Re-imagining Broadway

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Executive Summary

EXECUTIVE SUMMARY

Why Re-imagine Broadway?

Re-imagining Broadway is a planning effort led by the City of Chelsea to develop strategies to improve access, safety, and mobility for all users of Downtown Chelsea given many recent and upcoming changes in Chelsea's transportation landscape. Recent transportation efforts undertaken by the City, including the expansion of the Silver Line Gateway, new bike lanes to be installed on Broadway east of City Hall, the reopening of the Washington Street Bridge, circulation changes around Arlington and 6th Streets, and more have set the stage for this effort. The City also recently hired a Downtown Coordinator to help the community further focus on improving the greater Broadway area for all users. Re-imagining Broadway is not an independent effort; the recommendations presented are one piece of the larger ongoing improvements being made downtown and throughout Chelsea.

This project is more than a traffic and circulation analysis and redesign for Downtown Chelsea; it also considers how that redesign will support businesses, residents, shoppers, workers, students, and all other travelers. The proposed transportation improvements are anticipated to make the Broadway area a more livable, safe, and vibrant downtown center.

Process Overview

The Re-imagining Broadway process gathered traffic, parking, and safety information to understand what existing conditions are like for those that travel around Downtown Chelsea. In addition to collecting and synthesizing this data, the study incorporated an extensive and varied public engagement effort that included open houses, stakeholder meetings, presentations, and an online survey. The outreach let Chelsea residents, visitors, employees, and business owners develop goals for Downtown Chelsea and guide the City's transportation policies and investments. With this input, the project team developed different options for broad-based circulation changes for all means of getting around Chelsea, presented them to the public, and reincorporated feedback along the way to produce two refined concepts for a Re-imagined Broadway. A diagram of the project process overview can be found below.

The recommendations presented are tailored to respond to the multi-faceted concerns of the business community, residents, and commuters to support Chelsea's growth and future development. This document and its design concepts will serve as a blueprint of the community process and vision that should be carried forward through future phases of design developments.

EXECUTIVE SUMMARY

Key Findings: Needs and Opportunities

As in many densely populated urban areas in the Boston region, Chelsea faces persistent traffic, transit, and pedestrian circulation challenges. Crosstown through-traffic and circuitous vehicle circulation degrade the pedestrian and cycling environment and cause congestion for key transit routes to job centers for residents and employees. Broadway is where the Chelsea community comes together, but its design, look, function, and operation have not kept pace with the rest of the city's evolution.

Because residents and the City hope to keep Downtown Chelsea a neighborhood focused on local activity and local businesses, creating spaces to gather and improving the walking and retail atmosphere in Downtown Chelsea is essential. Retaining as much on-street parking as possible is also important because Downtown Chelsea is an active retail and residential neighborhood with a parking supply in high demand throughout the day.

- Establish a circulation pattern that works for cars, buses, pedestrians, transit riders, bicyclists, and emergency services.
- Enhance how public space is used and accessed downtown
- Support existing businesses and encourage new growth
- Beautify the area and create a consistent, vibrant look
- Improve overall safety for all users

The project team developed two design concepts around these guiding principles echoed by the goals determined through public feedback during the outreach process. The designs fit with the ongoing Parking and Loading Zone Management Process and with future transportation and public realm investments to be made by the City.

Concept Recommendations Overview

Following the guiding principles established through the public process, the project team developed two full design concepts, reimagining improvements within both a one-way and a two-way context. The designs fit with future transportation and public realm investments to be made by the City and with the ongoing Parking and Loading Zone Management Process.

At its core, Re-imagining Broadway and its conceptual designs:

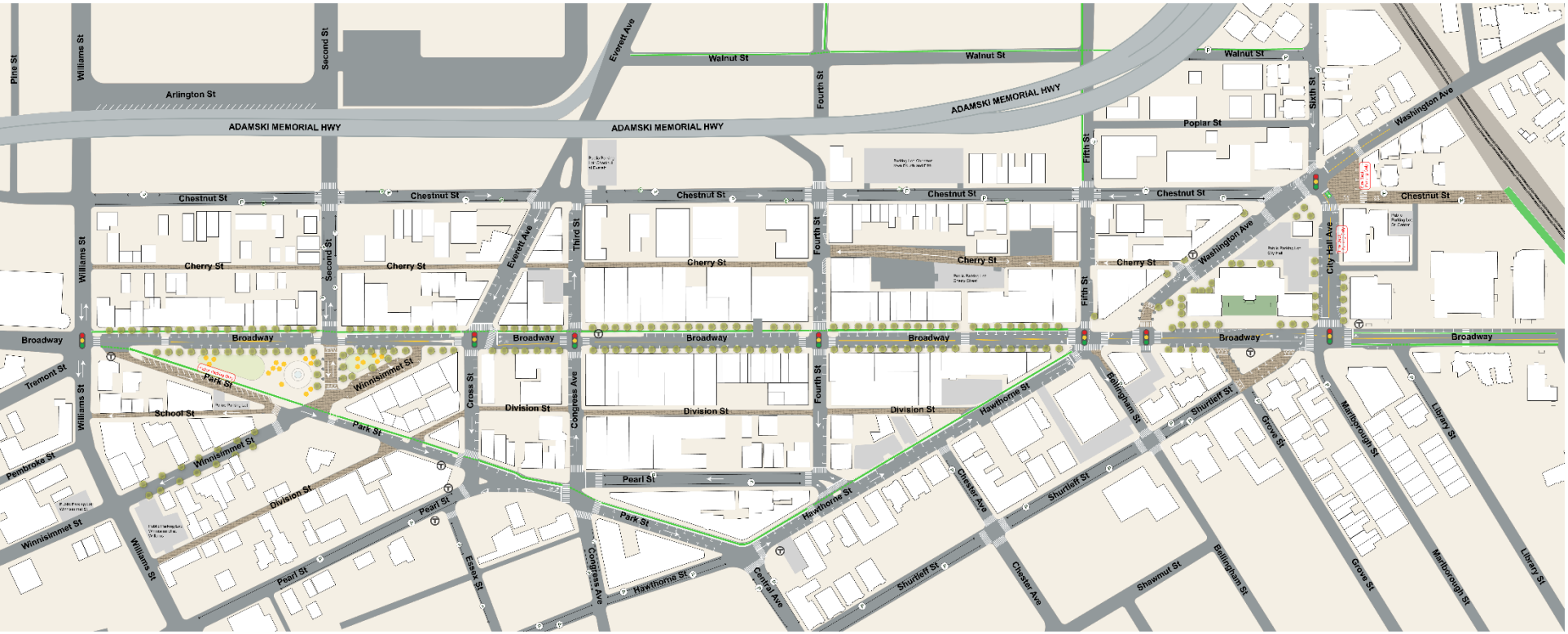
- Improve public space in the squares
- Make space for added streetscape elements in the sidewalk zone
- Support better transit operations
- New signals and two-way City Hall Avenue improve traffic flow and bus service
- Expands network of protected bicycle lanes
- Provides concepts to improve alley side streets
- Increased pedestrian safety throughout and enhanced placemaking at Bellingham Square, Fay Square, and Chelsea Square

