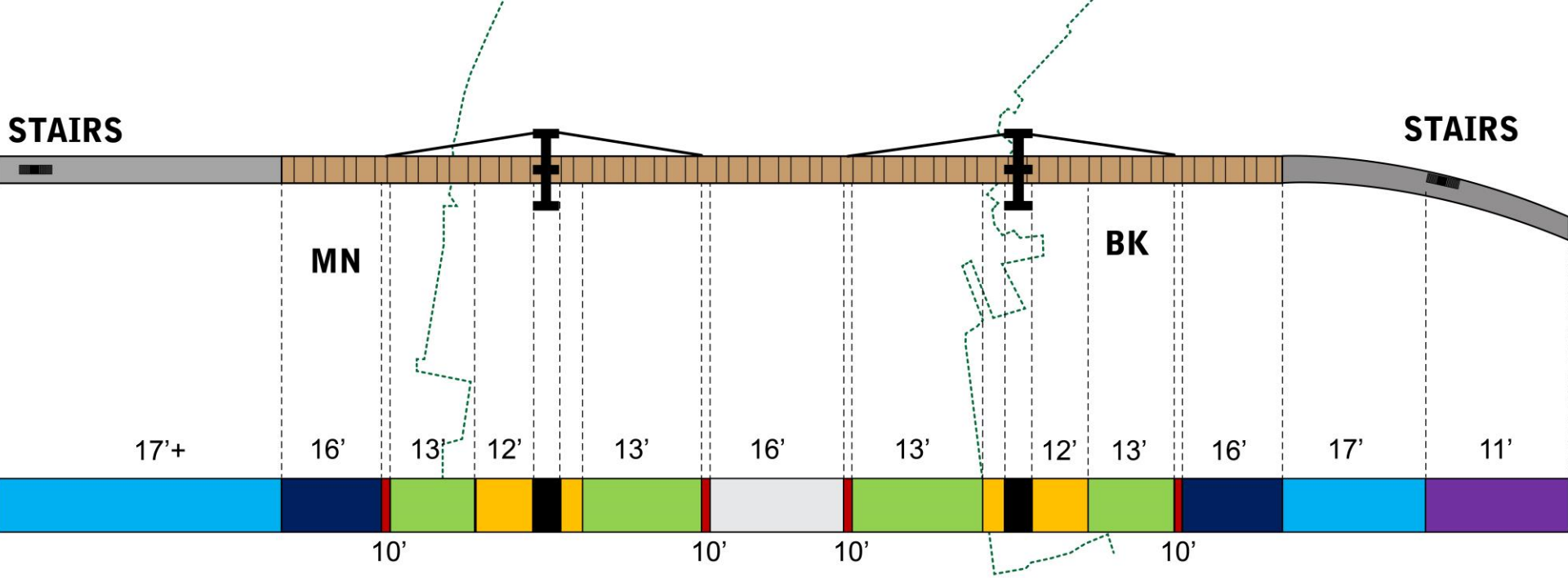
2. **Consultant Study Tasks**
   Aug ‘16 -- Feb ’17, $370k
   a) Structural Analysis
   b) Conceptual Design Development
   c) Historical Preservation Implication Study
   d) Conceptual Cost Estimate

If feasible

3. **Design & Construction**
   a) Potentially via upcoming/planned bridge capital contract

PROMENADE TYPOLOGIES & ISSUES

IV

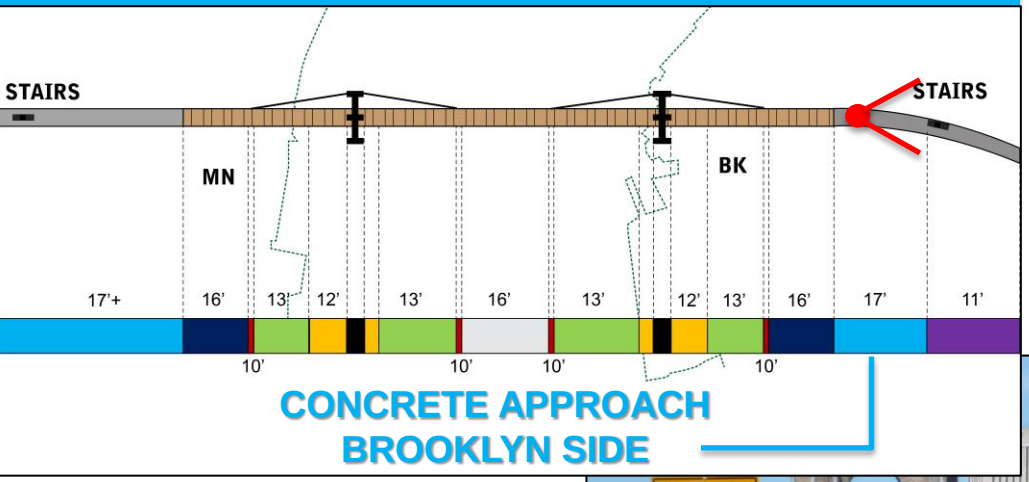


1. Concrete Approaches - *2365 feet: 35%*
2. Wood Deck Approaches - *750 feet: 11%*
3. Wood Deck with Cables – *1,510 feet: 23%*
4. Tower Ramps - *540 feet: 8%*
5. Towers - *109 feet: 2%*
6. Crown – *355 feet: 5%*
7. Trunk Cable Bases - *114 feet, 2%*
8. Brooklyn Curve - *910 feet: 14%*

Extents of Girders

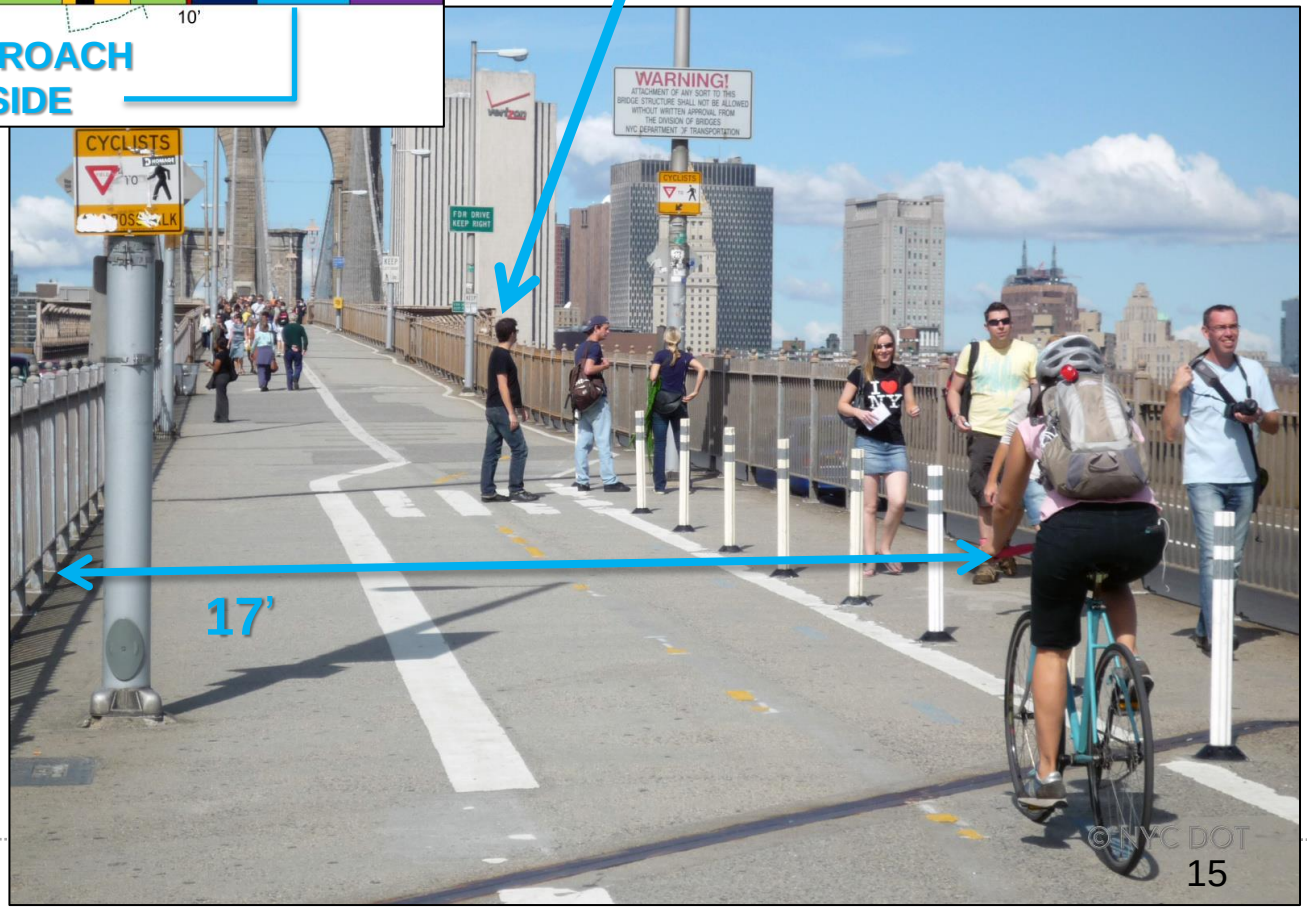
The width of the bike/pedestrian promenade changes frequently. The majority of the pathway varies from 10' to 17'

