

Drawing Outside the Lines

**Plan for a Shared
Cambridge Street**

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Introduction: Going for a Walk

Cambridge Street weaves through two diverse neighborhoods in the heart of Boston, acting as an essential connection point for residents, employees, and visitors alike. Unfortunately, the current design of the street creates conflict rather than connection. By prioritizing the throughput of cars, Cambridge Street has pushed pedestrians, cyclists, and transit users to the margin. We propose a new vision for Cambridge Street that prioritizes universal accessibility, street safety, and community integration. But before we talk about the future, we must understand the present. Let's go for a walk.

The street begins at Charles Circle, where the Longfellow Bridge from Cambridge crosses Storrow Drive. This is a critical hub for the neighborhood: bustling Charles Street is just to the South, the Liberty Hotel is to the North, and Mass General Hospital (MGH) is at the Northeast corner of the intersection. Charles Circle also serves as an important connector for a series of transportation modes: The Charles/MGH Red Line station connects the neighborhood to the T, a well-protected bike lane brings cyclists from Cambridge, and the Appleton Pedestrian Bridge brings foot traffic from the Esplanade. However, in its current design, Charles Circle puts these modes in conflict at a dangerous and confusing intersection. With no bike lanes, several highway access ramps, and poorly placed pedestrian crossings, it is no wonder that this area is in the top 5% of pedestrian crashes in Metro Boston (MASSDoT Top Crash Locations, 2022).

As we follow Cambridge Street up Beacon Hill, the large MGH campus extends for several blocks on the North side, with several street entranc-

es for cars, pedestrians, and emergency vehicles. The slope begins to pick up after Blossom Street. There is a large hotel with a Flour café, and the sidewalk feels quite crowded among the outdoor seating that has been added. As we continue to climb, there is a parking lot-oriented plaza with a Whole Foods, the West End branch of the Boston Public Library, a historic home, and the Old West Church. At the top of the Hill, we reach the Charles Hurley building at the edge of the Boston City Hall Plaza. The South side of the street has a more diverse set of businesses – mainly restaurants and bars – sidewalks are similarly narrow alongside the outdoor cafes. There are also a few “classic” urban amenities along the street, such as a liquor store, dry cleaners, and several banks. There is a notable fire station between S Russell and Joy Streets, but otherwise the buildings are typical for a neighborhood adjacent to Downtown Boston. The buildings are a pleasant scale, but the walk is not. In many spots, the brick sidewalk has caved in and created an unsafe walking path. The paving is very uneven in crosswalks and curb cuts are not always accessible. The sidewalk can be narrow and crowded in spots, and you find yourself uncomfortably close to cars. On such a steep slope, it would be nice to stop and rest, but there is nowhere to sit. It's rush hour, and the street is filled with noisy cars that are moving slowly in traffic. We have learned a lot on our walk. We have seen how a place that might look nice on a map or pretty in pictures or street sections can be chaotic and unpleasant in reality. Therefore, we propose a design for Cambridge Street that offers a better walk – and a better drive, bike ride, or transit ride along this corridor.



Photo of a pedestrian crossing the street illegally at Charles Circle. People accessing the Red Line station at Charles/MGH frequently cross the street outside of the crosswalk because the existing pedestrian infrastructure is insufficient



Photo of the poor state of repair on a sidewalk along Cambridge Street. The poor quality of the walkways create dangerous situations for pedestrians, especially those with mobility issues that frequently need to access MGH.



Photo of long line of cars on Cambridge Street during rush hour. The high volume of traffic along Cambridge Street makes it an unpleasant environment for shopping and eating at nearby cafes.