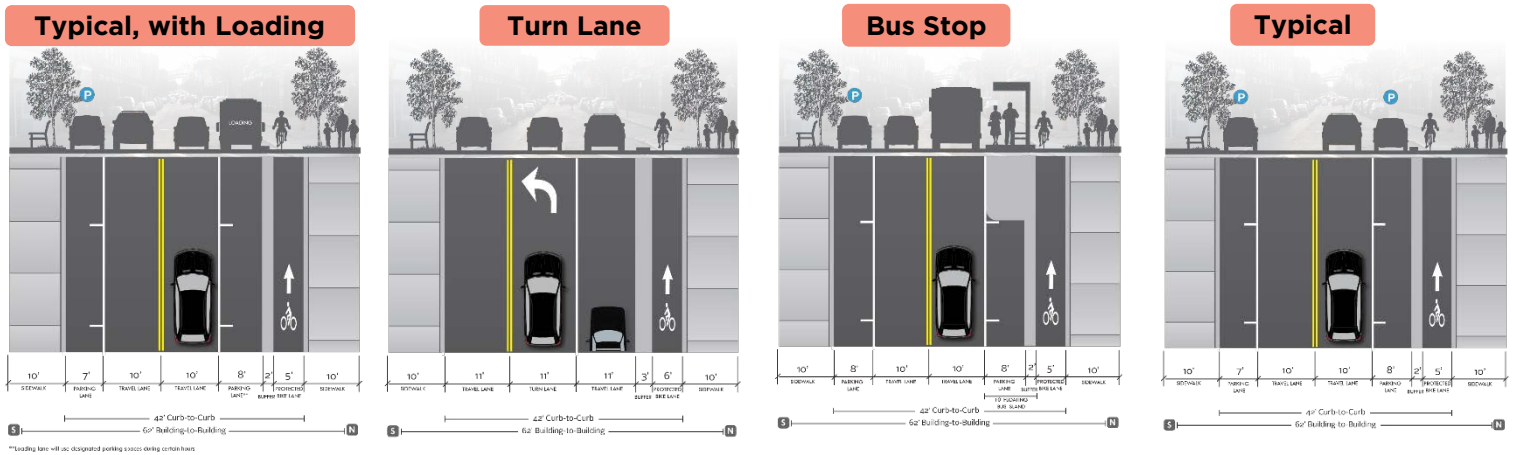
Shortened Crossings

Better Lighting

EXECUTIVE SUMMARY

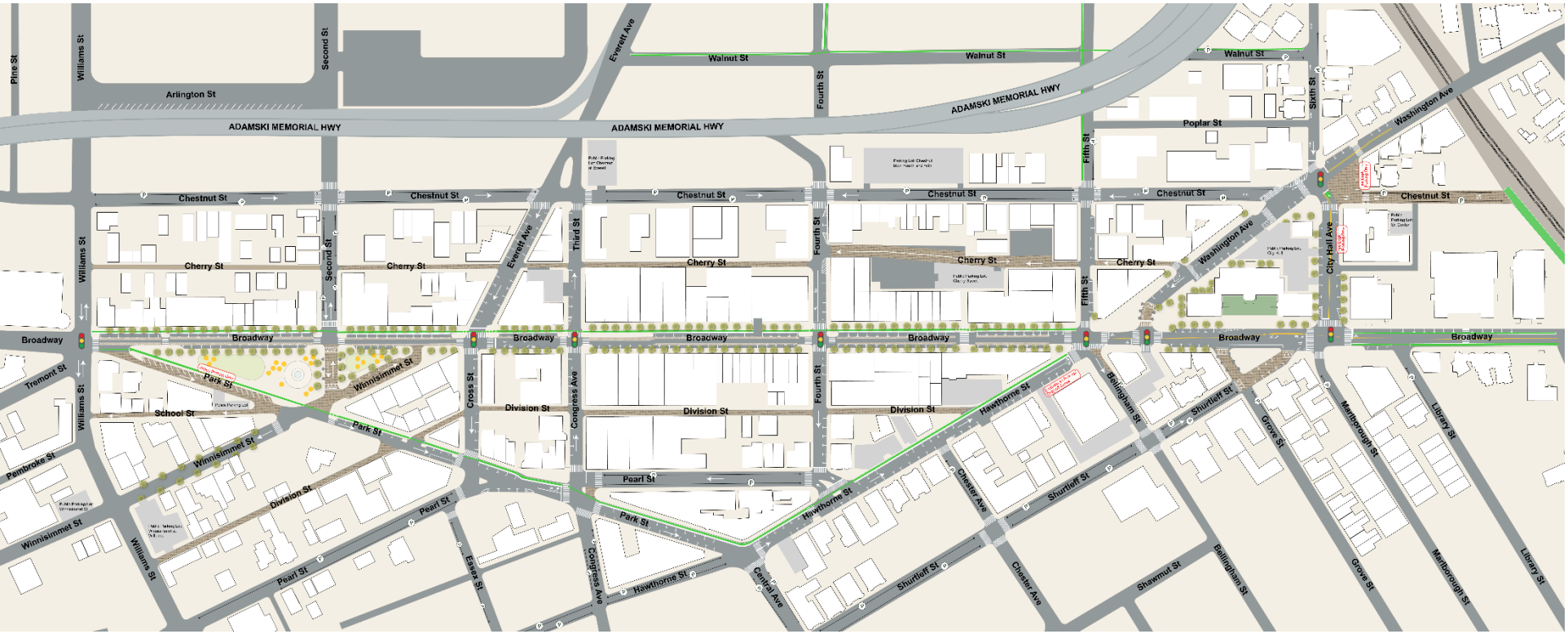
Two-Way Broadway Design Concept



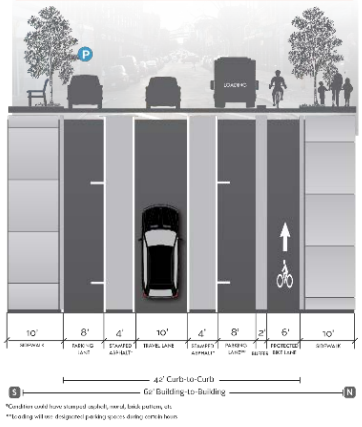


EXECUTIVE SUMMARY

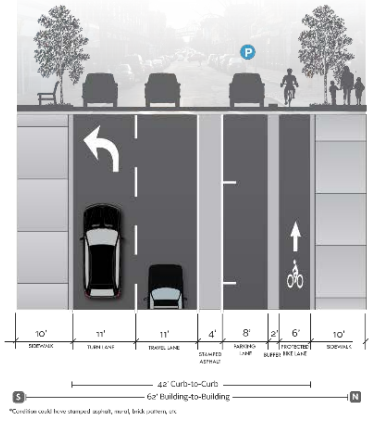
One-Way Broadway Design Concept



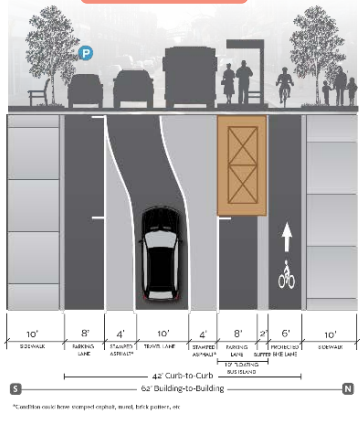
Typical, with Loading



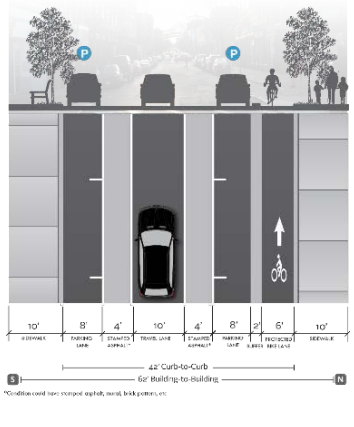
Turn Lane



Bus Stop



Typical



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Overview

Study Purpose

Building on Existing Momentum

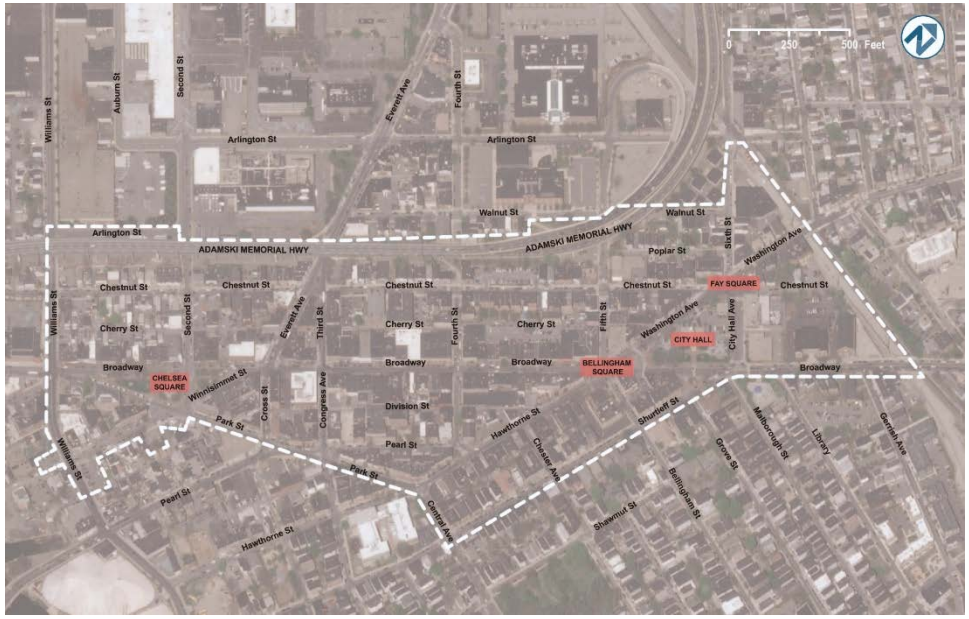
The stakes, vitality, and potential for improvement in downtown Chelsea are high. While always a dynamic gateway to the Boston region, Chelsea's location, diversity, affordability and character are now being widely recognized for the advantages they always have been. Development abounds. The population is growing. Job growth outpaces the statewide average. The current challenge is capturing this energy and harnessing it to benefit current residents and establish Broadway as the center for future generations in our community.

Broadway is the place where Chelsea comes together, but its design, look, function, and operation have not kept pace with the rest of Chelsea's evolution. As in many densely populated urban areas in the Boston region, Chelsea faces persistent traffic, transit, and pedestrian circulation challenges. Now is the time to make the needed investments, so Broadway can continue to serve all users as the heart of Chelsea.

The Re-imagining Broadway study comes after a wave of thoughtful and concerted effort by the City and the Commonwealth to invest in making Downtown Chelsea a more attractive and more accessible place. The City also recently hired a Downtown Coordinator to help the community further focus on improving the greater Broadway area for all users.

This project is more than a traffic and circulation analysis for Chelsea. The plan will focus not only on a redesign of downtown circulation, but also how that redesign will support businesses, residents, shoppers, workers, students, and all other travelers. The proposed holistic transportation improvements are anticipated to make the Broadway corridor a more livable, safe, and vibrant downtown center.

Re-Imagining Broadway Study Area for the Circulation and Parking Analysis in Downtown Chelsea

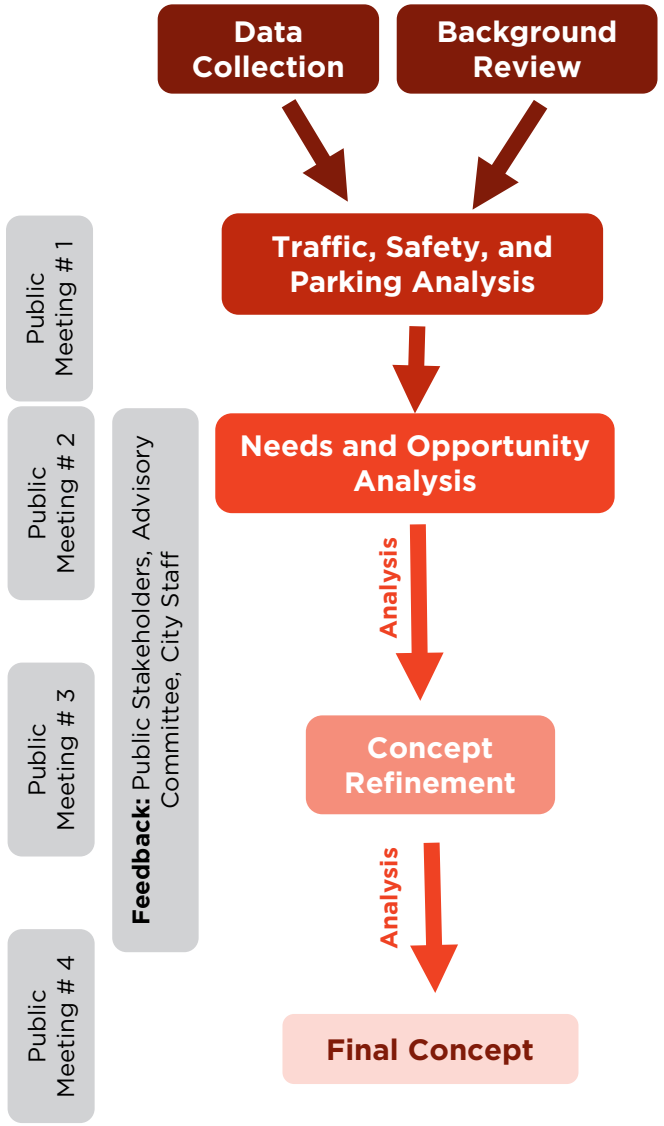


Study Process

Over the course of more than a year, the Re-imagining Broadway process gathered traffic, parking, and safety data to understand what existing conditions are like for those that travel around Downtown Chelsea. By collecting and synthesizing existing data, the study team could identify needs and gaps in Downtown Chelsea's transportation system.

