

An aerial photograph of Boston, Massachusetts, showing the city skyline and the Northern Avenue Bridge. The bridge is a long, multi-lane structure crossing a body of water. In the foreground, there are several modern buildings, including a prominent one with a glass facade. The background shows more of the city and the harbor.

Northern Avenue Bridge

*Mayoral Advisory Task Force
December 10, 2019*



- Approval Of Minutes, June 27, 2019
- Update – Honoring History
- How We Got Here
- Creating Iconic *People First* Experiences
- Next Steps
- Discussion & Public Comments

Update – Honoring History



Update – Honoring History



Update – Honoring History



Truss superstructure

Deck structure



Deck structure – existing conditions

Approach Truss Spans – Lower Chords



Span 2, Truss A2S – L23L24



Span 2, Truss A2S – L24L25 at L24



Span 1, Truss A2N – L4L5 at L4



Span 2, Truss B2N – L24L25 at L24

Truss superstructure members – existing condition

Approach Truss Spans – Verticals above the Deck



Span 1, Truss A2N – L1U1



Span 2, Truss B2N – L27U27



Span 2, Truss B2S - L30U30



Span 2, Truss B2S – L28U28

Truss superstructure vertical members – existing condition

City of Boston
Northern Avenue Bridge Project
Appendix B: Inspection Summary Photos

Swing Span – Upper Bracing



South Bay – West End Bracing (at U9)