1. CONCRETE APPROACHES



CONCRETE APPROACH
BROOKLYN SIDE

Widest area, but pedestrians coming up from stairs must cross over bike lane to enter promenade



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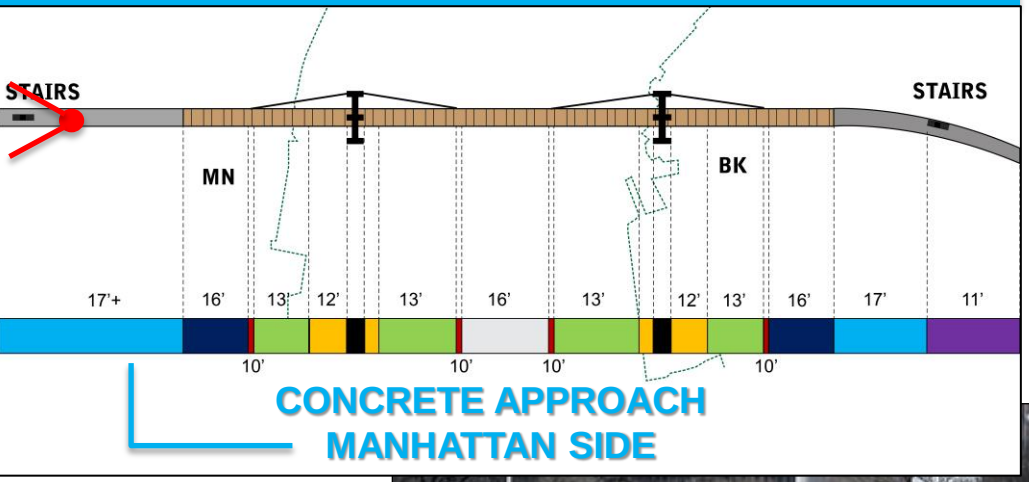
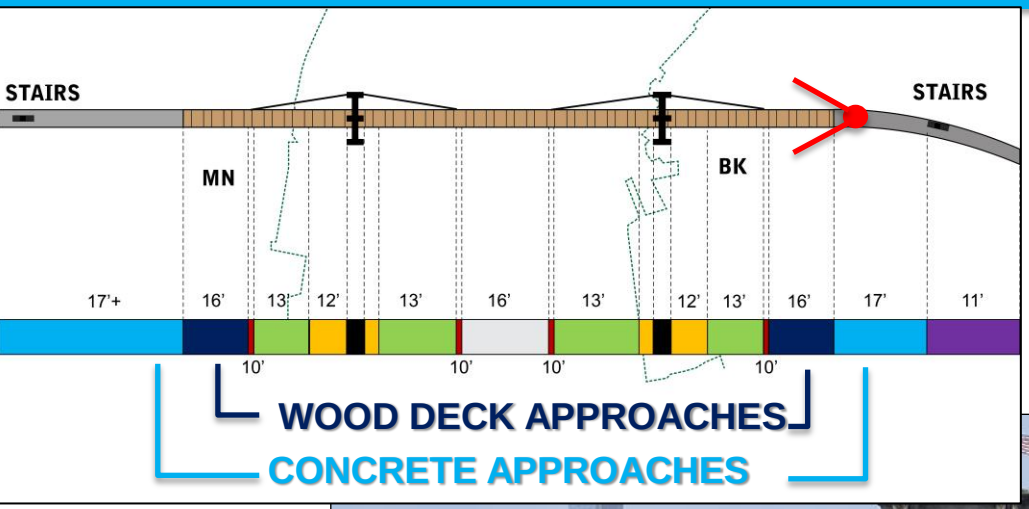


CONCRETE APPROACH
MANHATTAN SIDE

Staircase creates pinch point. Bikes traveling at high downhill speed do not have space to pass bikes entering the bridge