An extensive and varied public engagement effort included open houses, stakeholder meetings, presentations, and an online survey to let Chelsea residents, visitors, employees, and business owners guide the City's transportation policies and investments. With this input, the project team studied different options for broad-based circulation changes for all means of getting around Chelsea. These included options and alternatives for improving the walking and retail environment, upgrading facilities for safe biking, converting one-way streets to two-way, evaluating bus routing through downtown, analyzing new traffic signals for vehicle travel, and redesigning intersection configurations. The study also examined current parking activities and patterns through the collection of on-the-ground parking data, field observations, input from public workshops, stakeholder meetings, and an online survey.

Building upon these analyses, the strategies are tailored to respond to the multi-faceted concerns of the business community, residents, and commuters to support Chelsea's growth and future development. This document and its design concepts will serve as a blueprint of the community process and vision that should be carried forward through future phases of design developments.



Re-Imagining Broadway Goals

At its core, Re-imagining Broadway sought to plan and design downtown streets, public spaces, and intersections in a holistic manner for all users, including bicyclists, pedestrians, motorists, and transit riders. The project team developed the design concepts around six guiding principles, echoed by goals determined through public feedback during the outreach process. The conceptual designs focused on improving public space in the squares, on supporting non-motorized transportation, and on improving safety.

Guiding Principles

Local streets are where daily social interactions take place. They are places to meet, for kids to play, to attend events, and to eat and shop. The most important principle is to balance the needs and safety of everyone that comes to and through Downtown Chelsea. Having Downtown Chelsea be walkable, bus-friendly, and accommodate bicyclists is therefore a top priority.

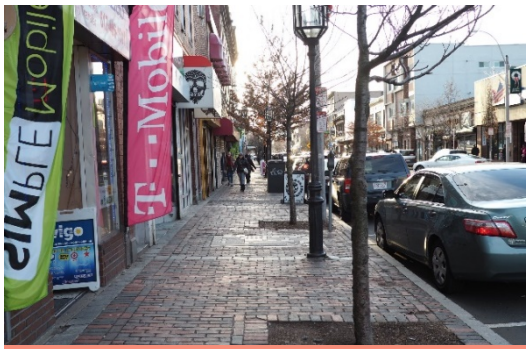
Because residents and the City hope to keep Downtown Chelsea a neighborhood focused on local activity and local businesses, creating spaces to gather and improving the walking and retail atmosphere in Downtown Chelsea is essential.

Goals

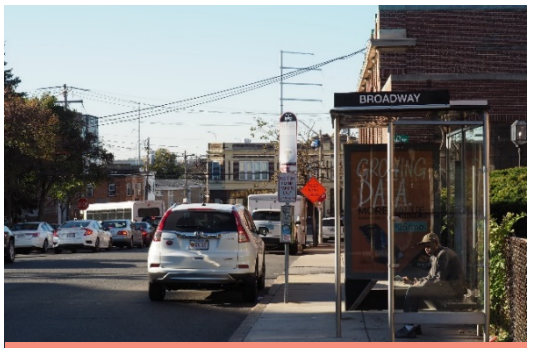
- Establish a circulation pattern that works for cars, buses, pedestrians, transit riders, and bicyclists
- Enhance how public space is used and accessed downtown
- Support existing businesses and encourage new growth
- Beautify the area and create a consistent, vibrant look
- Improve overall safety for all users

Balance Needs of All Users

Improve Public Open Space



Support Retail



Connect People to Transit

Properly Manage Parking

Improve Walking Atmosphere

Public Outreach

Public and Stakeholder Outreach Summary

Throughout the Re-Imagining Broadway process, the project team was committed to community engagement and public feedback. Steps were taken to facilitate communication between the project team and the public in both Spanish and English throughout the process, using translators at community forums, at public meetings, and at conversations with business owners and shoppers. Online surveys and hands-on activities at public meetings were translated as well.

Outreach to different segments of the community – residents, businesses, shoppers, city officials, civic leaders, and property owners – helped the project team understand the many different perspectives on transportation goals for Downtown Chelsea and desirable cross-section and intersection design choices. Through workshop feedback, the project team members gathered extensive and essential data about how the Chelsea community wants Broadway to look and function.

Over the course of more than a year, the plan involved four public meetings with over 200 community members in attendance to view presentations and participate at feedback stations. Hundreds of participants subscribed to receive updates on the project listserv and more than 425 individuals completed an in-person or online survey on their parking experience in Downtown Chelsea.

The City's Steering Committee offered invaluable guidance to the preparation of design concepts by providing feedback at key milestones in the process. Meetings with the Police Department and Fire Department helped guide the designs to protect emergency response access while increasing public space and enhancing the pedestrian environment. Meetings with the MBTA helped the team understand current and future operational considerations of bus concepts.

Community Workshops

Re-imagining Broadway has been guided by a robust community engagement effort that solicits feedback from a wide variety of stakeholders. This process was framed by four major public workshops. Each involved presentations and an opportunity for attendees to give comments on proposed design elements and data conclusions.

First Public Meeting

January 12, 2017

A visioning process kicked off the study. Before any rigorous or technical traffic analysis, the Visioning Workshop sessions identified the community's priority values, geographic areas of concern with respect to all modes, and issues and opportunities that were used to shape the scope of the rest of the project. Participants voted on which public amenities, which streetscape, which Broadway cross-section, and which vision statement they liked best or most wanted to see in Downtown Chelsea.

The project team asked questions to inform the guiding principles for the concept designs, including:

- *Where do you frequently go on Broadway?*
- *What are common day-to-day issues you see on the streets around Broadway?*
- *What do you want Broadway to become?*
- *What do you want to see on Broadway?*
- *Do you have ideas to create spaces for people to hang out?*

Second Public Meeting

April 5, 2017

This workshop presented participants with potential design options that could possibly be considered in Downtown Chelsea to help achieve the visions set out in the initial public meeting. Meeting attendees shared their thoughts on multiple options for intersection configurations in Bellingham Square, Fay Square, and Chelsea Square as well as on locations for bus hubs.

Third Public Meeting

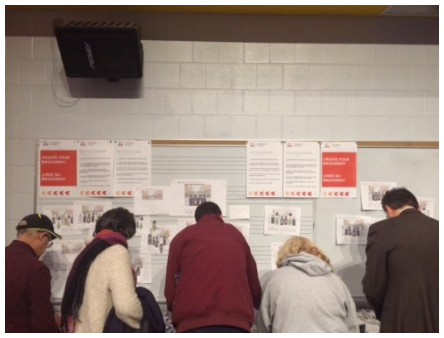
July 17, 2017

The third workshop summarized the existing conditions and findings from the downtown parking inventory and utilization study. The workshop also introduced preliminary design concepts for circulation in Downtown Chelsea.

Fourth Public Meeting

April 11, 2018

The fourth meeting presented the final concept designs for circulation and parking in Downtown Chelsea, including both a one-way and two-way Broadway option. The conceptual designs focus on balancing all transportation modes by redesigning the squares, incorporating facilities for bicycles, and improving pedestrian safety. Meeting attendees offered their approval and criticisms of design elements that will be addressed in forthcoming engineering.



Project Website

The Re-imagining Broadway project website engaged the public in a variety of ways. The website, *Re-imaginingbroadway.net*, detailed the project's purpose, offered options on how people could get involved, and published documents related to the project throughout the process.

Presented in both English and Spanish, regular project updates to residents, merchants, employees, and visitors of Downtown Chelsea included:

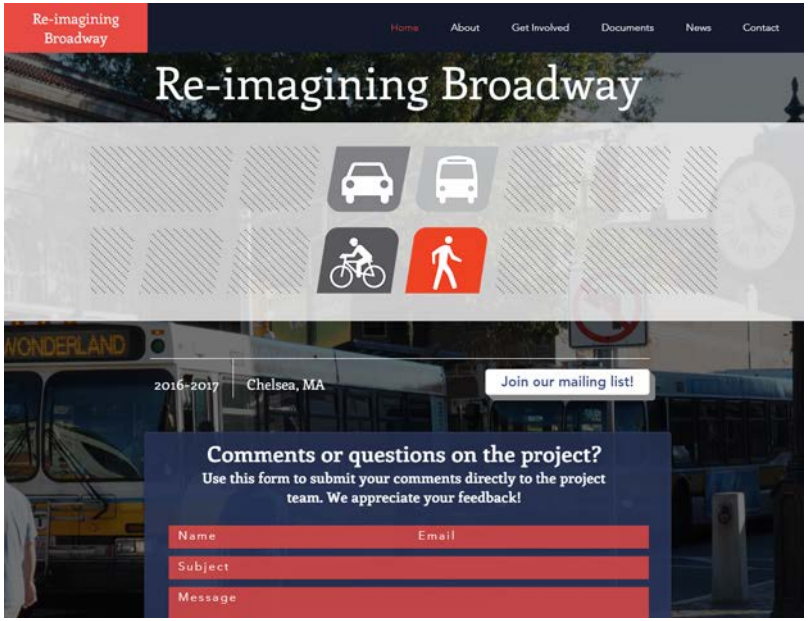
- Public meeting announcements
- All previous public meeting summaries, presentations, and display boards
- Promotion of an online, bilingual parking survey
- News articles related to Downtown Chelsea happenings

The website also offered opportunities to the public to get involved in the planning process:

- Link to sign-up for project email list
- Comment submission form for public comments about proposed designs and questions for the project team
- Request for feedback on specific design ideas presented at the April 5, 2017 community workshop using Qualtrics form

Public comments from the website can be found in the Appendix.