South Bay – U14 Sway Brace



Center Bay – U22 Sway Brace



North Bay – U14 Sway Brace

Truss superstructure lateral bracing – existing condition

Swing Span – Diagonals



Truss A1N – U9L10 near U9



Truss B1N – L15M16 at L15



Truss B1N – L16M15 at L16

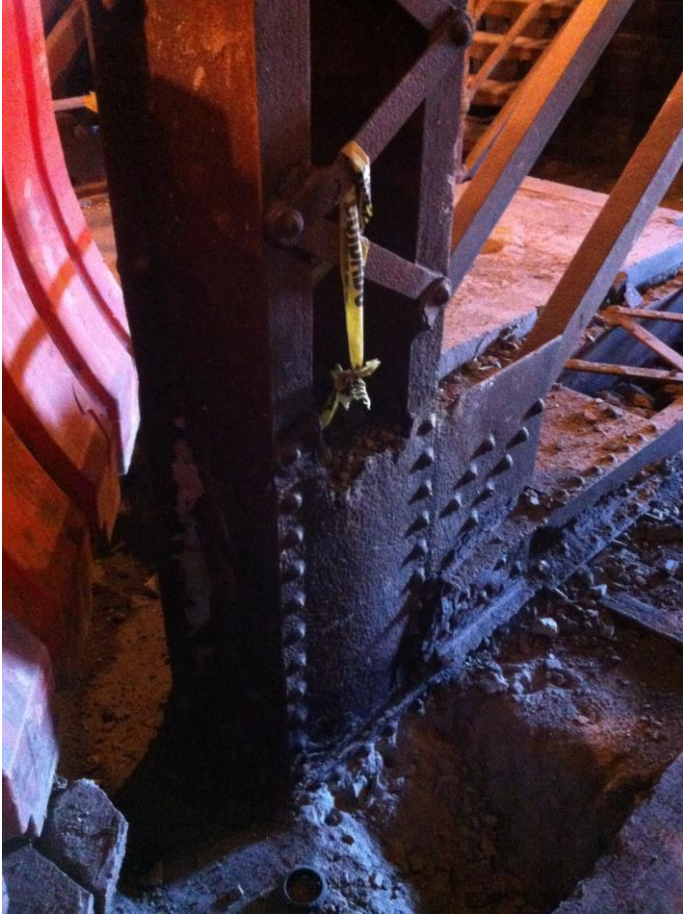


Truss B1S – L9U10

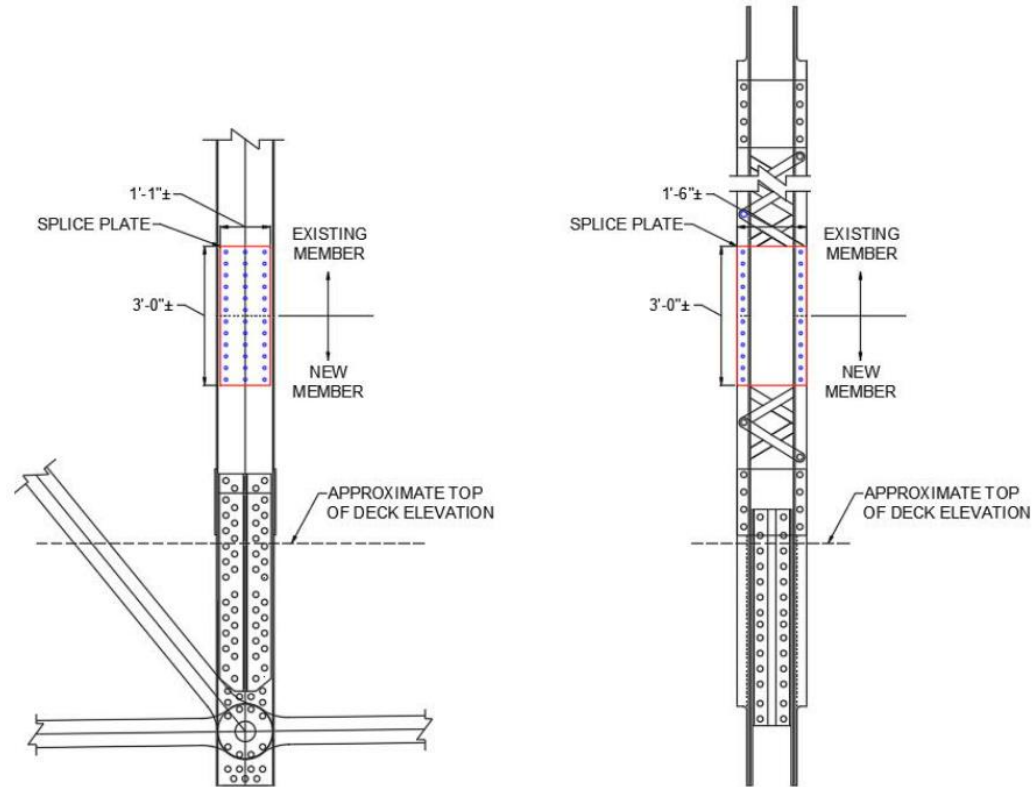
Truss superstructure diagonals – existing condition



Example of historic steel column repair (non-bridge structure)
The High Line (New York, NY)



Example of historic steel column repair (non-bridge structure)
Battery Maritime Building (New York, NY)



Schematic truss vertical splice detail

Update – Honoring History

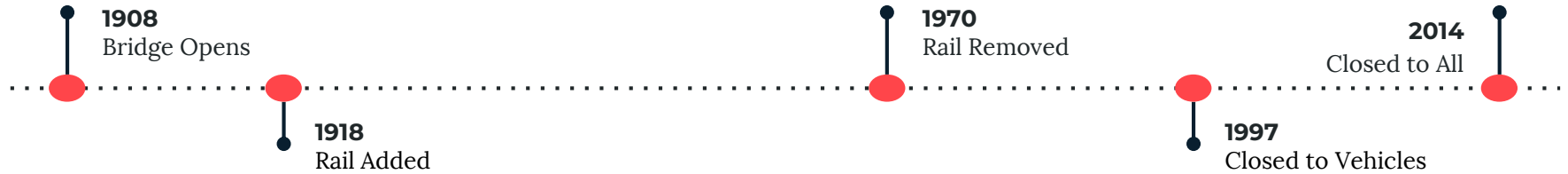


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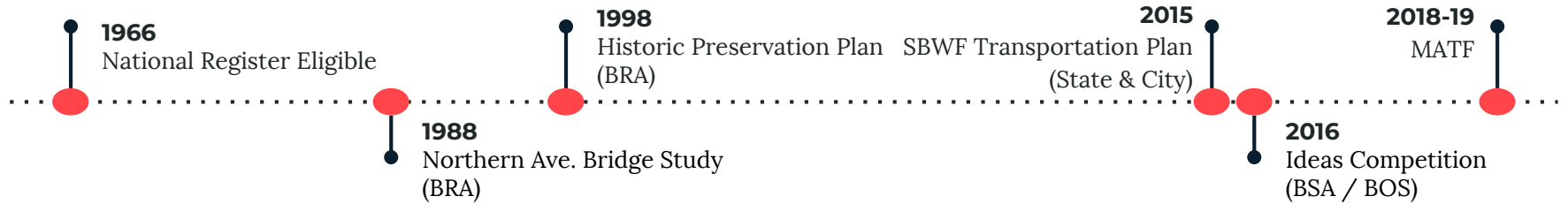


