

BEACON STREET (ARLINGTON STREET TO MASS. AVE)

FINAL DESIGN REPORT

We will repave Beacon Street, create a safer intersection at Beacon Street and Berkeley Street, and close a key gap in the bike network.

CITY OF BOSTON CITYWIDE GOALS

An aerial photograph of a city street, likely in Boston, showing a mix of residential and commercial buildings, trees, and a road with traffic. The image is overlaid with a semi-transparent blue filter. The text is centered and white.

- ▶ Green & Growing
- ▶ First for Families
- ▶ Creating & Connecting

STREETS CABINET VISION

To make Boston's streets work for everyone.

These streets are:

- ▶ Safe and welcoming for people of all ages and abilities, regardless of how they travel.
- ▶ Functional, well-maintained, and reflective of the uniqueness and vitality of every neighborhood.
- ▶ Designed for a zero-carbon future and adapted for the impacts of climate change.



VISION FOR BACK BAY STREETS

Back Bay is:

- ▶ A thriving, mixed residential and commercial district that deserves *great public spaces*
- ▶ A *transit hub*; buses should be able to circulate efficiently
- ▶ An active commercial area that needs *managed curbside access* to serve residents and businesses
- ▶ A destination thousands of people *access by bike* daily; they need a safer, more connected network



WE NEED A BETTER BIKE NETWORK

More people will ride bikes if they have access to bike lanes that are separate from vehicles and from pedestrians.¹

And, Bostonians want better bike lanes.²

- ▶ 50% probably or definitely would bike more if separated bike lanes were in their neighborhood.
- ▶ 77% supported building separated bike lanes even if some space for driving or parking was removed.

On busier streets, we aim to provide **separated bike lanes**. These bike lanes make the most people feel comfortable.



¹ Portland State University, Transportation Research & Education Center (TREC). "[Lessons from the Green Lanes: Evaluating Protected Bike Lanes in the U.S.](#)"

² Based on a [survey by MassINC Polling Group in 2021](#)

TALKING WITH YOU



Thank you for your feedback!

- ▶ **Fall 2019:** Launched Connect Downtown with community walks in Back Bay, Beacon Hill, Bay Village, and South End.
- ▶ **March 2020:** Hosted open house for Connect Downtown at Boston Public Library
- ▶ **September 2022:** Mayor Wu announces a 9.4 mile expansion of better bike lanes throughout Boston, including Boylston Street and Berkeley Street in Back Bay
- ▶ **Winter 2022:** Launched outreach for Boylston Street and Berkeley Street with postcards, outreach to businesses, virtual office hours
- ▶ **Spring/Summer 2023:** Hosted pop-up events around Back Bay, virtual office hours, more business outreach
- ▶ **Summer 2024:** Virtual public meeting, virtual office hours, one-on-one stakeholder conversations.

WHAT WE HEARD FROM YOU

- ▶ What is the City doing to maintain infrastructure for pedestrians and drivers?
- ▶ Are there other streets that would serve as better bike routes to key neighborhood destinations?
- ▶ Will adding separated bike lanes add congestion on busy streets?
- ▶ Can you avoid adding more complexity to already challenging intersections?
- ▶ Can we maintain parking and curbside access for residents, businesses, and institutions?

We revised the design to address your concerns while creating a connected bike network.