Screenshots from Re-imaginingbroadway.net



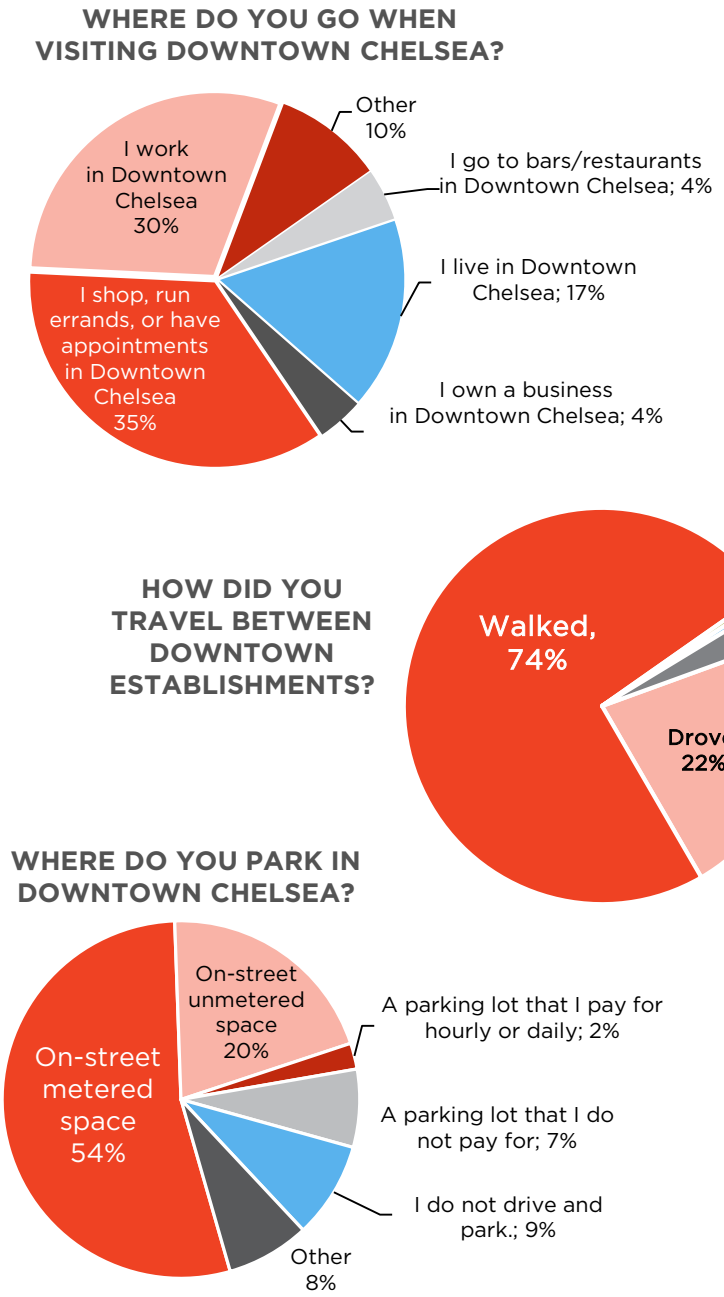
Parking Survey

An online bilingual parking survey solicited input from residents, customers, visitors, business owners, and employees throughout Downtown Chelsea regarding their parking activities, experiences, and preferences. A link to the online survey was posted on the project website, advertised on Re-imagining Broadway public meeting notices, and posted on neighborhood listservs. The City and project team also distributed survey flyers to downtown businesses on two occasions during the first half of 2017. The survey was available for several months and received 421 responses, roughly 400 of which were completed in English.

Key Findings

- Two thirds of respondents shop, run errands in, or work downtown. Less than a fifth were residents of downtown.
- Slightly more than a quarter of respondents could find parking on-site or on the same block. Another quarter found parking only one block away, typically taking only 3-5 minutes to find a space.
- More than half of respondents prefer to park at on-street metered spaces.
- Almost 60% of respondents said they visited more than one establishment during their last visit to Downtown Chelsea. Overwhelmingly, people walk between establishments when visiting multiple places in Downtown Chelsea.
- Safety is a concern for people while visiting Downtown Chelsea. More than half of respondents reported avoiding parking or walking in certain areas due to safety concerns. Frequently cited factors that limit the willingness to walk in Downtown Chelsea include:
  - Criminal and drug activity in the area
  - Lack of lighting at night
  - Sidewalk conditions
  - Difficulty crossing the street
- Most people believed that the clarity of parking signage and striping could be improved and enforcement is perceived as overly punitive.

Re-imagining Broadway Selected Parking Survey Results



Public Input Summary

Goals

- Broadway should be walkable, bus-friendly, and accommodate people biking.
- Broadway should support vibrant local businesses.

Circulation

- Residents, business owners, and employees are open to two-way circulation on Broadway to create better public space and safer conditions with expanded plazas and curb extensions.
    - Also open to eliminating a travel lane in a one-way configuration if double-parking enforcement is improved.
- Traffic congestion in the squares is a result of confusing intersections as much as it is the volume of cars. Circuitous routes in and around downtown are common in a car, on transit, or on a bike.

Safety

- Bellingham Square and Fay Square pedestrian safety is an important issue, especially as school children cross Broadway and Washington to reach the Williams School. Efficient and logical relocation of crosswalks in Bellingham Square was requested.
- Slowing down speeding vehicles on Broadway would make walking feel safer. Participants accepted additional traffic signals to manage travel flows.

Urban Design

- Many participants mentioned a strong desire for more places to gather, including more outdoor seating, larger plazas in the squares, and business-sponsored parklets.
- Many participants supported enhancements to the streetscape, such as additional street trees and plantings, more lighting, and the creation of shared streets on Division Street and Cherry Street.

Parking

- Every on-street parking space is important to preserve.
- Safety while parking and walking in Downtown Chelsea is a concern for residents and visitors, especially after dark.
    - Dim lighting and poor sightlines make parking at the Luther Place Lot uninviting.
- Better directions and signage to advertise what parking is available is needed.

Key Issues

Broadway Cross-Section

The elements that make up city streets, from sidewalks to travel lanes to transit stops, all vie for space within a limited right of way. Broadway today is 62 feet wide from building to building, with 42 feet of that right of way being curb-to-curb pavement. Two 8-foot lanes are dedicated to parallel parking at each curb. The remaining 26 feet of pavement is split into two travel lanes heading in the same southbound direction.

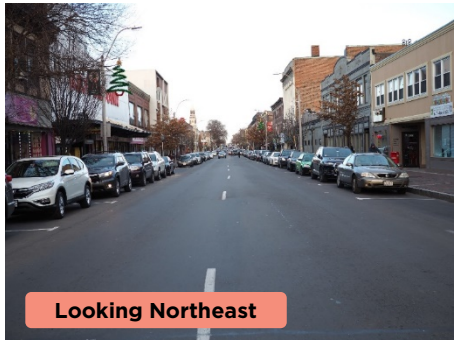
This existing cross-section encourages higher speed vehicular travel. The U.S. Interstate Highway System standard is 12-foot lanes and Broadway is currently comprised of 13-foot travel lanes. Lower volume local urban roads like Broadway in Chelsea can tolerate narrower travel lanes that encourage vehicles to travel at safer speeds. Broadway is uncontrolled by stop signs or traffic signals along its length between Bellingham Square and Williams Street, enabling through vehicles to increase travel speeds.

Broadway's wide lanes also encourage the double parking that disrupts traffic flow and causes drivers to slalom their way down this main street. Because Broadway has two one-way lanes, drivers can easily double park without fully blocking traffic, which leads to dangerous weaving maneuvers around idling cars.

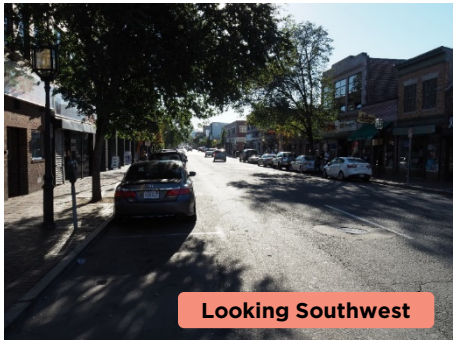
Conflicts arise the length of Broadway due to double-parking of delivery trucks and customers, but especially at the intersection of Broadway and Washington at Bellingham Square, where there is also heavy queuing of buses and significant numbers of pedestrians. The result is a street that can be uninviting as a retail destination and as a residential neighborhood.

Broadway Double-Parking

Broadway Double-Parking

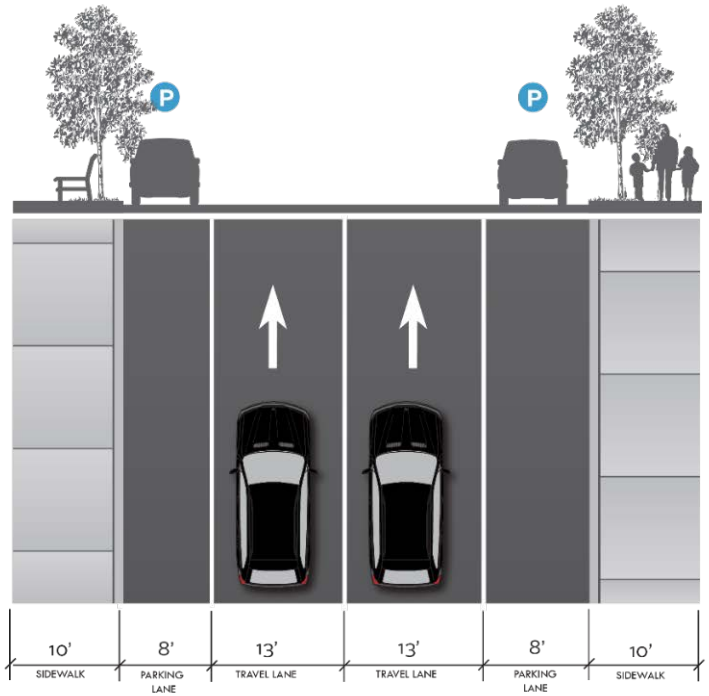


Looking Northeast



Looking Southwest

Current cross-section of Broadway between Bellingham Square and Williams Street



Traffic Circulation

As in many densely-populated urban areas in the region, Downtown Chelsea faces persistent traffic and pedestrian circulation challenges. The historic pattern of streets and intersections in Downtown Chelsea, laid out in the 19th century, leads to conflict and uncertainty for both drivers and pedestrians.