- What we have done
- What we have heard & learned
- What it means for the bridge's size & style

Timeline of the Northern Avenue Bridge



Timeline of Planning Studies (Not an exhaustive list)



Providing Design Guidance for:

- Honoring **History**
- Improving **Mobility**
- Increasing **Resiliency**
- Creating a **Destination**



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What We Have Heard & Learned: History



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Constituent Preferences on Bridge Designs

27%	30%	18%	25%
Restore	Contextual	Reinterpret	Basic

A quarter of surveyed constituents would like to see a restored bridge.

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Implication for the Bridge’s Style & Size:

- It is a priority, if possible, to reflect the profile of the bridge.
- Reuse of most of the existing bridge elements would require repair or reinforcement.
- There are concerns with reusing 100-year-old original steel in main truss structural members.
- The cost and uncertainties are high for rehabilitation of the current bridge.

What We Have Heard & Learned: Mobility



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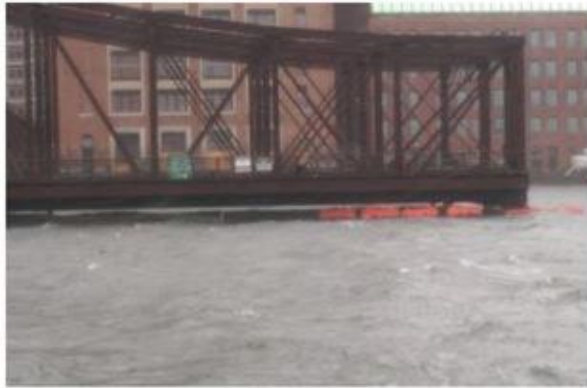
Implication for the Bridge's Use:

- The bridge has to work first and foremost for people on foot & cyclists.
- Its design and use should not preclude emergency access or egress.
- On the first day limiting to walking, biking, transit and emergency vehicles.
- Can evolve over time.

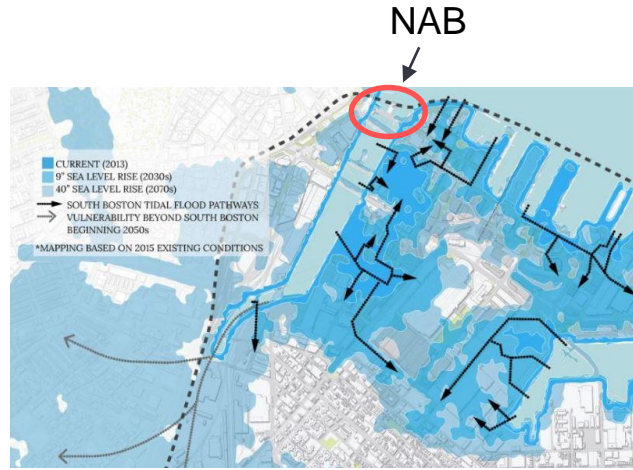


Storm Surge has already brought the harbor to the bottom of the bridge deck.

What We Have Heard & Learned: Resiliency



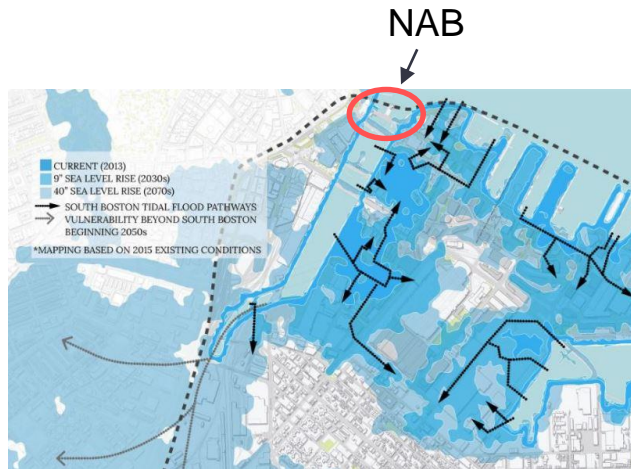
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Projections for another 40" of sea level rise by 2070.