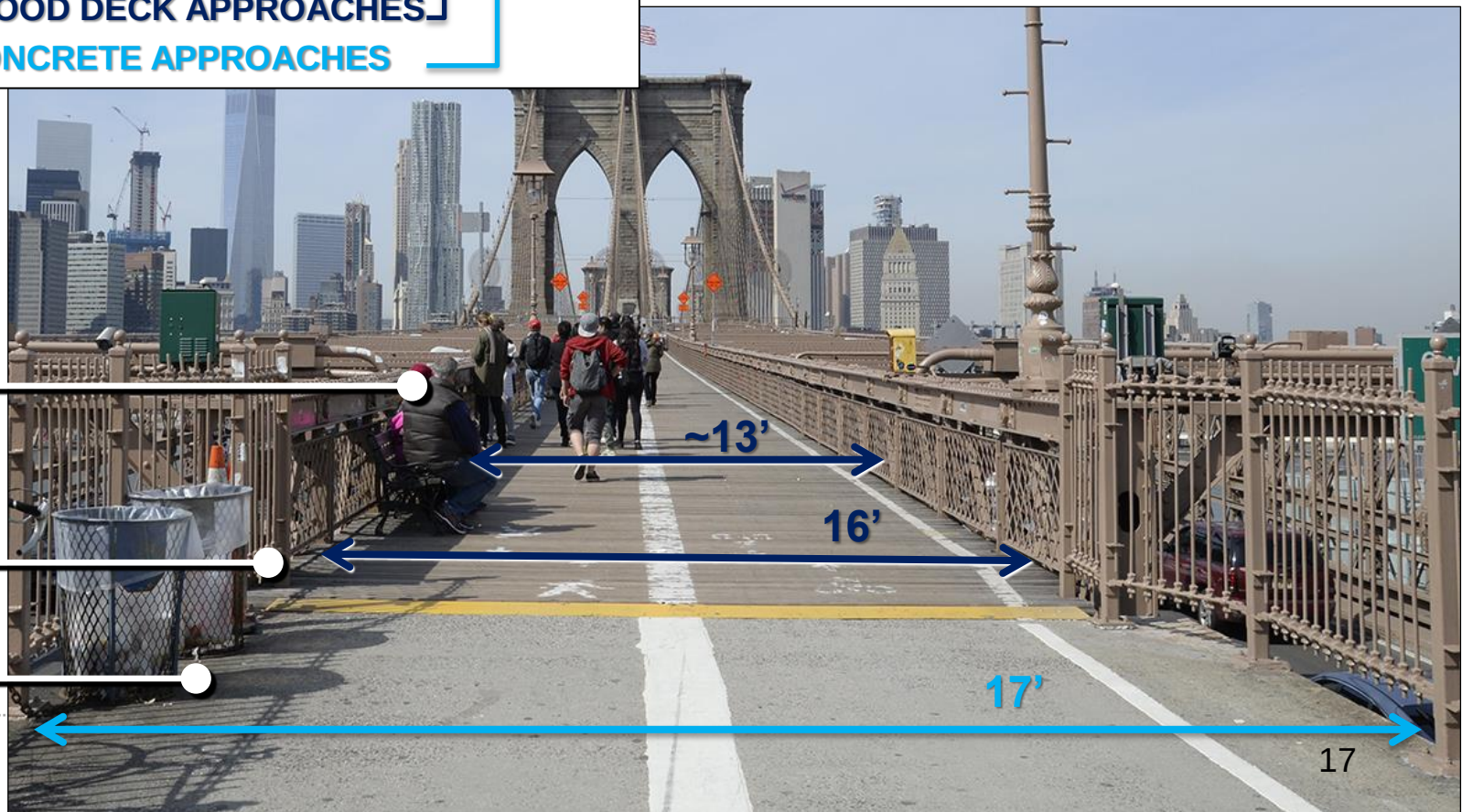
CONCRETE/ WOOD DECK TRANSITION



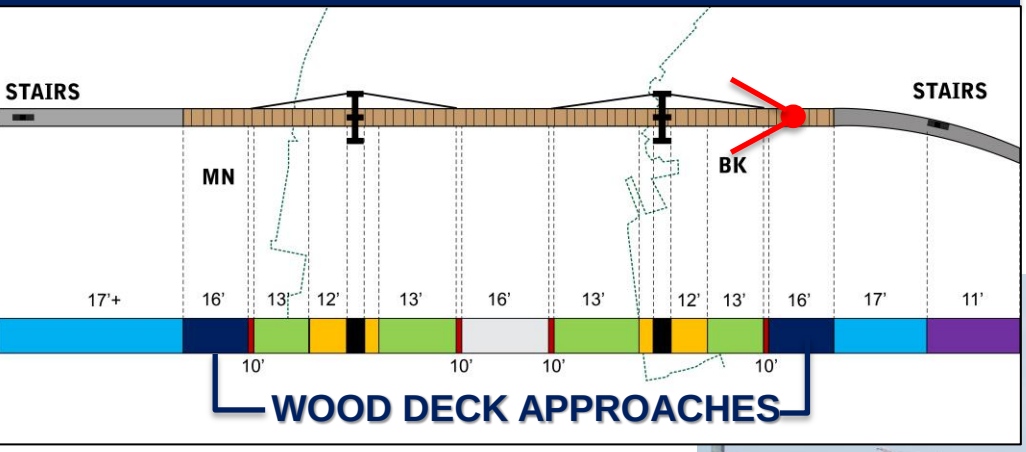
Benches narrow pedestrian space

Wooden promenade with adjacent girders

Concrete pathway



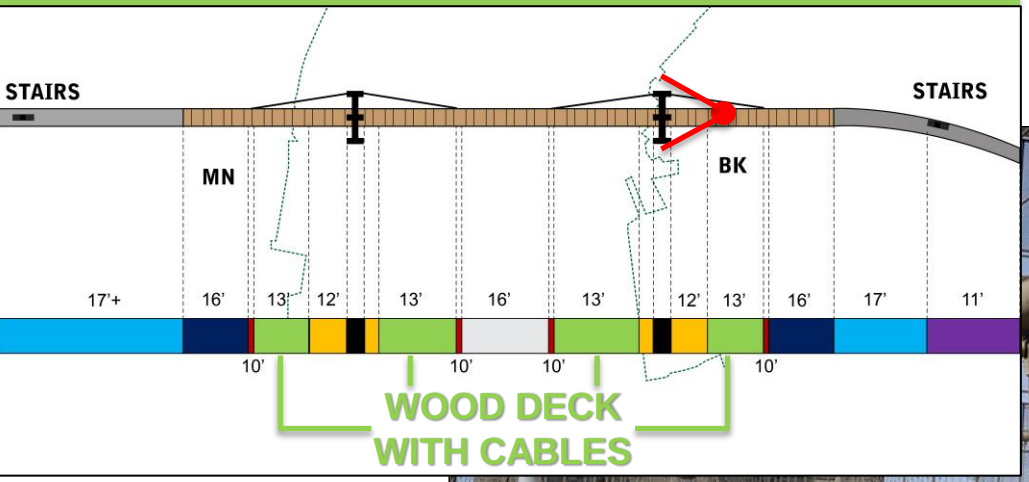
2. WOOD DECK APPROACHES



Width of 16' is generally acceptable for a shared use path.

Stopping for picture taking creates pinch points and conflicts with walking and cycling

3. WOOD DECK WITH CABLES

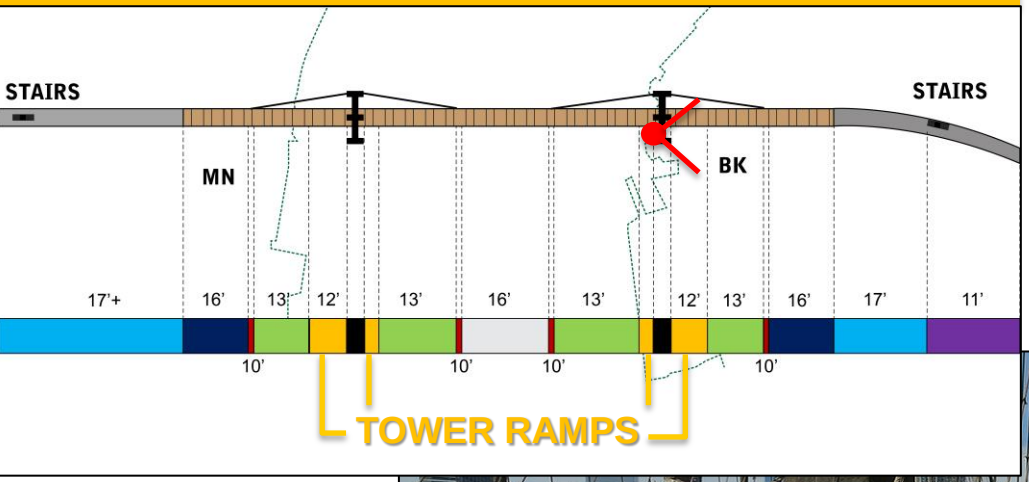


Cyclists shy a foot away from cables, further reducing effective width

Cable supports connect inside of fence narrowing effective width of pathway

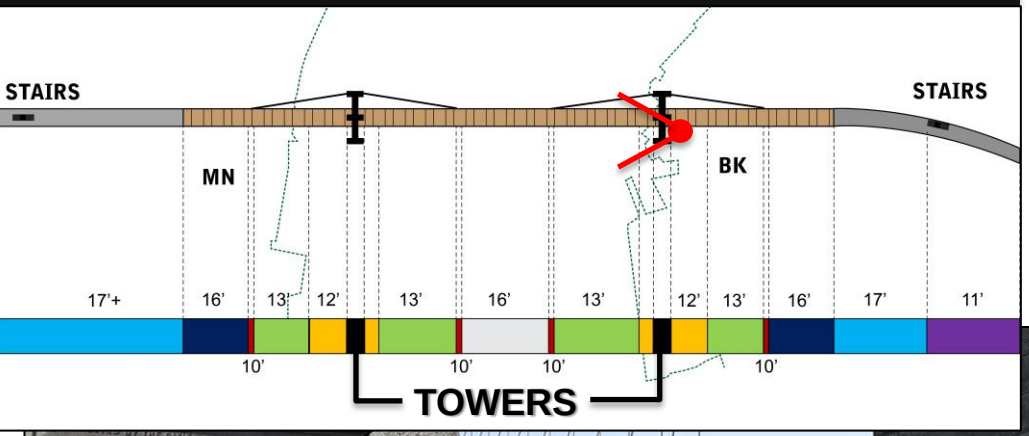
13'