Regional traffic can overload local streets during peak periods when drivers cut through town to reach the McArdle Bridge, the Chelsea Street Bridge, or the Tobin Bridge. Heavy regional traffic flows occur on roads shows in the map below.

Broadway carries regional vehicular traffic cutting through the city at high speeds at the expense of its local users and those wishing to cross Broadway on side streets. Vehicles traveling through along Broadway currently experience good levels of service with minimal delays, as they are not required to slow or stop for several blocks. Drivers trying to cross Broadway face delays that cascade throughout Downtown Chelsea, especially near Everett Avenue and 3rd and 4th Streets. The side street approaches, with vehicles attempting to cross Broadway or perform a turning movement, experience degraded levels of service and long delays. This translates into long queue lengths and driver frustration.

One-way streets also complicate the ability for people to get to local destinations; potential patrons have to return back on circuitous routes. Drivers, transit buses, and cyclists must take circuitous paths to reach their destinations downtown. Community meeting attendees noted the roundabout routes, in particular circulating around City Hall from Hawthorne Street via Bellingham Square and Fay Square to reach points along Broadway.

People in vehicles, on transit, on bikes, and those walking on the sidewalks all cross paths and/or engage in turning movements at intersections. Despite being a relatively small portion of any roadway system, intersections see a high proportion of total crashes, fatalities, and serious injuries. Frustrated and impatient drivers tend to accept smaller gaps in traffic to perform a turning movement, increasing the potential for collisions and conflicts with pedestrians. The following page shows the intersection level of service scores in Downtown Chelsea today.

Primary Crosstown Traffic Circulation Patterns in Downtown Chelsea


Third and Broadway

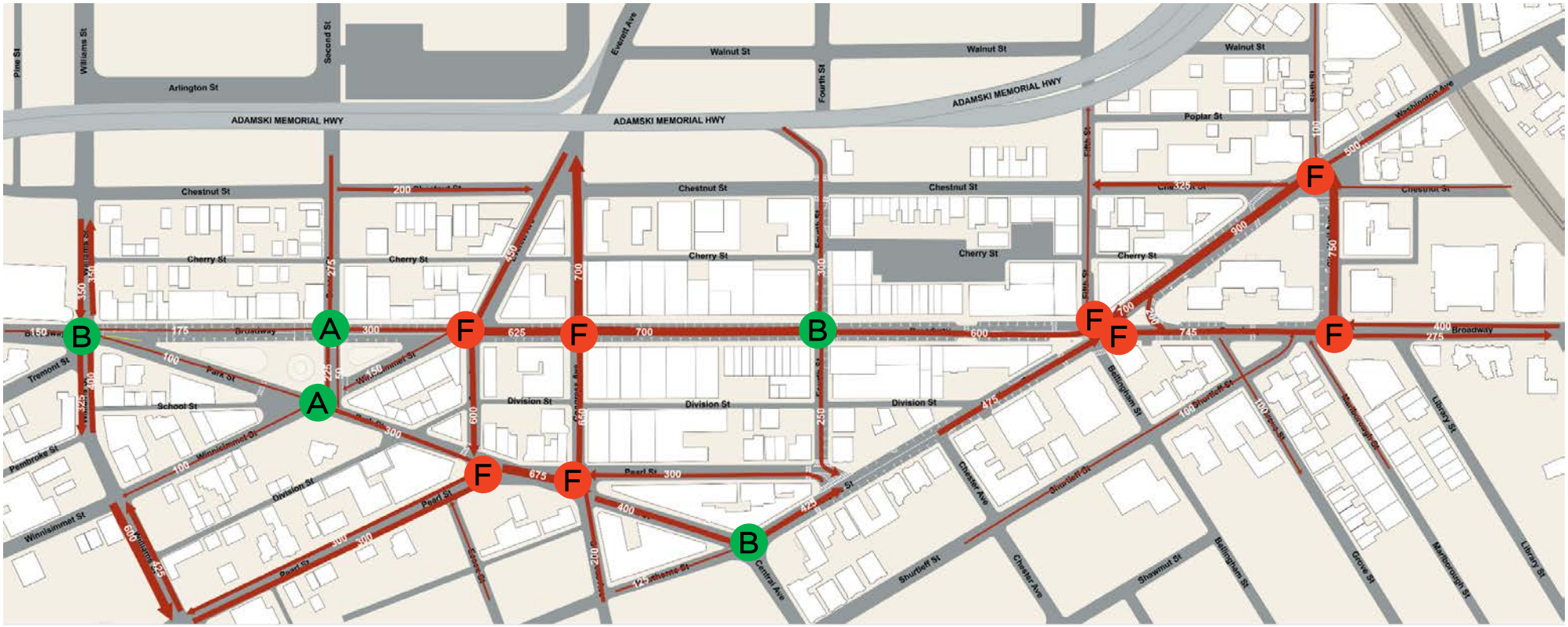

Third and Broadway


Park and Pearl


Park and Pearl

Traffic Circulation

Existing Morning Peak Hour Traffic Volumes in Downtown Chelsea and Associated Intersection Level of Service



Public Space and Sidewalk Atmosphere

Well-designed public space can provide active gathering places for the community and help to stimulate economic activity. Good public space and planning can help to provide opportunities for entrepreneurs, access to public services, new social services and institutions in a walkable and bikeable framework.

Broadway benefits from a strong diversity of shops and restaurants which support an active and varied street life along the corridor. The sidewalks along Broadway have positive elements such as street trees and pedestrian-scale streetlights. However, an inconsistency in tree canopy often leaves the pedestrian exposed to the street, diminishing the quality of a walkable atmosphere. Furthermore, the pedestrian right-of-way is often interrupted by the congestion of bus stop shelters at the back of the sidewalk.

In addition, the larger public spaces are disconnected from the more vibrant sidewalk public life due to specific design conditions. In Bellingham Square, the alignment of vehicle travel lanes has carved the public space into three separate points protruding into or surrounded by traffic. Disconnected from the retail and other destinations along Broadway, these open spaces become places for long-term loitering rather than the active flow of daily uses.

Chelsea Square provides a generous open space, but the design is oriented at aesthetics over usefulness. Grassy areas are bordered by fences and rows of hedges, which suggest that the space is more for admiring than inhabiting--indeed, for large portions of Chelsea Square, the space available for people to inhabit is little more than a standard sidewalk.

Both squares lack a hierarchy of uses, catering neither to open zones for programmed gatherings nor sheltered moments of urban escape. Furthermore, accessing these spaces requires long street crossings, which are perceived as out of the way, leading pedestrians to jaywalk at different points to get across Broadway, rather than passing through the open spaces and being invited to linger.

Sidewalk Obstructions on Broadway


Chelsea Square Design Limits Interaction with the Open Space

Walking and Biking Safety

Improved connectivity for walking and biking can foster small business development, improve property values, and make the city more livable and friendlier. Convenient active transportation provides health benefits to walkers and bicyclists, and creates environmental benefits for the community. Furthermore, better walking connections are important for all people who drive and take transit to their destinations, as they must get to and from their destinations by foot.

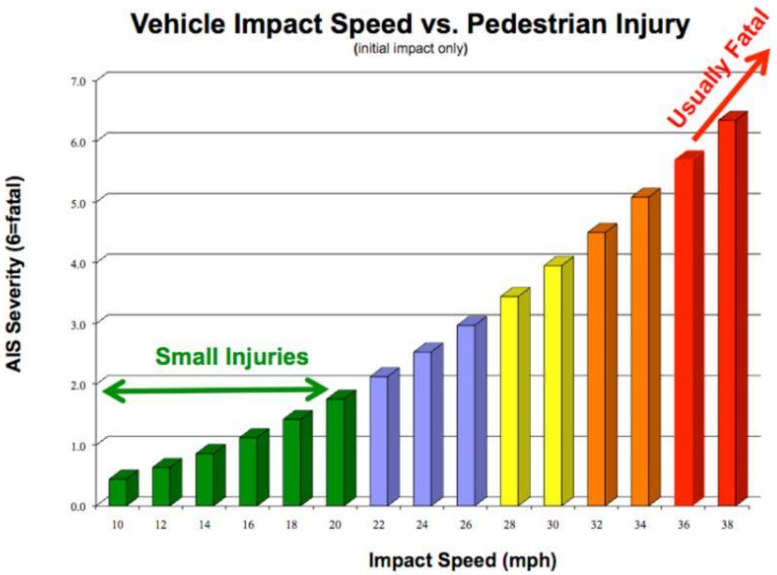
In Chelsea, there are more than 1,000 pedestrians crossing Bellingham Square at the peak hour in the afternoon, including dozens of children coming from the Williams School on the other side of the Tobin Bridge. Well-running transportation alternatives enable young people, the elderly, those that are disabled, and those of lower-income to fully participate in and enjoy their community.

However, in Chelsea, perceived safety concerns limit walking between different stops in Downtown Chelsea. Some mid-block crossings on Broadway have little warning to approaching vehicles and the Squares, particularly Bellingham Square, have poor sightlines even in striped crosswalks. Furthermore, Chelsea has some of the highest pedestrian crash rates in the region. Major pedestrian crash locations in downtown include Bellingham Square, Fourth Street at Broadway, and Park Square.

Faster vehicle speeds and unsignalized intersections reduce both vehicle and pedestrian safety, increasing the likelihood of collisions and injuries. High speeds make it difficult for pedestrians to find an adequate gap in traffic for which to cross the street. Further, because there are two lanes, even if one oncoming vehicle does slow down to yield to a pedestrian, a driver in the far lane may not.