Understanding the Neighborhood

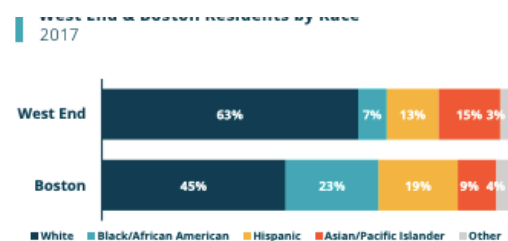
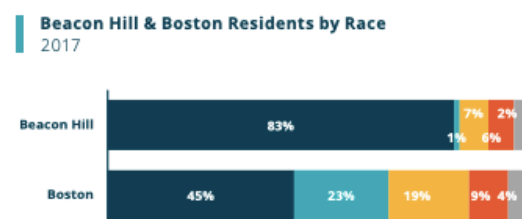
Cambridge Street forms a boundary between two neighborhoods: Beacon Hill and the West End. These neighborhoods have very different histories and building typologies. Beacon Hill is considered one of Boston's most historic and walkable neighborhoods, while the West End experienced urban renewal in the 1960s and now hosts Mass General Hospital and a series of high-rise buildings on the site. As a result, Cambridge Street has a scale half-way between the two neighborhoods. It primarily consists of 4-6 story buildings with ground floor retail and either offices or housing on the upper floors, although there is some variation in heights (as low as 2 stories and as high as 10 stories).

The residents on both sides of Cambridge Street have similar social characteristics; they tend to be more white, wealthy, and well-educated than the city as a whole (BPDA Neighborhood Profiles, 2019). Additionally, this district attracts a lot of non-residents: Mass General Hospital, Government Center, the Liberty Hotel, and a series of small businesses bring employees and tourists into the neighborhood to work and shop. Therefore, Cambridge Street must cater to a diverse set of needs: hospital employees getting to work and taking their lunch breaks, citizens seeking government services, residents picking up their dry cleaning, and tourists wandering the narrow streets of Beacon Hill to name a few. Currently, these activities are centered around auto-mobility: small parking lots in front of businesses, the majority of street space dedicated to cars, and prioritized auto access to MGH. However, this is not a reflection of the preferences of the residents in Beacon Hill and the West End, which each have

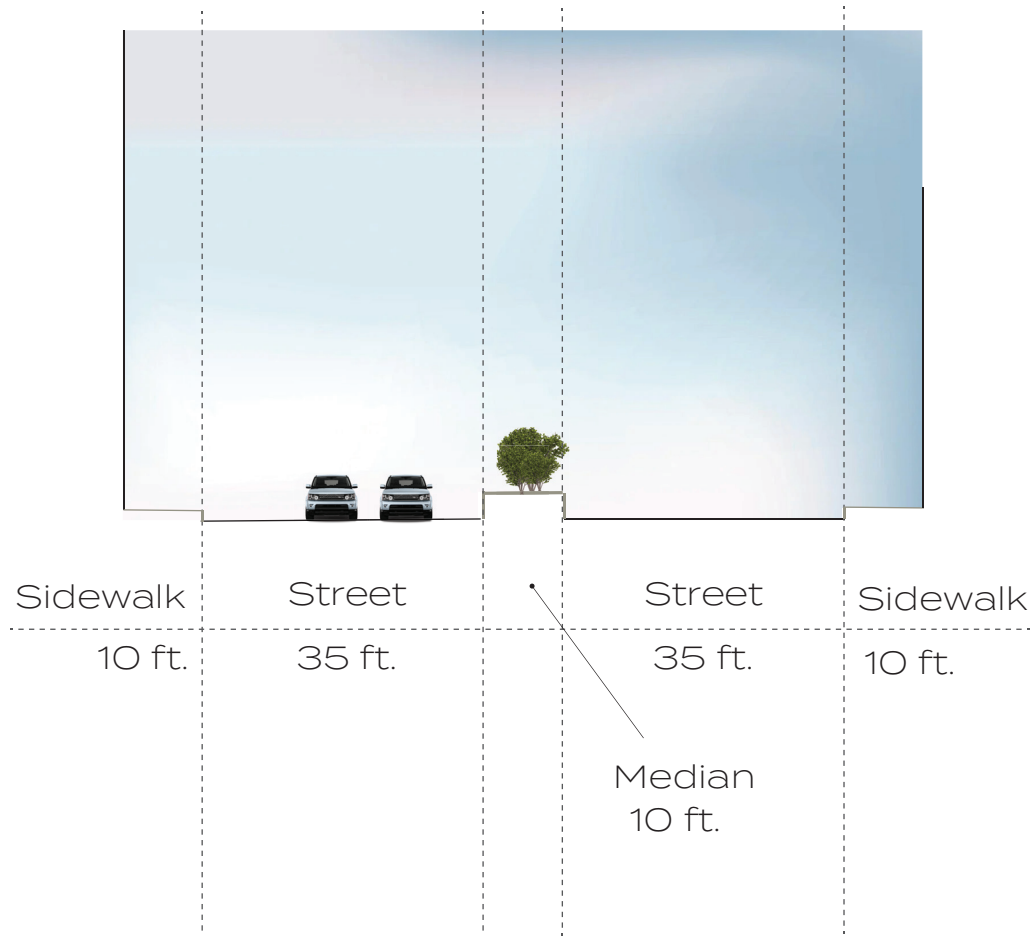
very low vehicle to household ratios (Beacon Hill: 0.18, West End: 0.10, Citywide: 0.95) (BPDA Neighborhood Profiles, 2019). Furthermore, this undervalues the quality of transit access for this area, which has up to 4 rapid transit stations within a 15-minute walk from each other. We can sum up these neighborhoods with the following characteristics:

- High Income
- High Walkability Scores
- Low Car Ownership
- High Employment
- High Transit Connectivity
- Strong Tourism Attraction

Cambridge Street's car-centric design is a detriment to these characteristics, rather than an asset – it's time for a street that capitalizes on this successful neighborhood.



Breakdown of West End and Beacon Hill residents by race (BPDA Neighborhood Assessment, 2019)



Representative section of the current design of Cambridge Street. 80% of the street is devoted to cars, while only 20% is devoted to pedestrians and 0% is devoted to cyclists.



Sample cross-section of Cambridge Street at Sudbury Street. Buildings average 4-6 stories with some notable exceptions such as the high rise on the right side in the distance (Google Maps, 2022).

The Time is Now

While our design for Cambridge Street is oriented towards the needs of the immediate surroundings, it also responding to several macro trends in the Greater Boston Area. Our city's changing needs in the COVID-19 pandemic, development throughout the Boston metropolitan region, and emerging mobility technologies are making it clear that the time is now to improve Cambridge Street.

Responding to COVID-19: The COVID-19 pandemic drastically changed the way we conceive of public space in cities. By disrupting the traditional 5-day workweek and associated commute patterns, the pandemic has pushed us to innovate in the strategies we use to bring people back to our downtowns. This calls for a reimagining of our streets as public spaces rather than car arteries and diversifying our neighborhoods away from single-use Central Business Districts and residential suburbs.

Transit-Oriented Development in the Boston

Region: There has been extensive population growth along the Blue Line over the past decade (BPDA PLAN: East Boston, 2021), with a large development planned for Suffolk Downs. Additionally, the Legislature recently passed the "Multi-Family Zoning Requirement for MBTA Communities," which requires higher-density housing near Commuter Rail stations (Mass.gov, 2022). Improved connectivity of the central rapid transit network between the Red and Blue Lines will create significant agglomeration and accessibility improvements for these developments.

Market Pressure for Walkability: In the Boston region, there is pent-up demand for walkable neighborhoods – this may be one reason why Beacon Hill and the West End attract above-market rents (GWU Walk Up Wake Up Boston, 2015). While one priority is to introduce elements of walkability into car-centric suburbs, it is important to test radical new implementations in already highly walkable environments. Our goal is to ensure that this area achieves best-in-class walkability as it continues to develop.

Changing Mobility Technology: In the past several years, there have been significant developments in mobility technology such as ride hailing, electric vehicles, electric scooters and bikes, and app-based navigation tools. These have extreme impacts on how citizens interact with urban space, and our streetscape needs to adapt. We need to move away from personal gas-powered vehicles and start dedicating space for scooters and bikes, installing electric charging stations, and managing our curb space for safer pickups and drop-offs.

Local Investment Along Cambridge Street: There are several construction projects in progress and planned along Cambridge Street, including new Emergency and Oncology services at MGH and a redevelopment of the Charles Hurley office building by the City of Boston. These will both increase the need for access and foot traffic along the Cambridge Street corridor, making strong transport connections and pedestrian space even more essential.