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Implication for the Bridge's Style & Size:

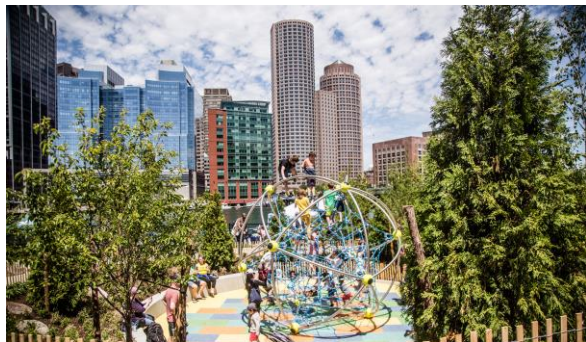
- The bridge must be raised.
- A raised bridge eliminates the need for a moveable bridge.
- There is not an obvious role the bridge plays as a flood barrier in the channel.

What We Have Heard & Learned: Destination



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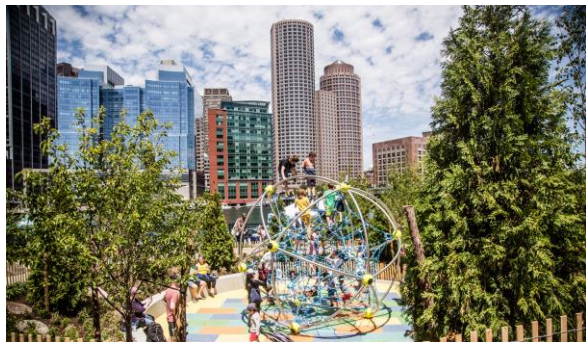


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Constituent Preferences on Bridge Experience				
85	63	53	12	11
Active	Vibrant	Passive	Solitude	Programmed

Constituents want a dynamic place, but not necessarily an overly programmed place.

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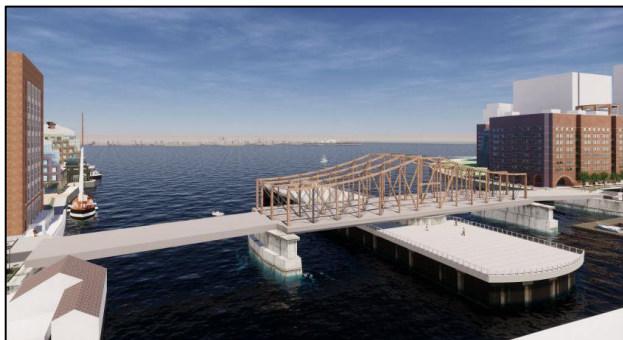
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Implication for the Bridge’s Style & Size:

- The bridge should be both an icon and one that complements the Channel.
- Narrower approaches lead to better integration into the neighborhood.
- The experience of crossing the bridge is equally as important, as the experience of being on it.
- While a pavilion isn’t essential, if it exists, it should focus on connecting people to the water.

What It Means For The Bridge's Size & Style



1. Bridge Height: Raised for resiliency
2. Bridge Movement: Fixed for simplicity
3. Bridge Width: Narrow as possible in general, particularly at the ends
4. Bridge Profile: Reflects the historic profile, if possible
5. Bridge Style: Reinforces the history of the bridge
6. Bridge Destination: Provides a complementary space, focused on the water
7. Bridge Use: On the first day limiting to walking, biking, transit and emergency vehicles ... a *People First Experience*
8. Bridge Use: Can evolve over time