When a pedestrian is struck by a vehicle traveling 20 miles per hour, the odds of that collision resulting in a fatality are 5%. At 40 MPH or more, that figure increases to 83-85%. The distance required for a vehicle to stop to prevent a collision also increases with speed. In order to provide high-quality public space that promotes both safety as well as civic pride, measures should be taken to calm traffic through the design of the public realm.

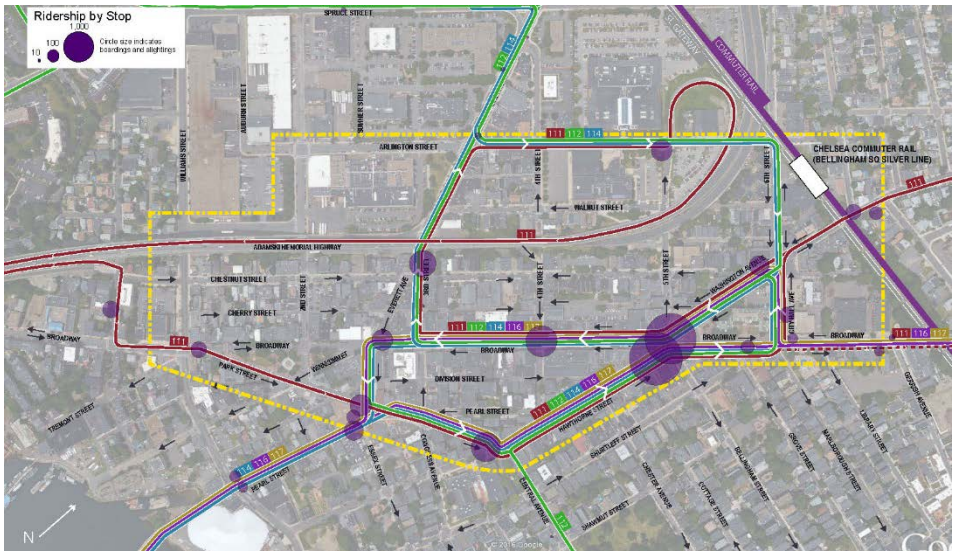
Fifth Street



Bus Stops and Transit Experience

Downtown Chelsea is served by several MBTA bus routes including the 111, 112, 114, 116, and 117. Many of these routes connect Chelsea with the larger Boston area and several bus stops along Broadway provide transfers between regional routes.

Chelsea's bus routes have some of the highest ridership in the Boston region, with highest levels of transit activity being concentrated at the bus stops near Bellingham Square on Hawthorne Street and on Washington Avenue. This high level of transit usage adds to the bustling street life and pedestrian activity found in Downtown Chelsea.



High Parking Demand

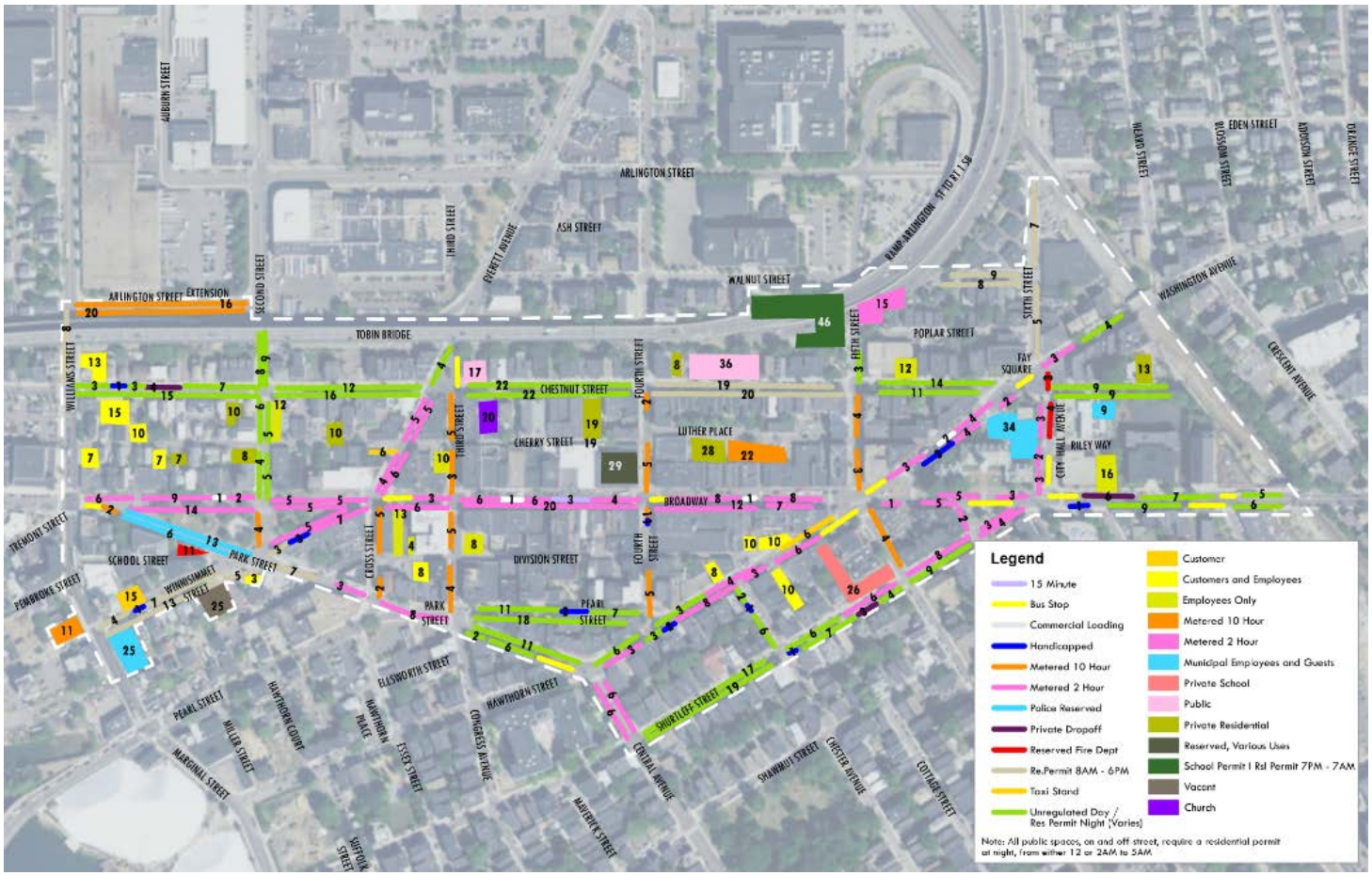
An adequate and well-managed parking supply can promote economic vitality in Downtown Chelsea. It plays a role in local business health by affecting traffic patterns and loading access. Parking impacts multimodal accessibility by playing a role in the pedestrian environment, design of bicycle accommodations, and resulting perceptions of safety. An improved understanding of parking issues in Downtown Chelsea through the Re-imagining Broadway study fits with the City's ongoing Parking and Loading Zone Management Process.

Location	All	Public Access	Metered Spaces	2-Hour Spaces	10-Hour Spaces
On-Street	886	860	372	280	92
Off-Street	627	279	48	15	33
Total	**1,513**	**1,139**	**420**	**295**	**125**

Inventory Findings
Land usage, regulation, pricing, and convenience drastically impact how individual parking assets are utilized. In Downtown Chelsea, the majority of all parking spaces are on-street and 75% of all publicly accessible spaces are on-street.

More than 40% of on-street spaces are metered to help manage availability. Still, close to one-sixth are restricted to residential permit-holders all day.

According to public input, enforcement is not customer-friendly and the regulations can be hard to decipher while trying to find a space. Although there are a few direction signs that identify municipal lots, parking regulation signage is often unclear or missing.



High Parking Demand

Parking Utilization

Understanding how downtown parking is managed requires being able to describe how parking facilities and on-street parking interact with each other during the peak times of day. Parking utilization counts provide a snapshot of parking demand during a typical day.

Trained individuals counted parked cars in each on-street segment and lot at pre-determined two-hour time intervals in the study area. Weekday counts were conducted on a typical, spring day in May from 7:00 AM until 9:00 PM to understand parking demand throughout the day associated with the downtown's normal activities. Weekend counts occurred on Saturday of the same week, from 9:00 AM to 9:00 PM in order to better understand the weekend parking demands occurring in the area.

A chart of hourly utilization rates for one specific location is valuable, but seeing how that location behaves among others located nearby can reveal patterns and trends not evident in numbers alone. The lot which is completely full may be right around the corner from another lot that has plenty of availability at the same time. Using the utilization data, the consultant team developed a series of maps based on the parking inventory map. Color represents the percentage of spaces utilized at each location based on notable breaks used to evaluate the adequacy of a parking facility:

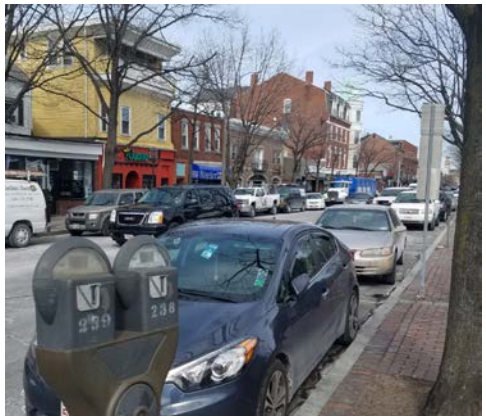
- "Cool" light blue / blue refers to 0-30% and 30-60% utilization, points at which on-street blocks and off-street facilities are viewed as underutilized.
- Green refers to blocks and facilities with 61% to 80% utilization and represent regularly-used resources, but that still have opportunity for additional demand.
- Pink refers to utilization between 81% and 90%, and are considered to be at the ideal level of parking demand.
- Red represents demand 91% or higher and is considered at functional capacity or beyond capacity. While fully maximizing efficiency, these blocks or facilities are full or near full, giving the impression of lack of parking.