Key Principles

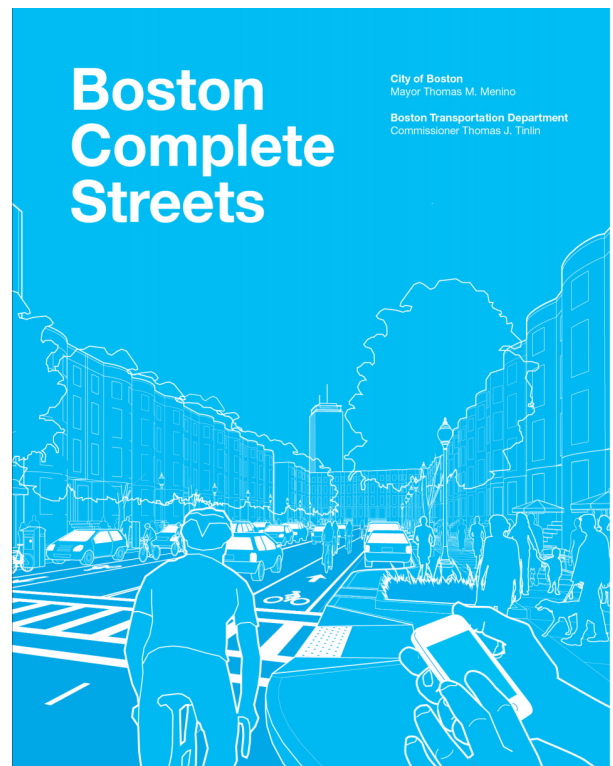
Based on the needs of the neighborhood and the region, we've developed some key principles that we want to focus on as we develop a safer and more accessible Cambridge Street. We have used these principles to guide our design proposal:

Encourage Accessibility and Walkability: Today, Cambridge Street is a car-oriented thoroughfare that de-prioritizes the needs of people who interact with the neighborhood on foot. Our design should remedy the issues that make this street difficult to navigate, such as poor pavement quality, unstable bricks, few seating areas, and sidewalk pinch points. We want to bring the walkability of Beacon Hill and the West End into the design of Cambridge Street.

Promote Safety for Cyclists, Pedestrians, and Transit Users: There are severe safety concerns with the current design of Cambridge Street that make the space very unfriendly to non-motorists. Our design should resolve pedestrian-car conflicts at Charles Circle, fix the abrupt termination of bike lanes on the Longfellow Bridge, and create a universally accessible landscape for pedestrians.

Balance Needs of Residents and Visitors: Cambridge Street is an essential resource for local residents as well as a hub for regional activity. Our goal is to create adequate public space and generate effective people flows to absorb the large number of visitors while maintaining a residential character. We will focus on high-volume transportation systems to connect the space with Greater Boston without disrupting the local character.

Integrate Urban Fabric Locally & Regionally: We want to transform Cambridge Street from a boundary between two neighborhoods into a shared space that brings them together. Additionally, we want to invest in forms of regional connectivity that do not compete with local use of the streets. Our goal is to make Cambridge Street a place to be, not just a place to pass through.



Much of our key principles are informed by the Boston Complete Streets guide. We are designing a Cambridge Street that will be a best-in-class example of these principles.

Design Proposal

We've consolidated our conditions analysis and key principles into a design for Cambridge Street that reshapes the allotment of public space to extend the safe, peaceful, and community-oriented conditions of the surrounding neighborhoods into Cambridge Street. The primary focus of our design is the transformation of Cambridge Street from a car-centric thoroughfare into a linear park culminating in a vibrant pedestrian plaza at Charles Circle. Inspired by famous promenades such as Rambla de Catalunya

in Barcelona or Commonwealth Avenue right here in Boston, we want create meaningful public space along Cambridge Street to bring residents and visitors out into the streets of a walkable community. Underneath this linear park we plan to complete the Red-Blue connector to finally bring together the Red and Blue Lines to enhance regional connectivity and increase access to the neighborhood without disruptive aboveground travel.



The Commonwealth Avenue Mall in Boston's Back Bay. This serene linear park is a central inspiration for the Cambridge Street redesign.