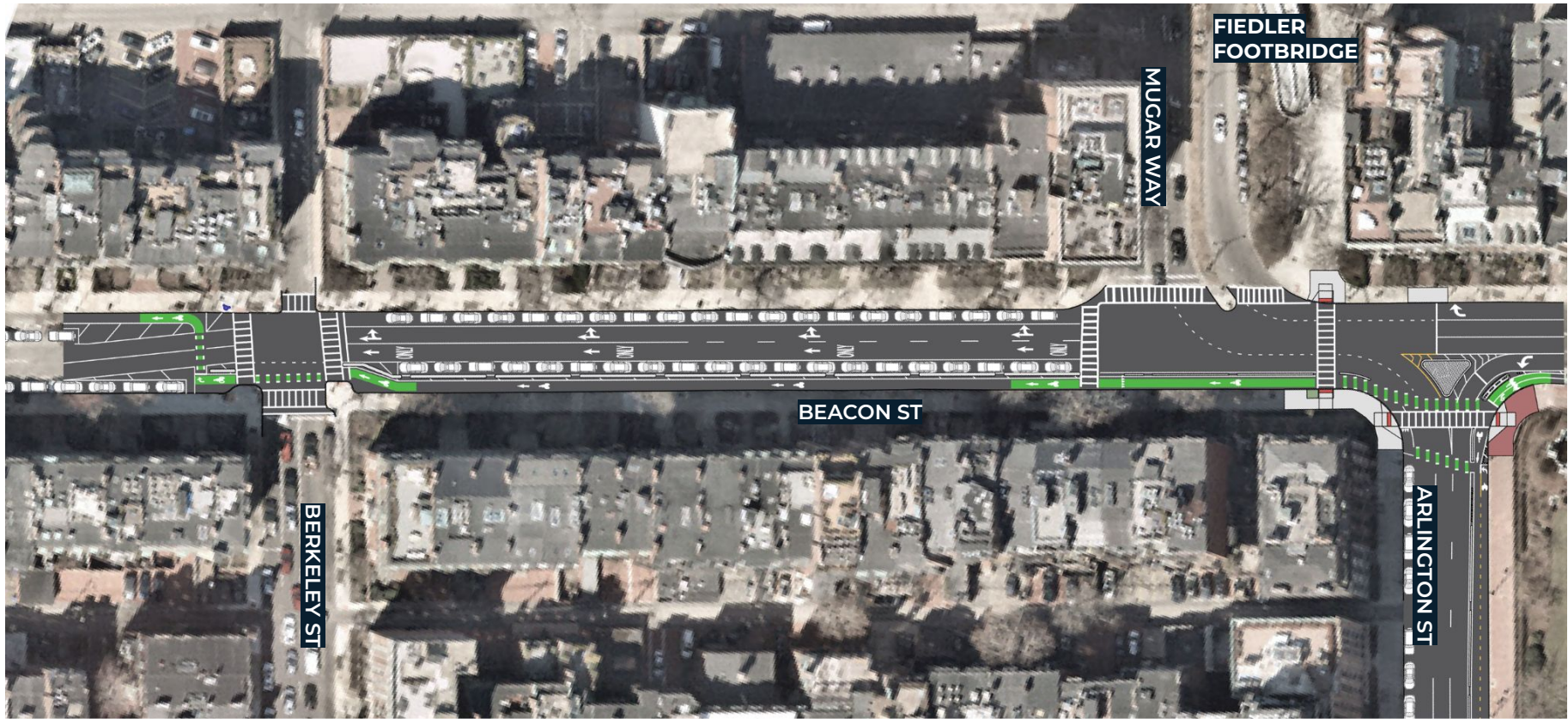
DESIGN DETAILS



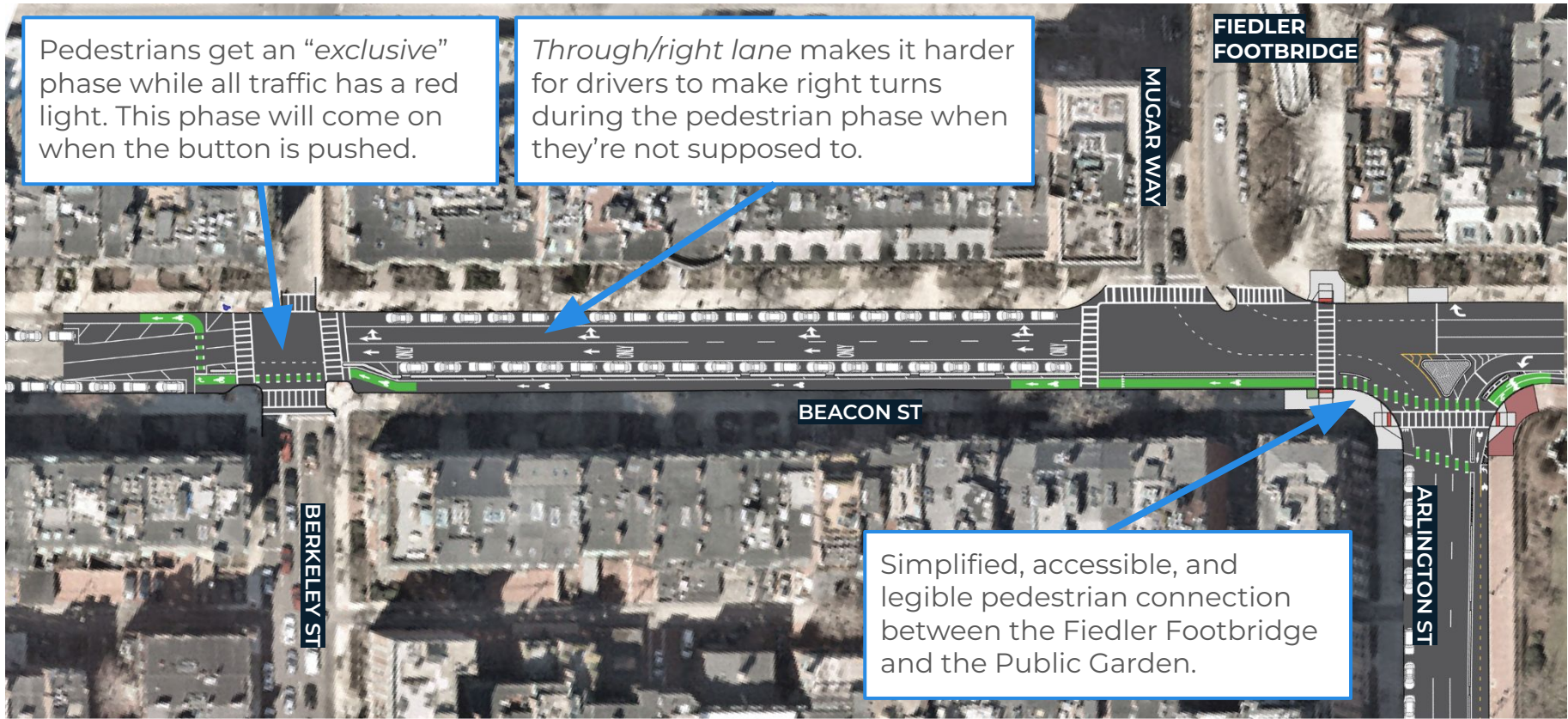
2023 PROPOSED DESIGN



REVISED DESIGN



REVISED DESIGN: PEDESTRIANS

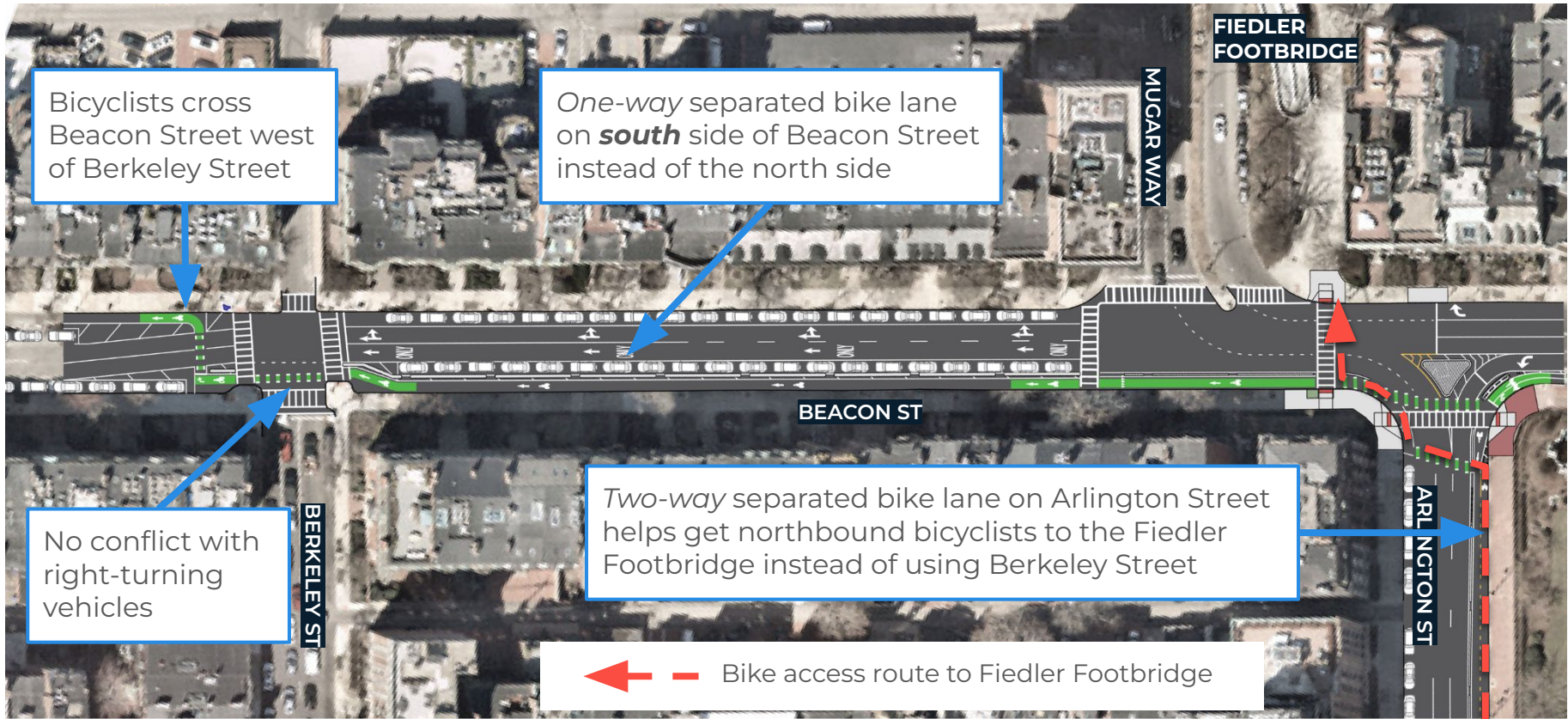


Pedestrians get an “exclusive” phase while all traffic has a red light. This phase will come on when the button is pushed.

Through/right lane makes it harder for drivers to make right turns during the pedestrian phase when they’re not supposed to.