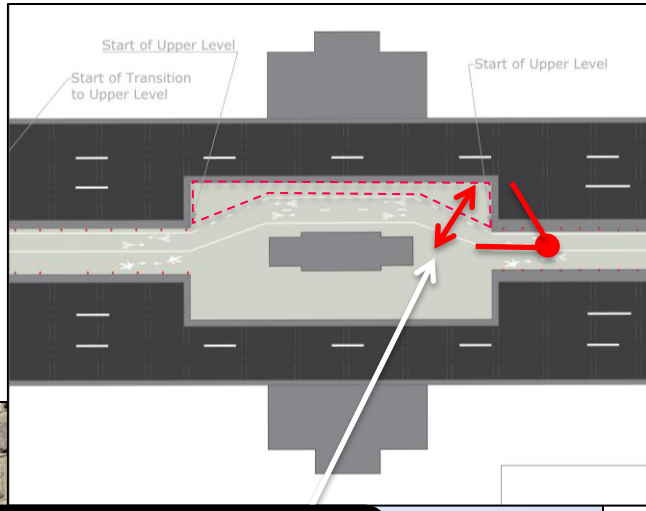
4. TOWER RAMPS



Approaching tower, fence moves from outside of cables to inside, narrowing path further

5. TOWERS

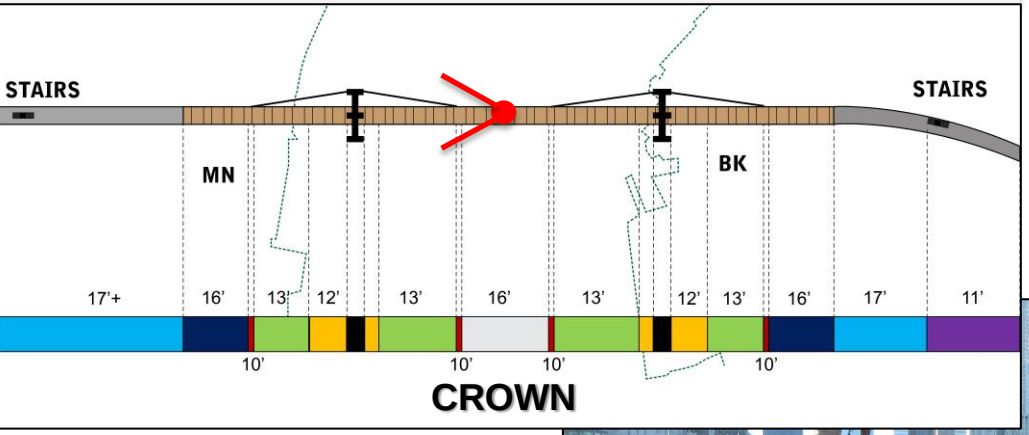




Pedestrians cross bike lanes for photos and views at Tower expansion

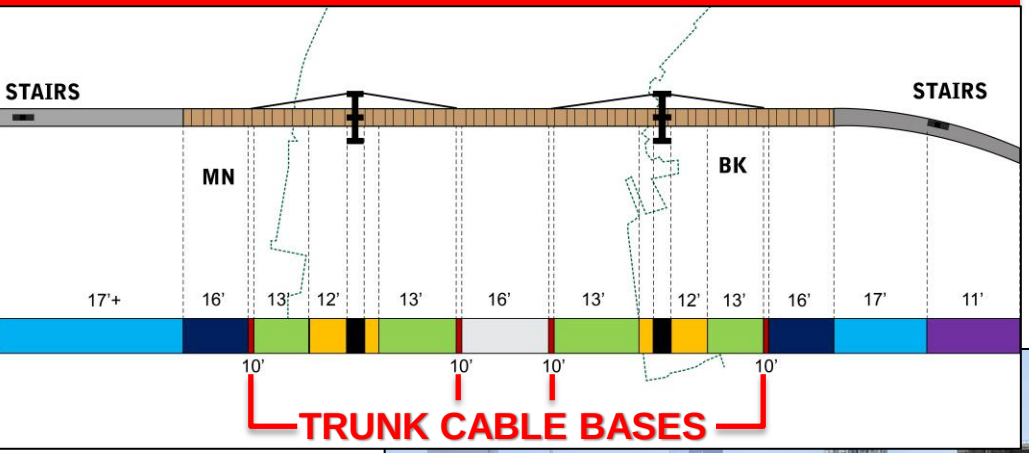
43'

6. CROWN



Approaching the Manhattan tower at the crown is the most popular section for stopping & taking photos

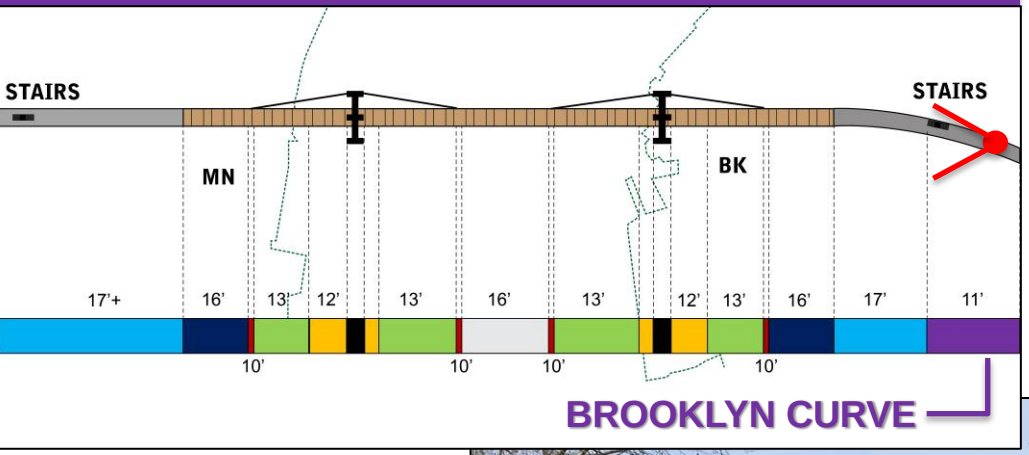
7. TRUNK CABLE BASES



Narrowest point on bridge is at trunk cable bases where the path is 10’