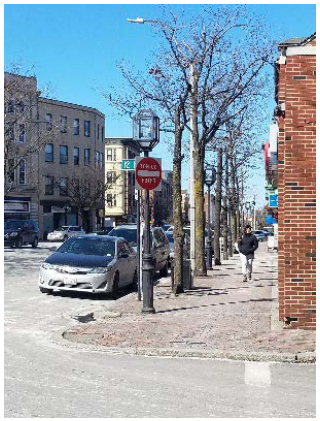
In order to ensure that parking is managed efficiently, a certain level of vacancy is preferred both on-and off-street. It is ideal to have at least one empty on-street space per block face in a downtown, ensuring easy customer access to businesses. This typically equates to about 1 out of 8 spaces free, or a target of 15-percent vacant per block face. Similarly a goal of at least 10-percent vacancy is considered ideal in off-street lots. If any facility has less availability, it is effectively at its functional capacity and drivers perceive parking problems.

Utilization Findings

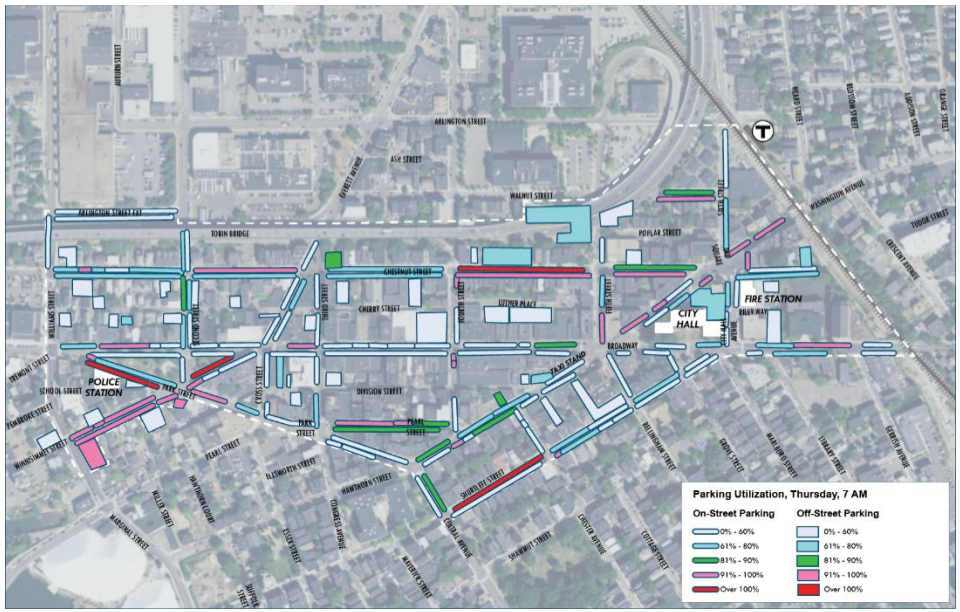
In Chelsea, parking is very full and in high demand on Broadway most of the weekday. At its peak (11:00 AM -1:00 PM), almost 80% of all metered spaces on Broadway are occupied, as well as spaces on Chestnut Street and Pearl Street. Public spaces off-street, including the Luther Place lot are also well utilized throughout the day. After 5:00 PM, on-street spaces begin to clear out on weekdays. Off-street spaces become available in the municipal lot next to City Hall after 5pm when it opens to the public. These spaces are not well advertised.

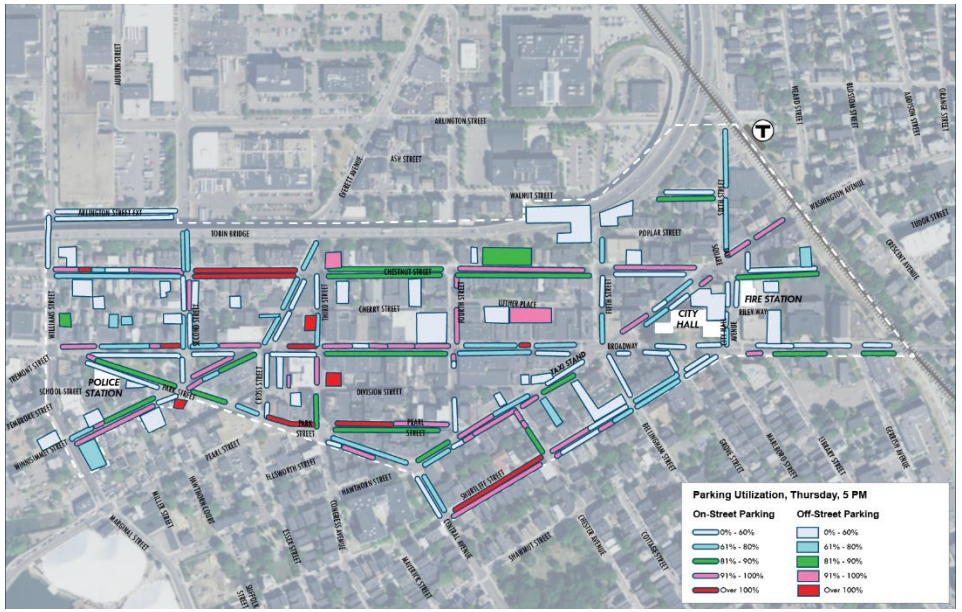
On weekends, residential streets are full throughout the day. Off-street lots have available capacity, especially by City Hall and under the Tobin Bridge. The peak parking demand occurs after 1:00 PM with 65% of spaces occupied. Metered spaces are again used at a higher rate, hitting 71% during the day and 78% after 7:00 PM when enforcement ends.