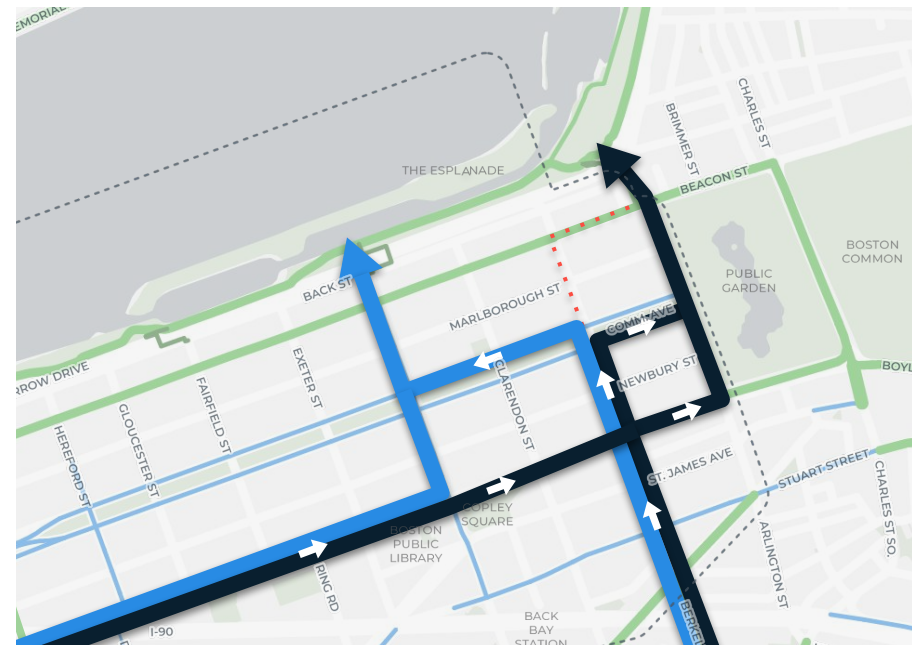
Simplified, accessible, and legible pedestrian connection between the Fiedler Footbridge and the Public Garden.

REVISED DESIGN: BIKES



CONNECTING YOU TO THE ESPLANADE

- ▶ Our revised plan provides better connections to the Charles River path system compared to the previous plan.
- ▶ New and revised projects can form a more connected bike network:
 - Boylston Street
 - Berkeley Street
 - Dartmouth Street
 - Arlington Street