Iconic view for photos at narrowest point on bridge

8. BROOKLYN CURVE

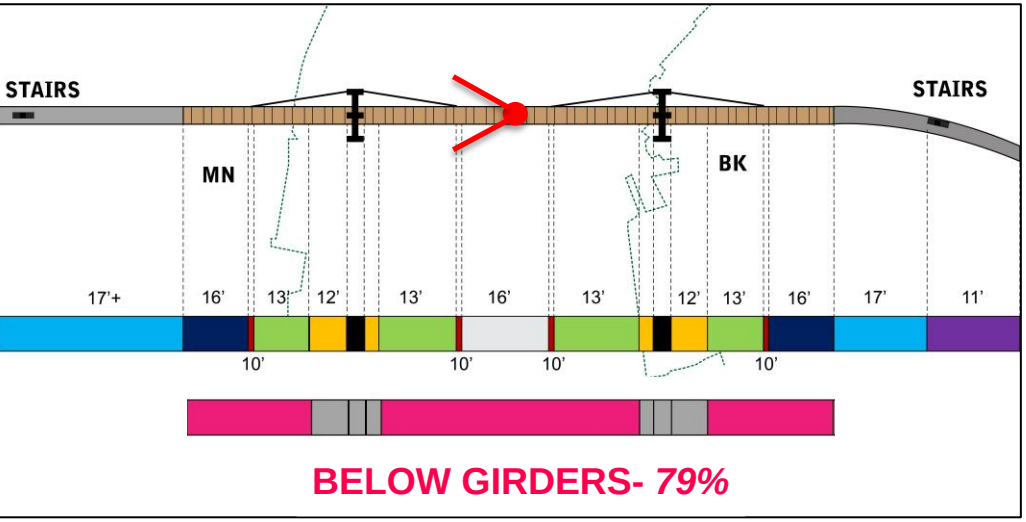


Narrow path, excess space on north side of fence to accommodate staircase

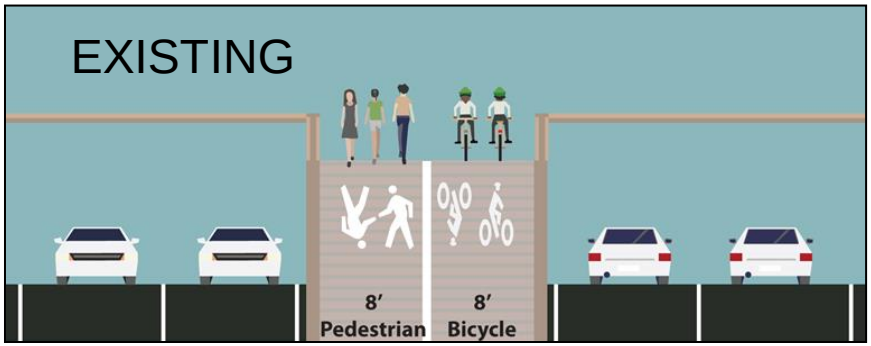
DECK TO GIRDER RELATIONSHIP

V

TYPICAL BRIDGE CROSS-SECTION



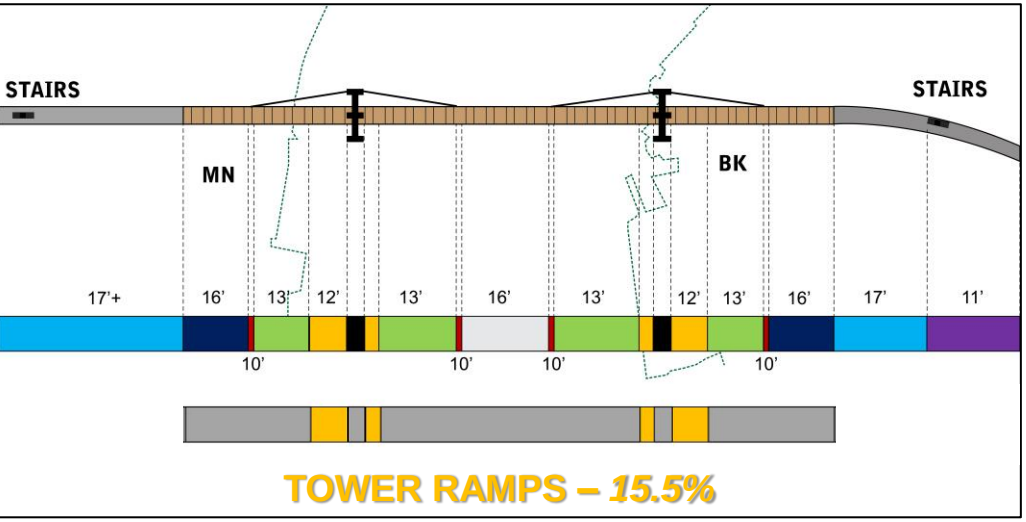
BELOW GIRDERS- *79%*

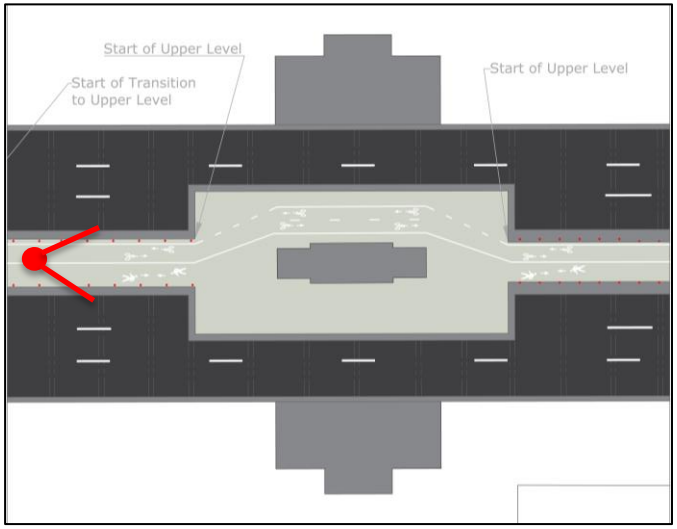


Height relationship between promenade and girders

The majority of the wood deck is 4' below girders except at the towers and tower ramps

RAMP UP TO GIRDER HEIGHT



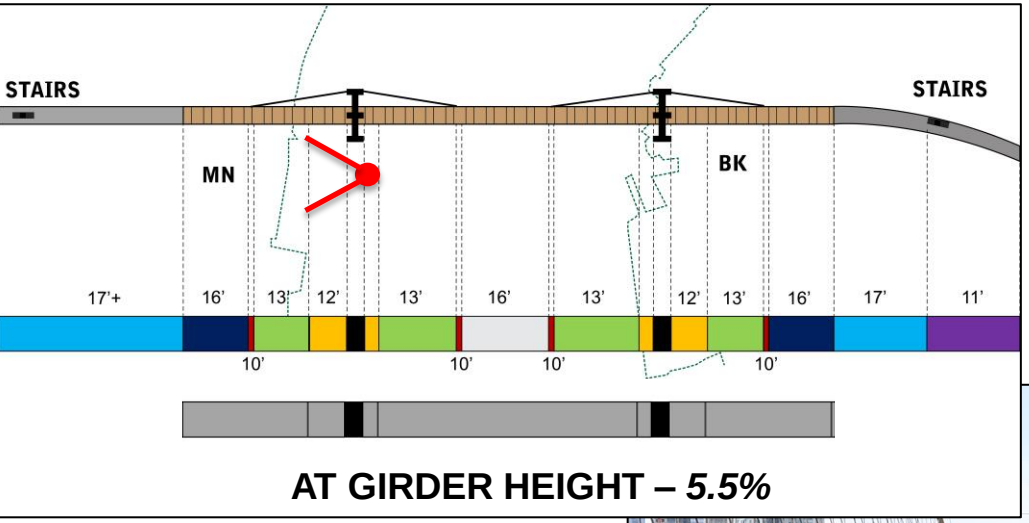


Pathway ramps up to girder height approaching towers

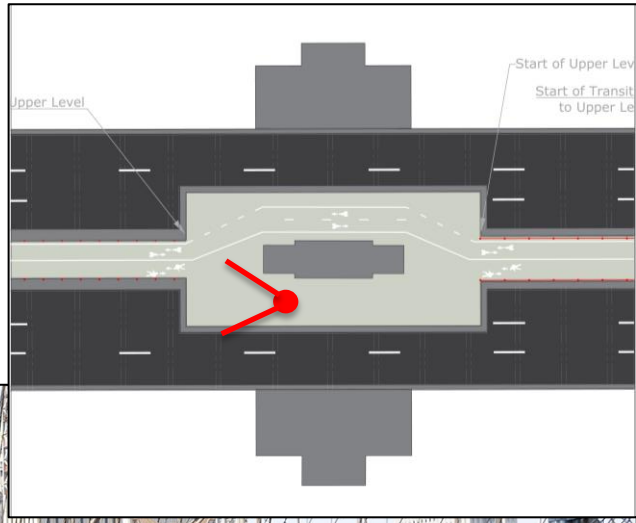
INITIAL IMPROVEMENT CONCEPTS

VI

OPPORTUNITY FOR ADDITIONAL SPACE



AT GIRDER HEIGHT – *5.5%*



Pathway expands on top of girders around towers

Potential pedestrian space

Potential expansion over girders

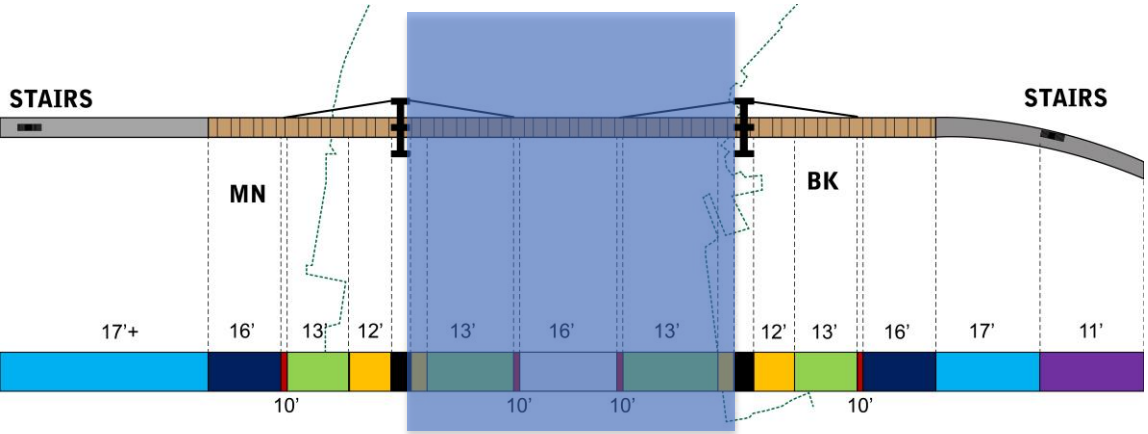
Rendering shows new space between towers only, concepts beyond towers will be explored