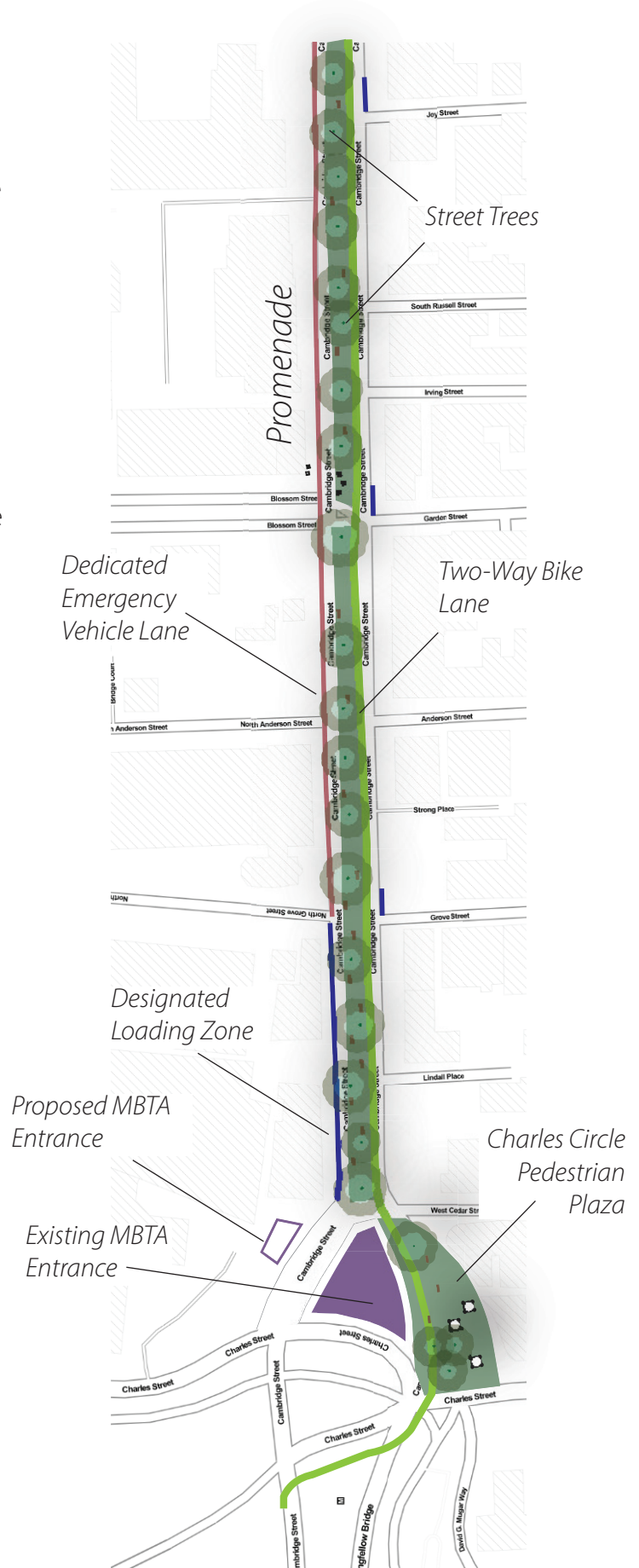
Rambla de Catalunya in Barcelona. The Cambridge Street redesign intends to create a similarly active pedestrian environment.



This design delivers on all key principles developed by our analysis. It encourages accessibility and walkability by drastically expanding the amount of pedestrian space and adding a pleasant park-like environment with plenty of seating. It promotes safety for non-motorists by narrowing the roadway to reduce car speeds, increasing separation between cars and pedestrians, and deprioritizing traffic flow at Charles Circle. It balances the needs of residents and visitors by encouraging walking over driving and shifting transportation flows to an underground extended Blue Line that connects to the Red Line at Charles/ MGH. Finally, it integrates the urban fabric by creating a park-like meeting place between Beacon Hill and the West End that facilitates connection, programming, and community. There are several key features of the plan that we would like to highlight:

Central Promenade: Our design takes advantage of the 100ft. distance between building frontage on Cambridge Street to develop a 30- 40ft. wide linear park in the center of the right-of-way. This will have a variety of features that drastically improve the quality of life along the Cambridge Street corridor:

- Space for cafes, markets, and public programming
- Adequate pedestrian travel space
- Street trees to provide shade and privacy
- Benches for resting and enjoying the environment
- Reduction of car travel to one lane in each direction
- Maintenance of street parking along South (Beacon Hill) side of Cambridge Street for small business access



Two-Way Bike Lane: One of the largest gaps in the current design of Cambridge Street is the inadequate bike infrastructure, especially considering the protected bike lanes on Longfellow Bridge that end at Charles River Circle. We are dedicating space on the promenade for a two-way bike lane on Cambridge Street that is grade separated from car traffic and isolated from pedestrians by a tree alley. While there are still some details to consider about the street crossings at Charles Circle, this is a large improvement for cyclists along the route.