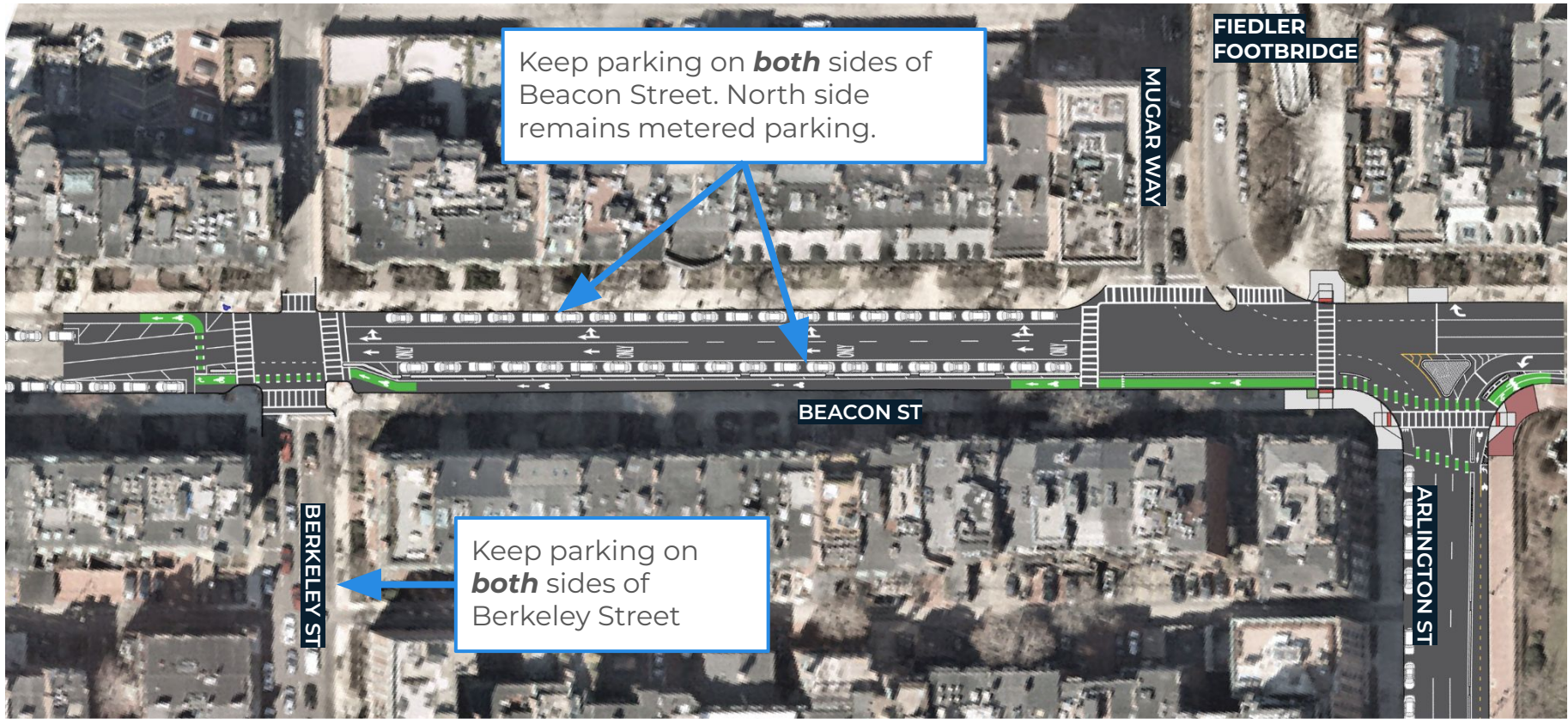
New connections

- ▶ To Fiedler Footbridge
- ▶ To Dartmouth Street Footbridge
- ⋯ Previously planned route