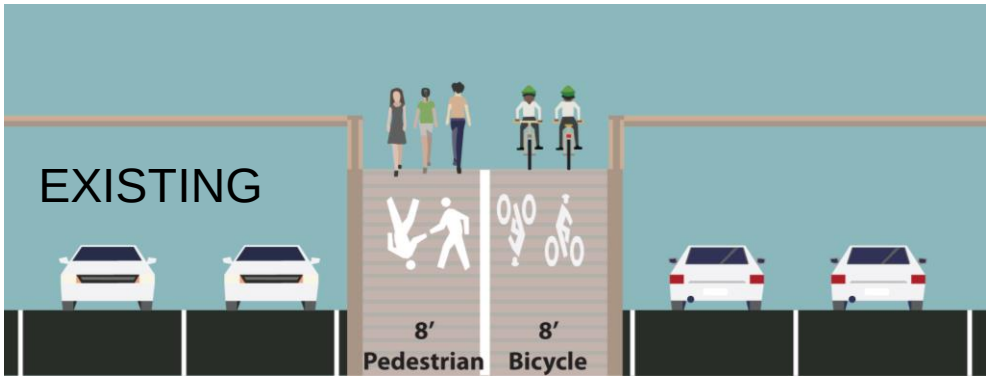
BETWEEN TOWERS CONCEPT

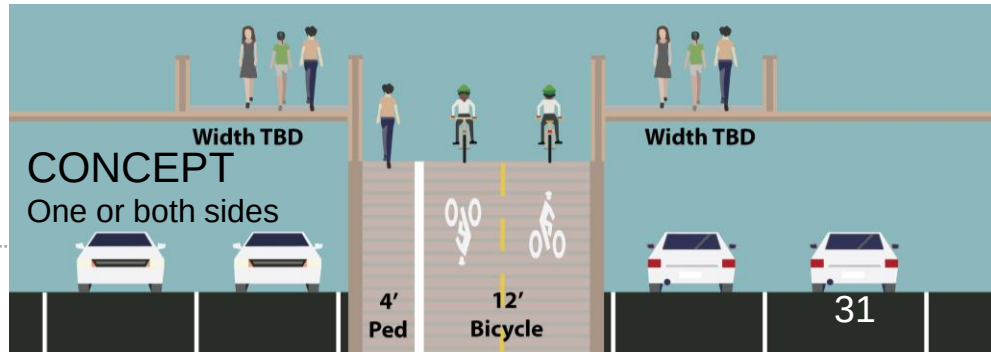
6 **Crown**

3 **Wood Deck with Cables**

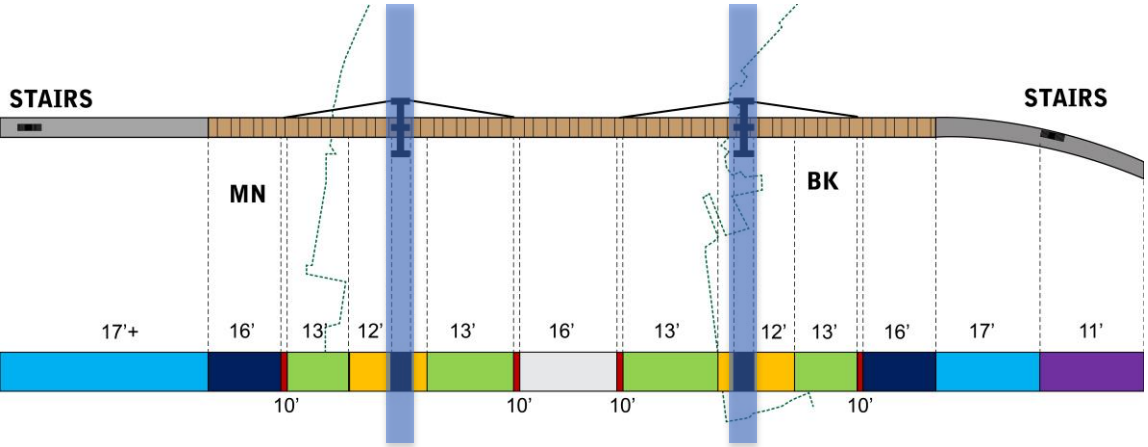
- Build pedestrian decks over roadway girders
  Option 1: Dual Deck or Option 2: Single Deck
- Midpoint ramps and stop controlled crossings allowing pedestrian access across bike path.
- Support stopping/resting activities, consider light touch concessions and Citibike station