Creating Iconic People First Experiences



People First





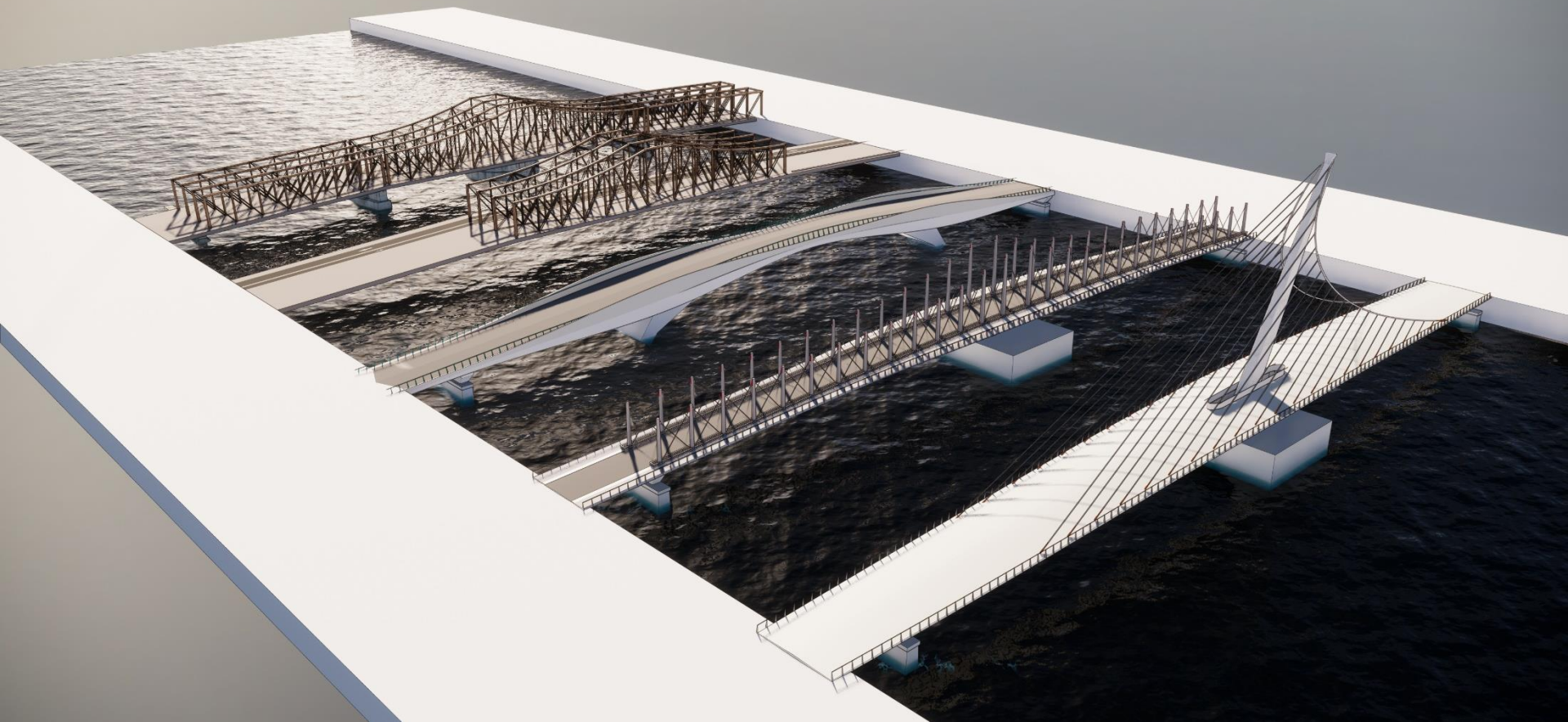




Experience



Previous Design Concepts



Basic Concept



Basic Bridge



An aerial photograph of a modern urban park. In the foreground, a large, curved playground area is visible, featuring a bright yellow and orange sand surface with colorful geometric patterns. The park is landscaped with various trees, shrubs, and walkways. In the middle ground, a multi-lane bridge spans across a body of water. The background is dominated by a dense city skyline with numerous high-rise buildings of varying architectural styles. The sky is clear and blue.

Bold Concepts

Sail



Single Arch



Double Arch





Summary of Experiences

An aerial photograph of a modern urban park. The park features a large, curved play area with a yellow and orange rubber safety mat. In the background, a river flows through a dense city skyline with various skyscrapers. A bridge with a steel truss structure spans the river to the right. The park is landscaped with trees, walkways, and modern architectural elements.













- Selection of Preferred Concept + Public Meeting
 - 1st Quarter 2020
- 25% Design + Design Public Hearing
 - 3rd Quarter 2020
- 100% Design
 - 2021

The animation will be posted on YouTube and linked from the website as soon as possible. Please continue to check the website at Boston.gov/northern-ave for the link.

Basic Concept

Bold Concepts



Thank You