Existing & other planned facilities

- Path or separated lane
- Footbridge
- Bike lane

REVISED DESIGN: PARKING

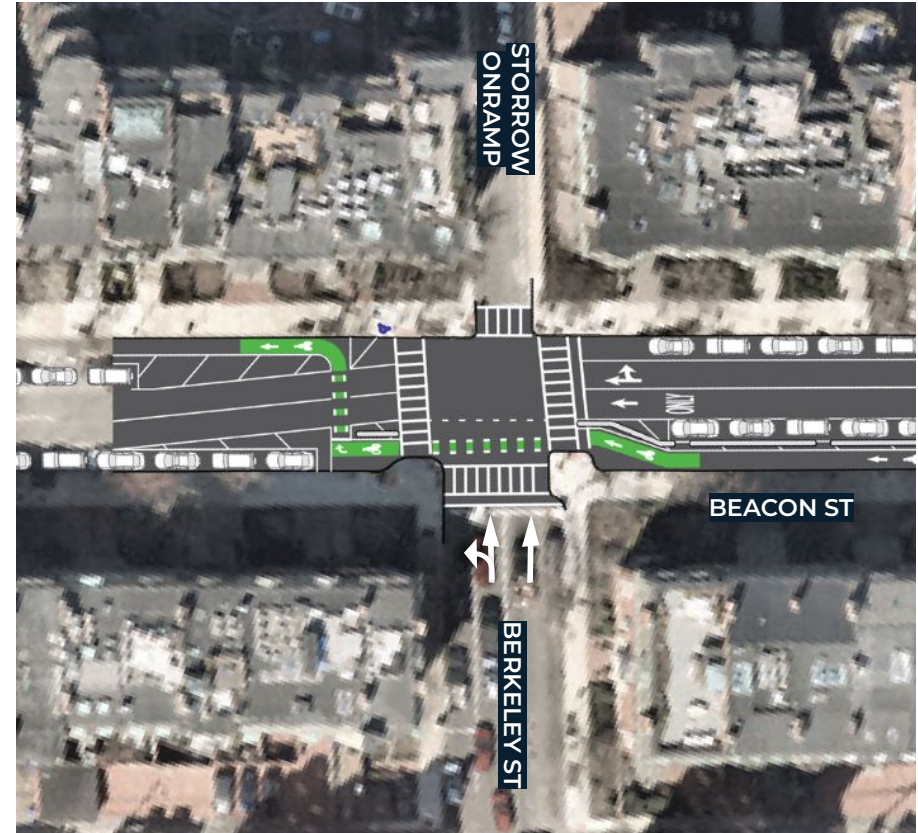


REVISED DESIGN: TRAFFIC CAPACITY

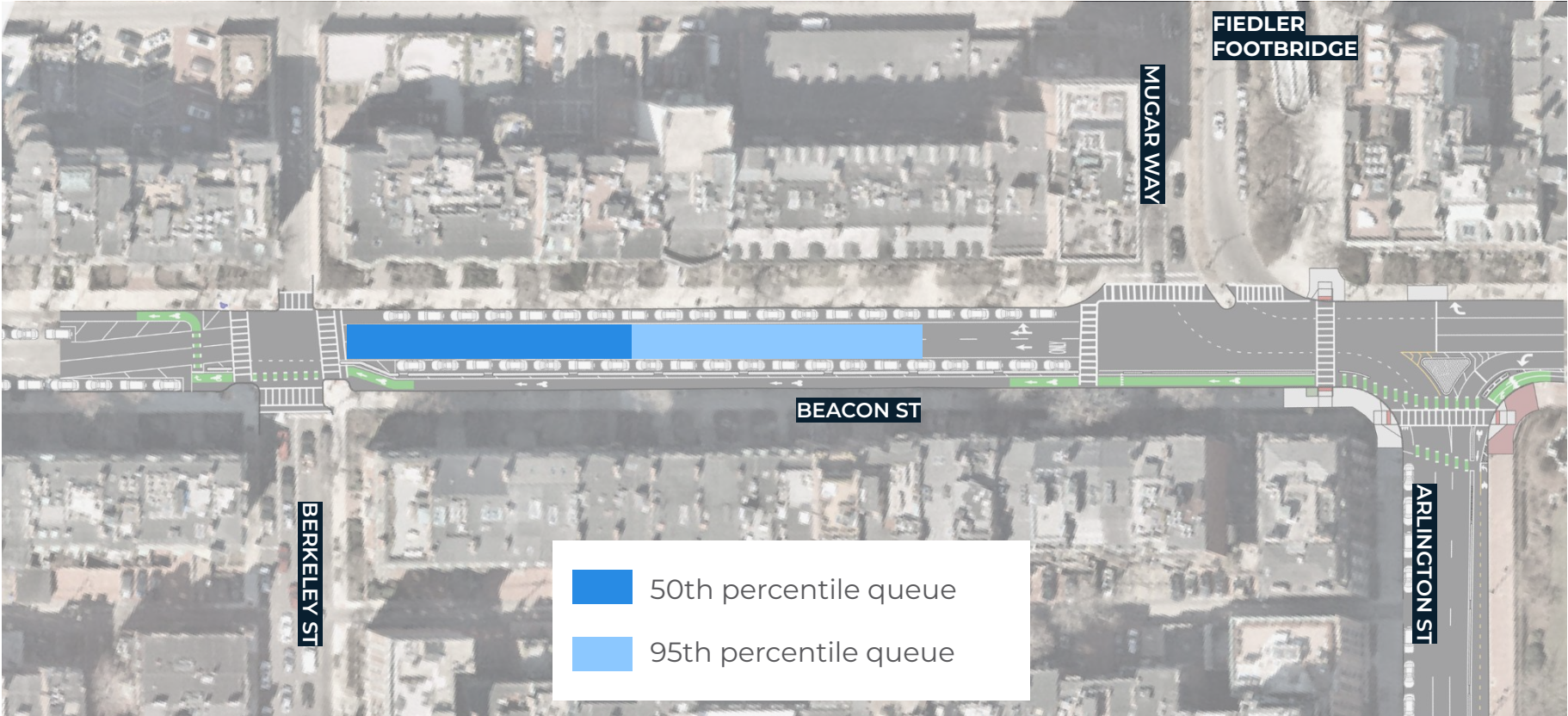
- ▶ **Two lanes** on Beacon Street approaching Berkeley Street:
 - **Right lane:** for continuing straight and turning right.
 - **Left lane:** for continuing straight only.
- ▶ Berkeley Street: No lane changes planned.

How we design traffic signals:

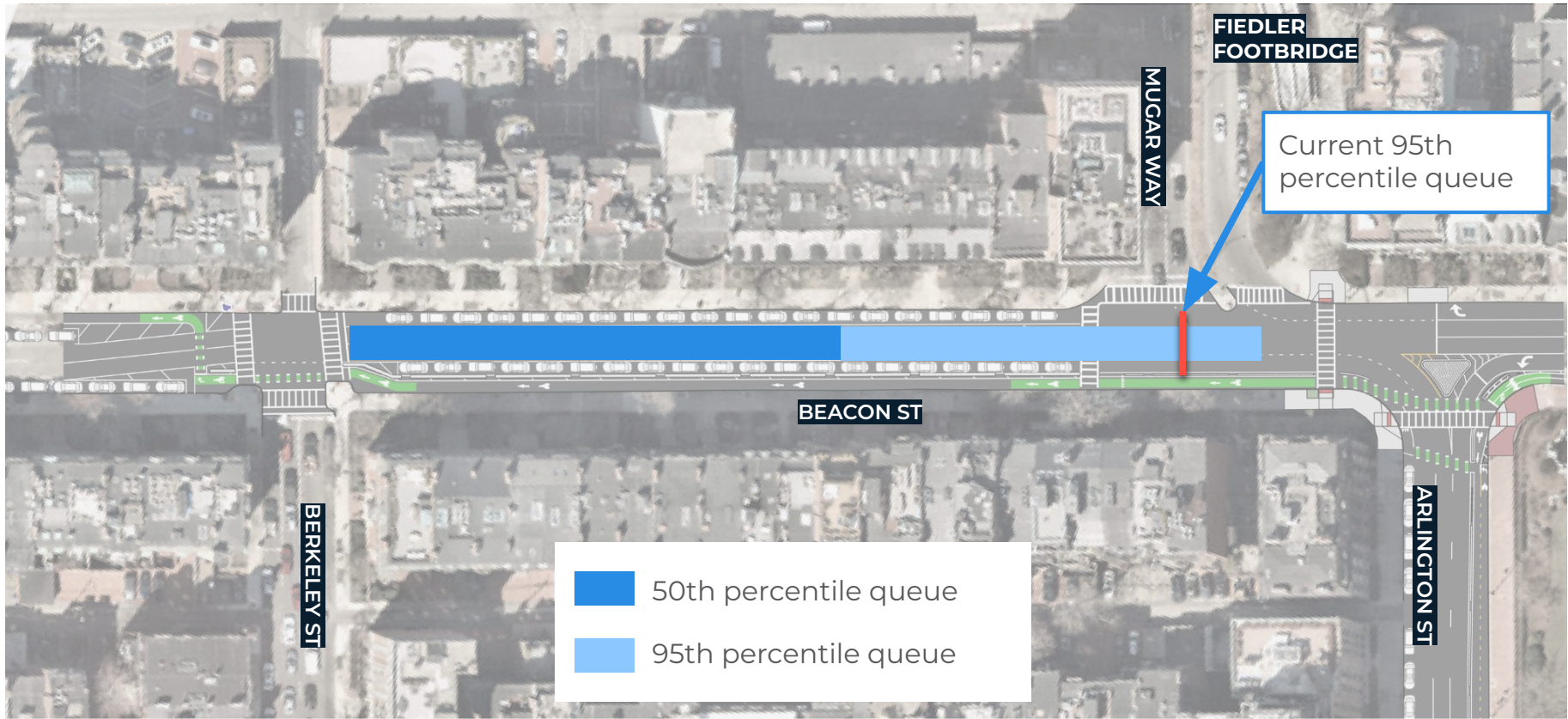
1. Gather traffic data to understand current conditions.
2. Use traffic modeling software to test different designs.
3. Our goal is to find a balance between safety, access, and keeping traffic moving smoothly for everyone.