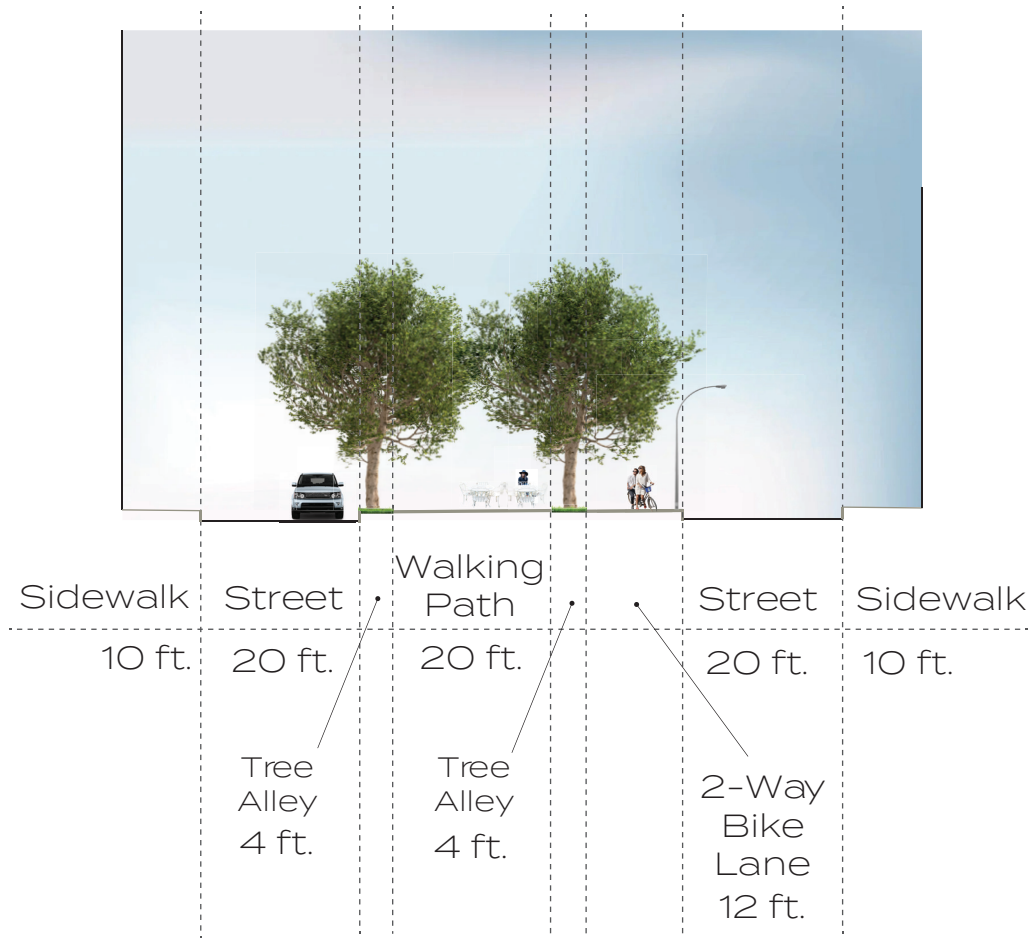
Charles Circle Pedestrian Plaza: By routing all traffic around a single side of the Charles/MGH station, our design unlocks over 9,000 square feet of pedestrian space and improved connectivity between the train station and Beacon Hill. The proximity of this plaza to MGH and the tourist destinations in Beacon Hill ensure that this will be a well-used community space. The complete separation of the park from car traffic reduces noise and improves the quality of the space. Additionally, it will provide an important anchor for the new promenade and an important stepping stone between Cambridge Street and the Esplanade.