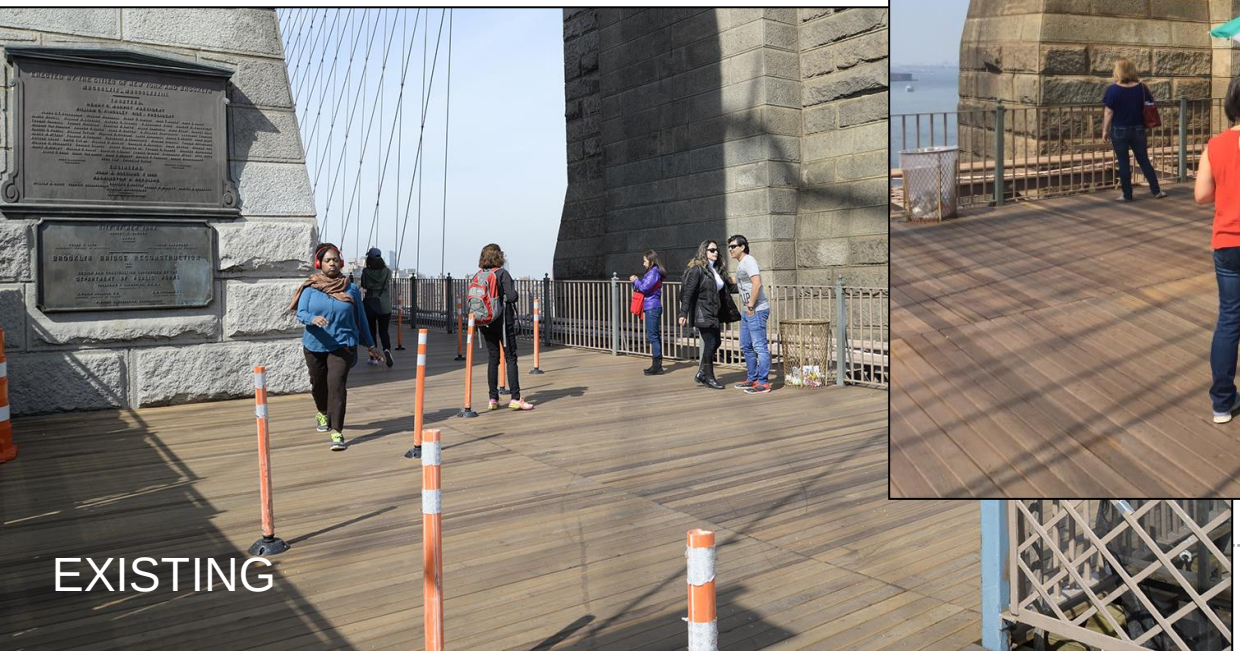


TOWER CONCEPT



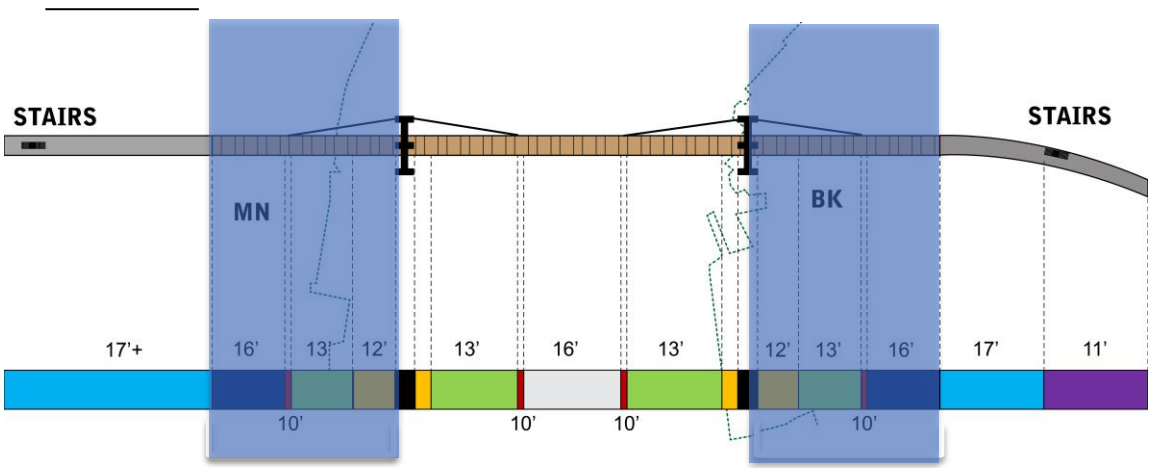
5 Towers

- Add stop controlled crosswalks to existing markings to calm cyclists and allow pedestrian access.
- Support stopping/resting activities, consider light touch concessions and Citibike stations



EXISTING

TOWER APPROACH CONCEPT

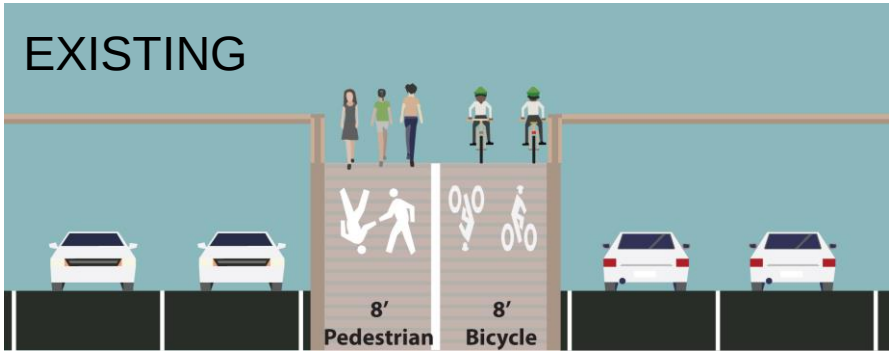


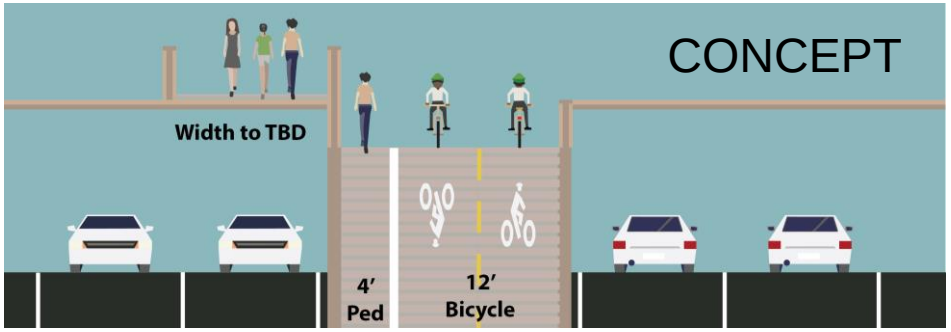
2 **Wood Deck Approaches**

3 **Wood Deck with Cables**

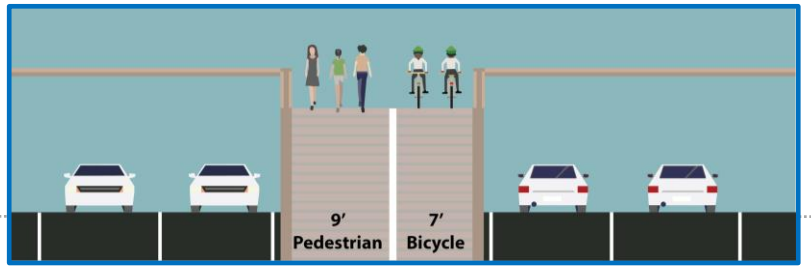
4 **Tower Ramps**

- Build pedestrian deck over roadway girders or length of cables

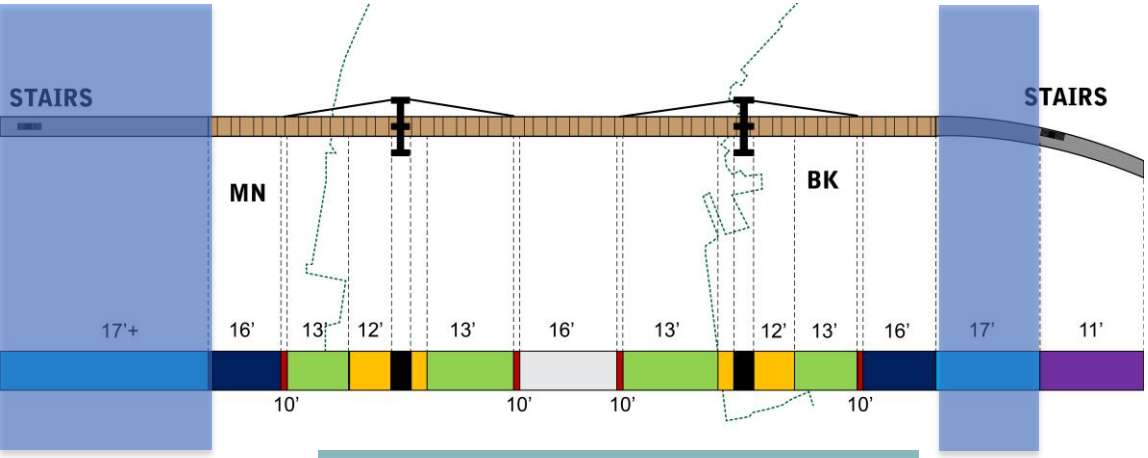




If needed to limit additional weight new pedestrian deck can be forgone for **Wood Deck Approaches** that are 16’ wide with no wires. Consider shifting centerline to add space for pedestrians



CONCRETE APPROACH CONCEPT



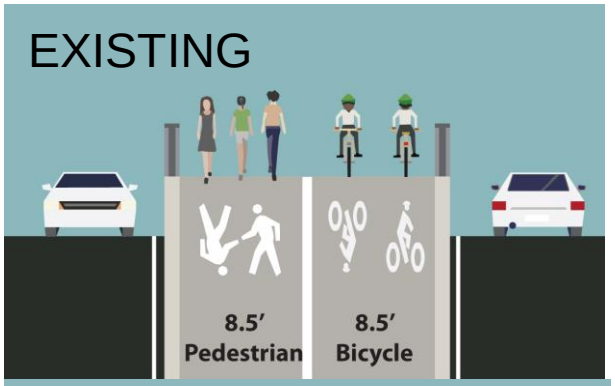
1 Concrete Approaches

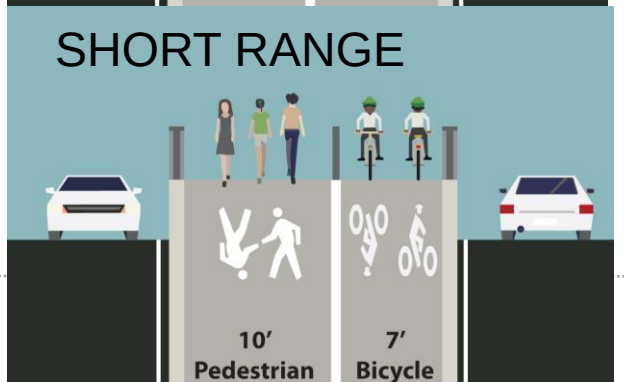
Short Range:

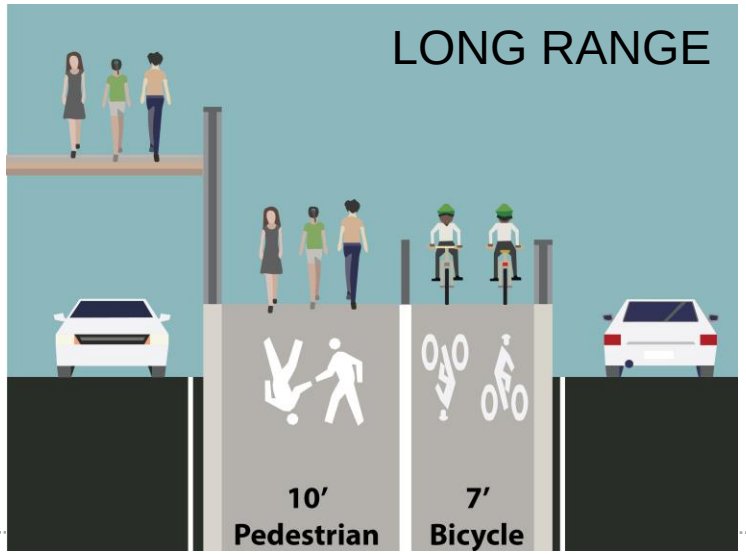
- Reallocate existing even split between bikes and pedestrians to 10' for pedestrians and 7' for bikes.
- Add seasonal fence to reduce conflicts

Long Range:

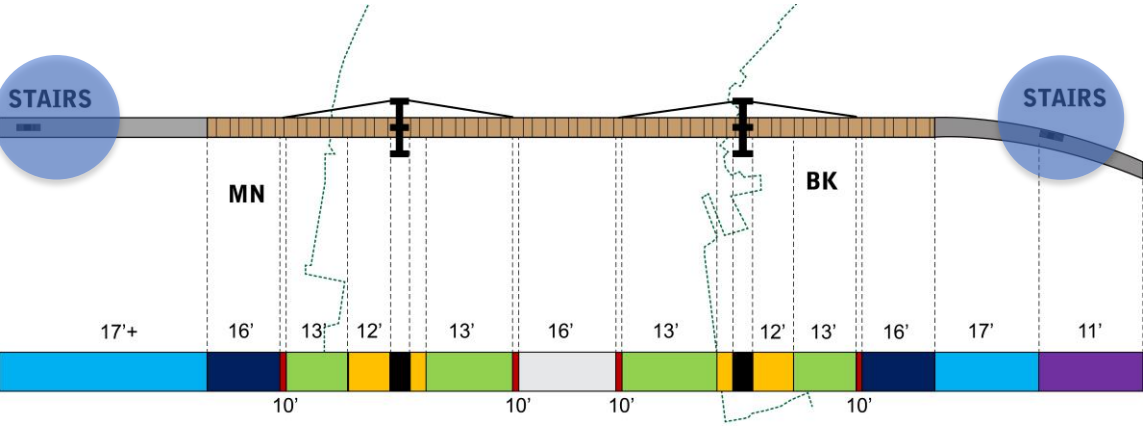
- Build out of elevated cantilevered walkways







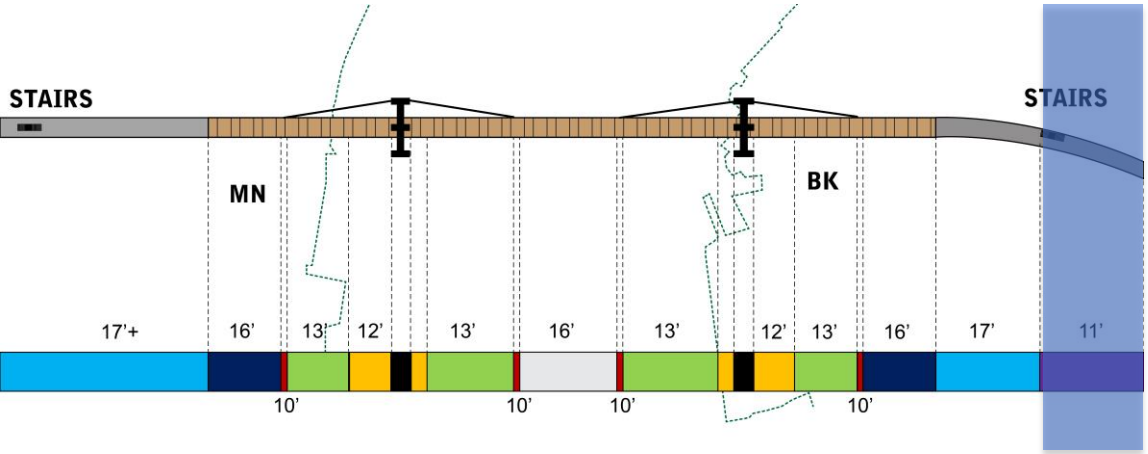
STAIR PINCH POINT CONCEPT



7 **Stair Pinch Points**

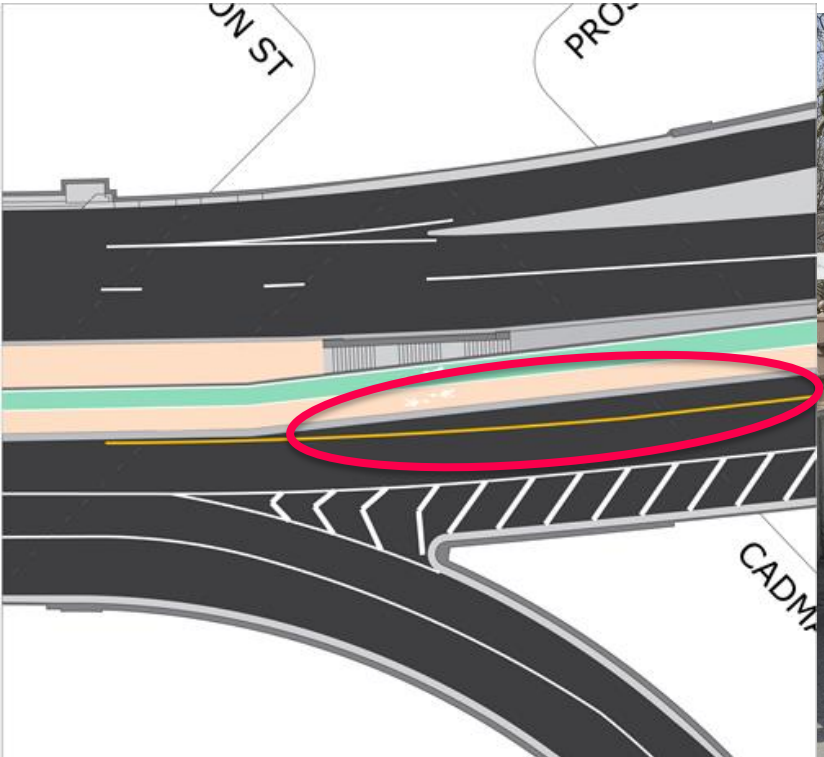
- **Brooklyn Stairs** - Add stop controls and crossings to manage speed/conflicts.
- **Manhattan Stairs** - Explore feasibility of closing & covering stairway.

BROOKLYN CURVE CONCEPT



8 **Brooklyn Curve**

- Room to reallocate roadway space and/or unused promenade space to widen pedestrian/bicyclist path



PROCESS/NEXT STEPS

VI

PROCESS / NEXT STEPS

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