REVISED DESIGN: AM PEAK QUEUE

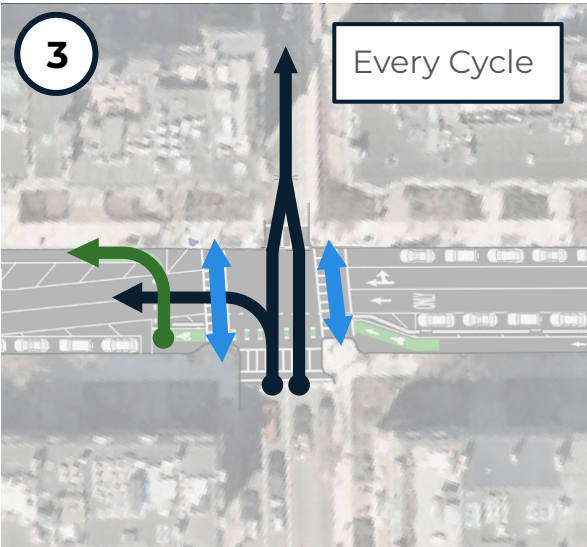
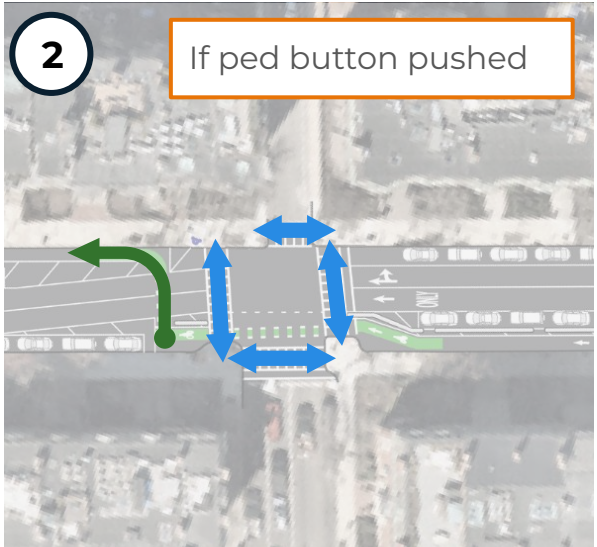
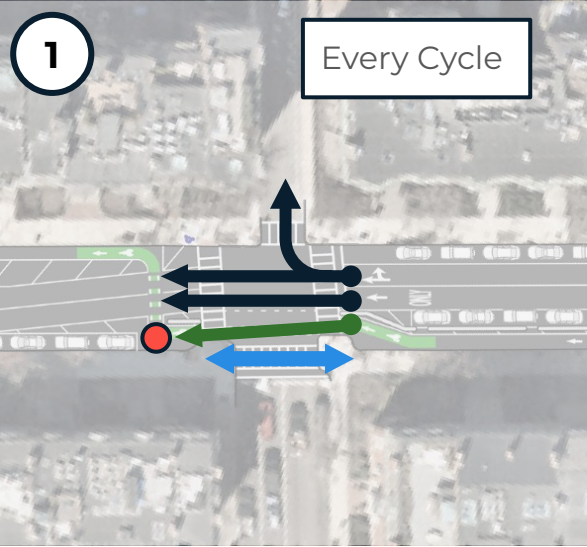


REVISED DESIGN: PM PEAK QUEUE



■ 50th percentile queue
■ 95th percentile queue

HOW THE INTERSECTION WILL WORK



Phase 1: Beacon St westbound gets a green light, including those going straight, turning right, and bicycles. Bikes wait on the west side of the intersection to cross during the next phase.

Phase 2: If the button is pressed, pedestrians cross in all directions. Bikes cross Beacon St outside the crosswalk, continue westbound.

Phase 3: Pedestrians and bikes get a head start before vehicles proceed. Berkeley St northbound gets a green light, including those going straight and turning left.