Priority Lane for Emergency Vehicles: A common concern with street redesign proposals is whether they will negatively impact emergency vehicles in a neighborhood. This consideration is particularly important on Cambridge Street due to the proximity of MGH and the high-volume hospital-related traffic with ambulances and shuttles. In order to mitigate this concern, we have created a dedicated lane for emergency vehicles on the westbound side of the street to prevent them from becoming stuck in traffic.

Designated Loading Areas: With the rise of ride-hailing and expansion of delivery services in the

last several years, stopped vehicles have become a large source of traffic in our cities. To accommodate these services in the street design, we have reallocated short term parking for designated loading/unloading areas to keep trucks and vehicles from standing in the travel lane.

Red-Blue Connector: Although not visible on the street level, connecting the Red and Blue Lines is an essential part of our Cambridge Street redesign. We will only be able to make Cambridge Street more accessible with less car traffic if we continue to invest in transit connectivity to efficiently bring people in from around the Boston region. Furthermore, a complete overhaul of the street will give us an opportunity to construct the tunnel using the cut-and-cover technique during the redesign. Therefore, Bostonians will receive an improved streetscape and new transit infrastructure as part of this project.



Representative section of the redesigned Cambridge Street. By replacing the extra street lanes with trees, pedestrian paths, and a bike lane, we can create a vibrant community space for all people in Beacon Hill and the West End.



Enhanced plan for the Charles Circle pedestrian plaza. This space reclaims more than 9,000 square feet of roadway for walking, biking, sitting, and dining.

Policy & Planning Context

Since this project includes transit, street network changes, and public space management, this project will require interagency and city-state coordination. However, with a democratic governor and a democratic Boston mayor that is actively dedicated to improving street safety, the political stars have aligned for redesigning Cambridge Street. Here's our recommendations for project management:

Assign Long Term Project Managers at City and State Level: A project of this scale and scope needs committed project management at the city and state level. We recommend that both governments assign strong project managers who can devote time to this project over the course of several years.

City Ownership of Street Level Construction: The City of Boston is responsible for management of the public right-of-way, and therefore should be the final decision maker on any street design changes that do not directly interact with transit infrastructure.

MBTA Ownership of Transit Project: The MBTA is responsible for the provision of rapid transit in the Greater Boston region, and therefore should be the final decision maker on transit infrastructure. There are some cases where transit infrastructure will interact with the street (entrances & exits, ventilation, etc.). We recommend that the MBTA be given decision-making priority in these cases.

Use Construction to Socialize Reduced Vehicle Travel: Vehicle travel will need to be reduced on

Cambridge Street to accommodate construction. We recommend maintaining one lane of vehicle travel in each direction as much as possible during construction to simulate vehicular capacity in the final street design. This will help local drivers get used to the effects of reducing car lanes.

Establish Conservancy for Park Management: The promenade and plaza will only be valuable public space if they are safe, well-maintained, and clean. We recommend establishing a conservancy like the Southwest Corridor in the South End or the Rose Kennedy Greenway downtown to empower local residents to develop and maintain the public space on the site.

Dedicate State Funding for Street Updates: The state allocates Chapter 90 funds to keep sidewalks in a "state of good repair" (Go Boston 2030, 2017), and some of these funds should be dedicated to this project since a primary goal is to repair the pedestrian spaces on Cambridge Street. Additionally, the city should pursue state funding allocated under the "Complete Streets" program to finance the development of the bike lane, promenade, and planting of street trees.

Acquire Federal Funding for Red-Blue Connector: The Red-Blue Connector will have a higher price tag than the street redesign, and will likely require federal funding. We recommend that Boston apply to the federal government's "Mega Grant Program" passed in the 2021 Infrastructure Bill to acquire adequate funding to connect the Red and Blue Lines.

Next Steps

- 1. Present Plan to Neighborhood and Institutional Stakeholders**
- 2. Prioritize the Red-Blue Connector at the State Level**
- 3. Coordinate Street Work with City of Boston**

A safe, pedestrian-oriented Cambridge Street can create a world-class public resource for the City of Boston. Let's get started today!

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