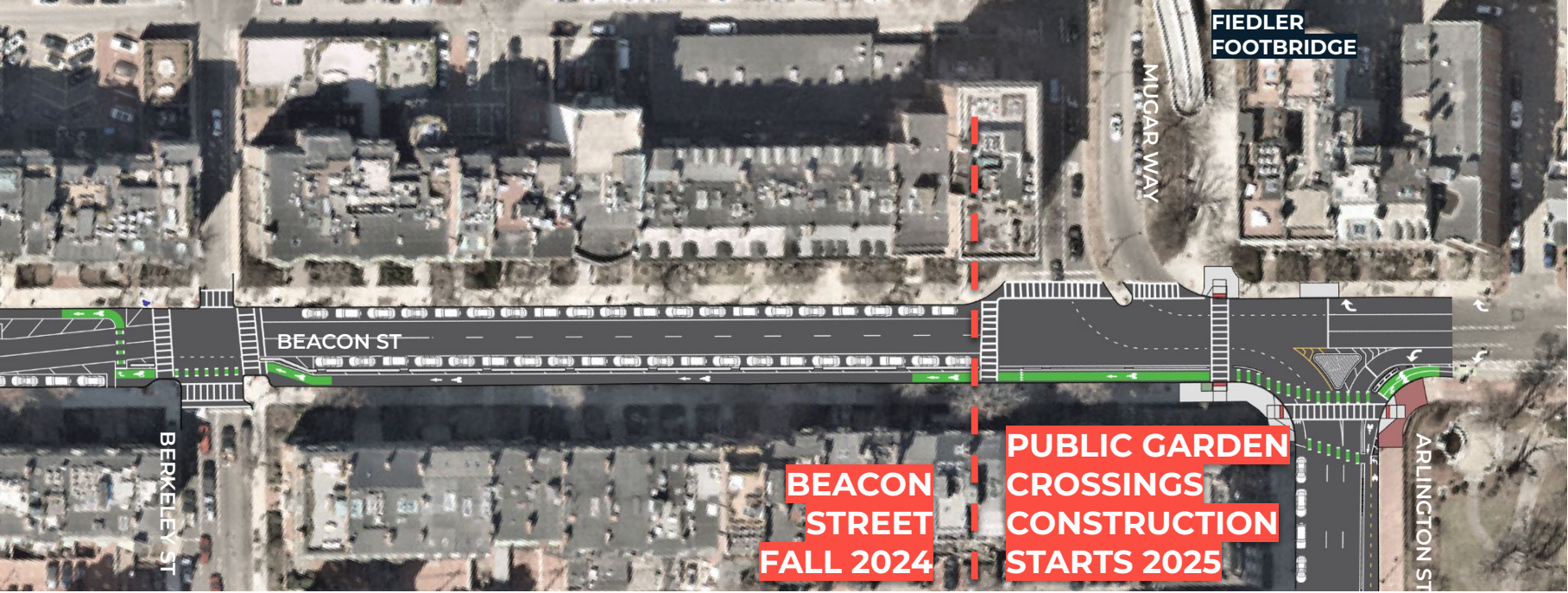
Legend

←● General traffic

↔ Pedestrians

←● Bicyclists

REVISED DESIGN: TIMELINE



The **Beacon Street bike connection** and **Public Garden Crossings** are separate projects with separate construction timelines. *This graphic shows the final condition after both are completed.*

CONFIRMING DATA ACCURACY



CONFIRMING THE ACCURACY OF OUR DATA

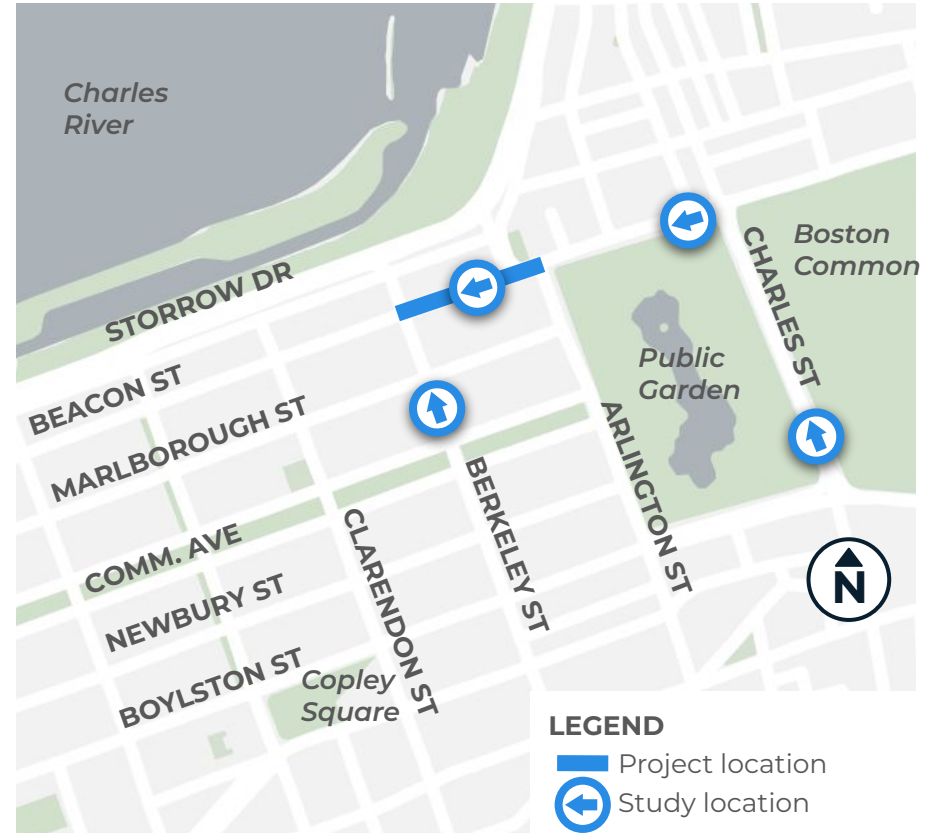
- ▶ We are committed to using the most accurate and up-to-date data needed to inform our planning decisions.
- ▶ Our traffic model is based on Turning Movement Count (TMC) data collected in Fall 2022.
- ▶ We conducted a review of StreetLight data for nearby intersections.
 - “Big data” anonymized smartphone data
 - Useful for “gut-checking” traffic count data
 - We can see how traffic volumes have changed over time.

METHODOLOGY

We collected data from four key locations on streets that are within or near the project area. These locations included:

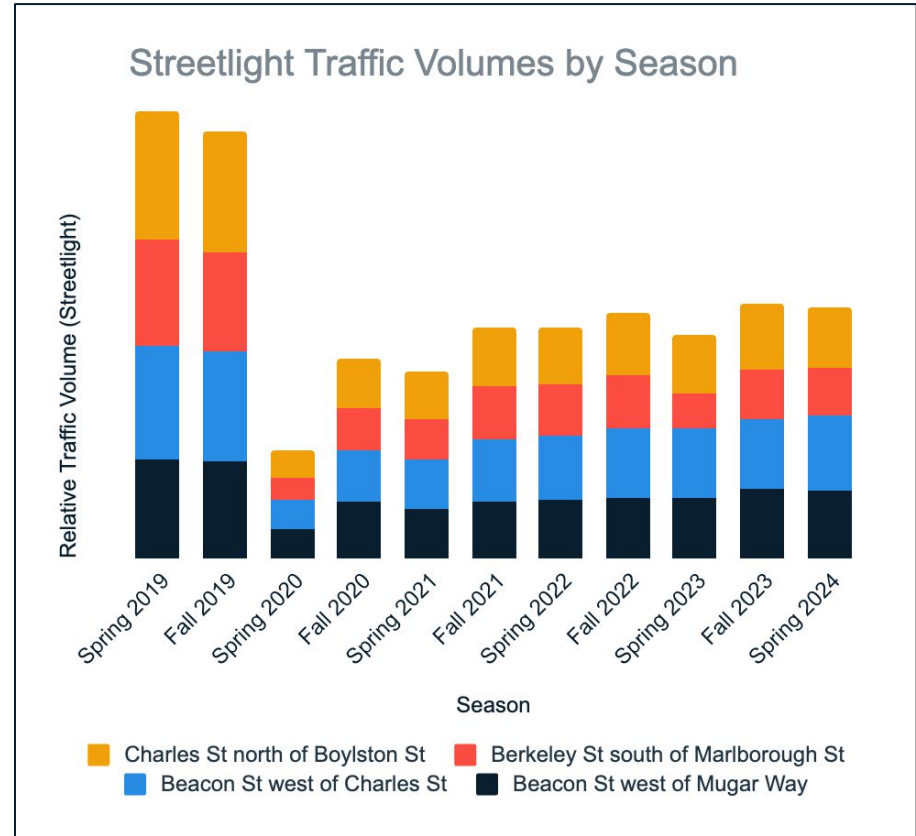
- ▶ Beacon Street west of Mugar Way
- ▶ Berkeley Street south of Marlborough Street
- ▶ Beacon Street west of Charles Street
- ▶ Charles Street north of Boylston Street

For each location, we gathered estimated daily traffic volumes for weekdays during both spring and fall seasons, spanning from Fall 2019 to Spring 2024. This data provides an overview of traffic trends during this period.



OVERVIEW OF TRENDS

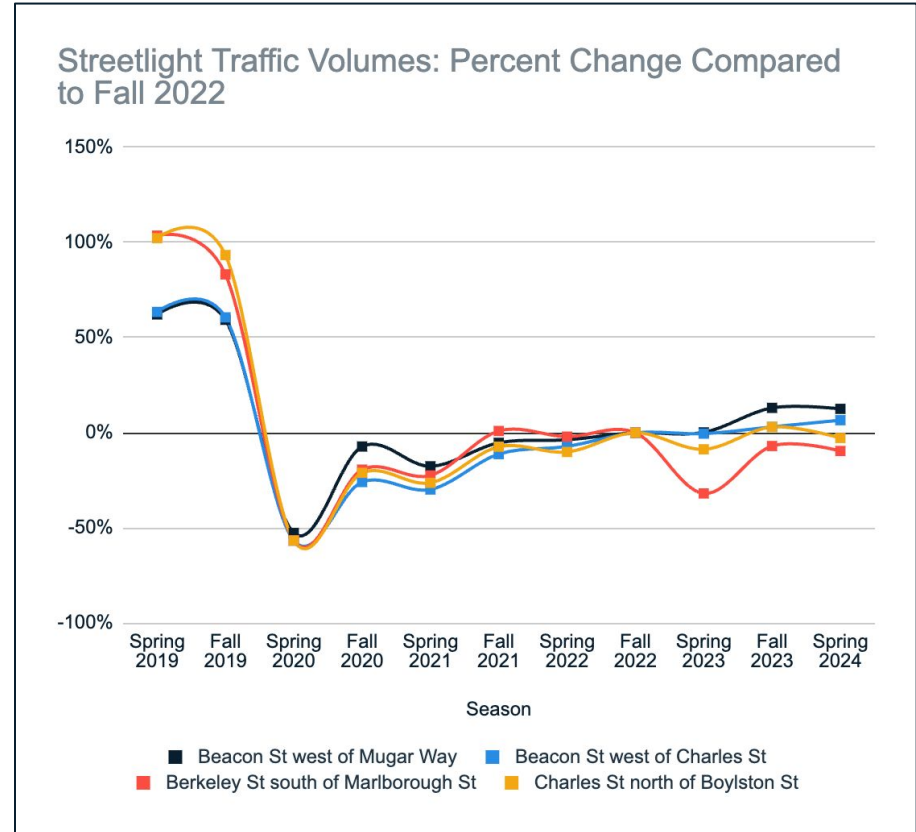
- ▶ Unsurprisingly, traffic volumes fell dramatically in Spring 2020 with the onset of COVID restrictions.
- ▶ **Motor vehicle traffic remains well below pre-COVID levels.** In Spring 2024, total volumes were at 62% of Fall 2019 volumes.
- ▶ Volumes began rebounding in Fall 2020, and **remained fairly consistent from Fall 2021 through Spring 2024.**
- ▶ After 2020, volumes were slightly higher in the Fall than Spring.



CHANGES SINCE FALL 2022

Fall 2022 serves as a valuable benchmark, as it's when we gathered the traffic data used to develop our traffic model for the Beacon/Berkeley intersection.

- ▶ When compared to Fall 2022, the percentage changes in traffic volumes on various Back Bay streets exhibited similar patterns.
- ▶ Specifically, **Beacon Street west of Mugar Way** experienced a moderate 13% increase, while **Berkeley Street south of Marlborough Street** saw a moderate 10% decrease by Spring 2024.
- ▶ These changes are particularly relevant as both streets feed into the Beacon/Berkeley intersection. **When combined, they represent a marginal overall increase of 3% in traffic approaching the intersection.**



CONCLUSION

Streetlight data helps confirm the accuracy of our traffic model based on Fall 2022 data. We found only slight changes in traffic near the Beacon/Berkeley intersection since Fall 2022

New traffic counts would mainly help fine-tune signal timing. They won't change our main finding: Beacon Street can handle peak hour car traffic with two lanes instead of the current three.

Additional traffic counts would delay this important project without providing much new information.



THANK YOU

*More information: boston.gov/beam-street
Email us: btd@boston.gov*