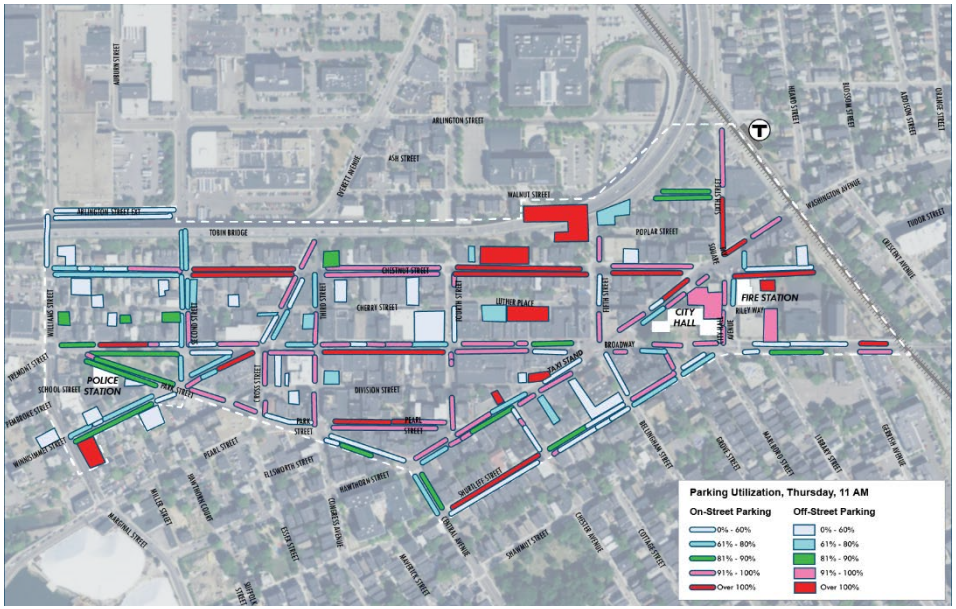


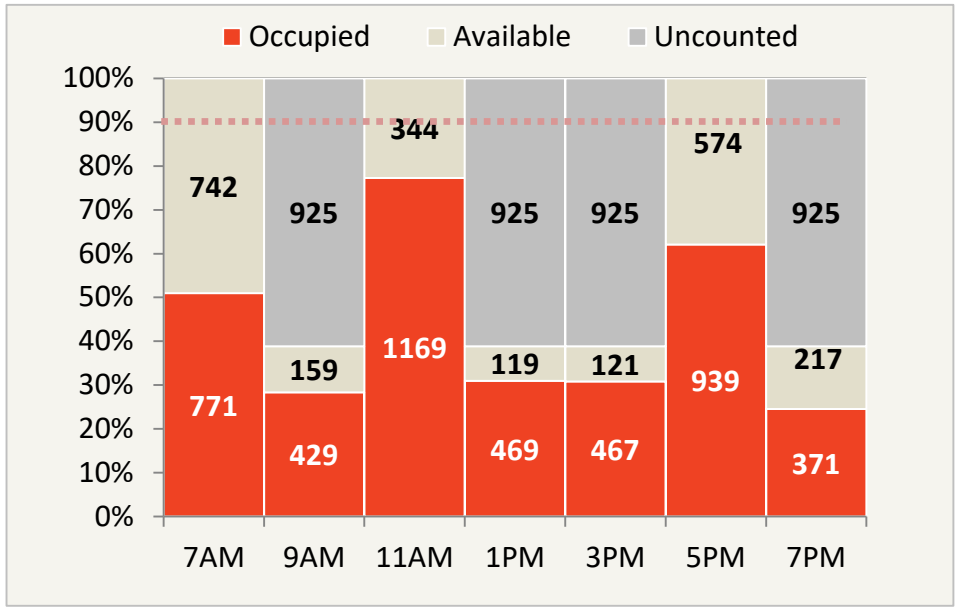


Parking Demand – Thursday Utilization



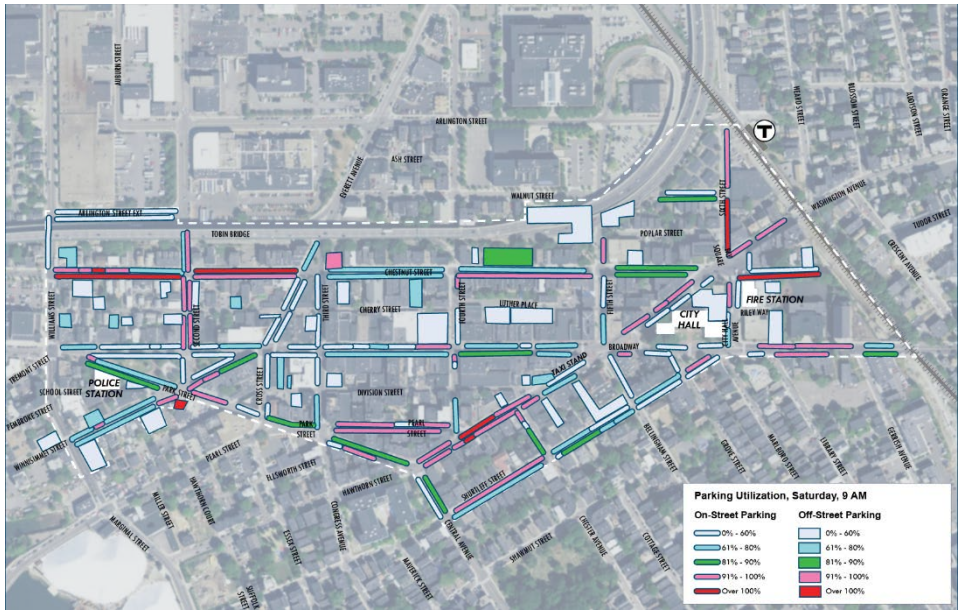


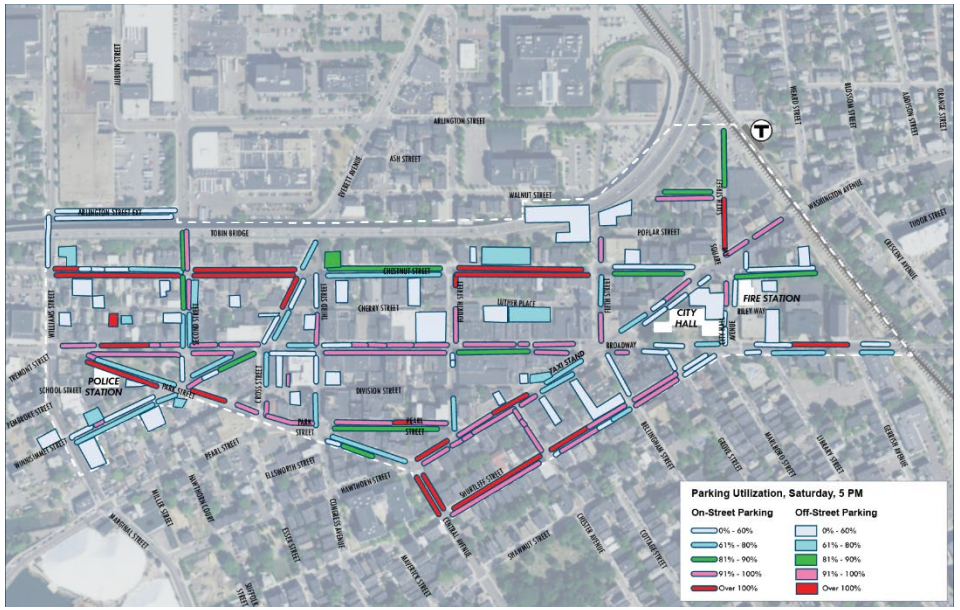


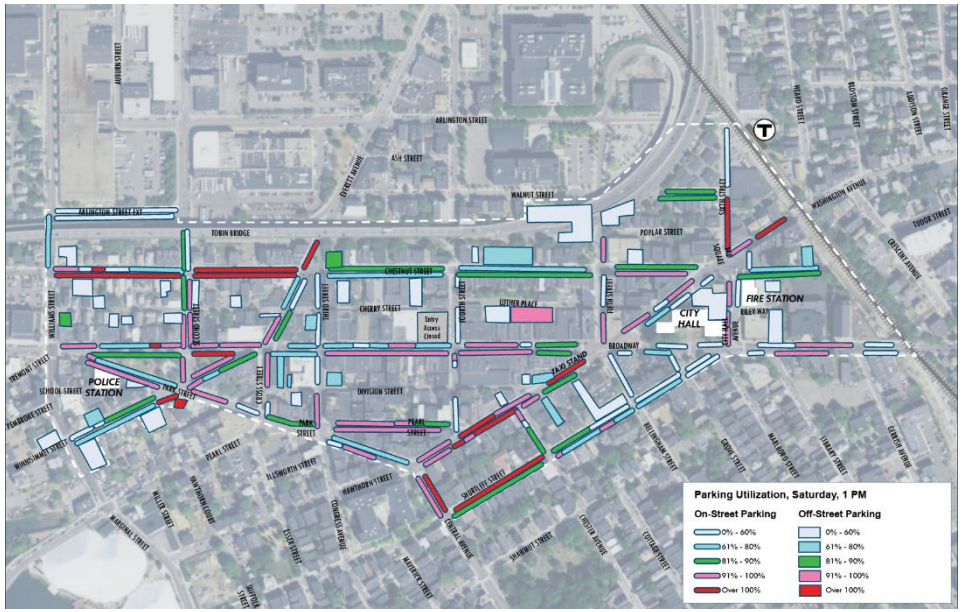


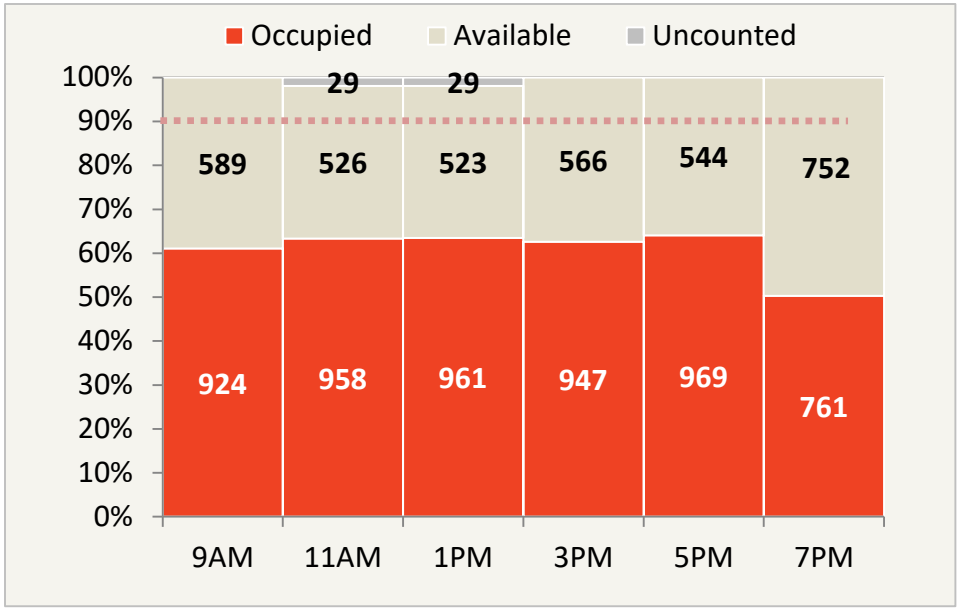
Re-imagining Broadway

Parking Demand – Saturday Utilization









Proposed Design Concepts

Proposed Design Concepts

Designing downtown streets for the largest possible vehicle and the worst possible weather conditions results in streets with oversized intersections and large turning radii, which pose added dangers for all users. The result is higher operating speeds for the most frequent vehicles on the street, passenger cars. Designing for passenger cars allows for safer operations, especially at intersections. As locations where cars, buses, trucks, bikes, and pedestrians come together and where most conflicts and crashes occur on the roadway, intersections are the most challenging aspect of street design in an urban environment.

The proposed designs take into account the goals developed through the public outreach process to try to accommodate all users, create places to gather, and put local needs first.

Re-imagining Broadway Goals

- Establish a circulation pattern that works for cars, buses, pedestrians, transit riders, bicyclists, and emergency services.
- Enhance how public space is used and accessed downtown
- Support existing businesses and encourage new growth
- Beautify the area and create a consistent, vibrant look
- Improve overall safety for all users

The task in Re-imagining Broadway was to inspire transformative change and create a vision for Downtown Chelsea that goes well beyond small tweaks to what exists now. In both a two-way Broadway design and a one-way Broadway design, there are places where big improvements and big impacts can be felt.

Under a 2-way Broadway circulation pattern, there are more opportunities to make design improvements that positively affect everyone in the downtown. It allows more transformative designs in the Squares and creates advantages for business access. However, even under a 1-way scheme, there are still many improvements that are possible. Thus, the following chapter speaks to improvements available across both options. [The full set of concept plans for both options can be found in the Appendix.]

Managed Speeds

- To increase pedestrian safety, driver caution, and to reduce vehicular speeds, narrower roads naturally cause drivers to slow down. Narrowing a lane by a foot in width can reduce travel speeds by 7mph.
- Narrowing the travel lanes on Broadway creates room for a parking-protected southwest-bound bicycle lane on the north side of the street in both the one-way.

Compact and Simple Intersections

- A tighter curb radius means not only a shorter crosswalk, but also a safer, slower turn for vehicles. Wider curb radii encourage higher speed turns at intersections. Tighter turns also give right-turning vehicles a more direct view of potential conflicts with those walking or bicycling.
- Shorter signal times move the same number of cars in the same amount of time but with more frequency, making the wait time shorter for all intersection users. The use of concurrent walk signal phases on recall (i.e. getting a “walk” phase parallel to traffic automatically at every signal cycle) instead of push-button walk phases further reduces delay for those walking and driving.

More Gathering Space for People

- Placemaking elements in the Squares and along Broadway can help improve the community atmosphere and vibrancy of Downtown Chelsea

Stamped Asphalt

Redesigning excessively wide roads to include traffic calming and aesthetic elements, as well as dedicated sidewalk and bicycle facilities is possible. Throughout the downtown, travel lanes can be striped at 10-feet wide. The visual narrowing of travel lanes, with stamped pavement in the one-way Broadway design, also helps reduce vehicle speeds.

Stamped Asphalt as Road Diet for Traffic Calming, Surrey BK

Improved Traffic Flow

Today, crosstown traffic dominates Downtown Chelsea. Re-imagining Broadway seeks to, first and foremost, serve local residents, merchants, employees, and visitors to Broadway. Recommended circulation changes help Downtown Chelsea to provide a variety of direct routes for reaching a destination, to slow traffic speeds, and to increase emergency access. Converting Broadway to two-way increases the magnitude of these benefits and establishes a street grid that aids in spreading out vehicular congestion throughout downtown.

Well-designed compact intersections can handle as many cars as large over-designed intersections.

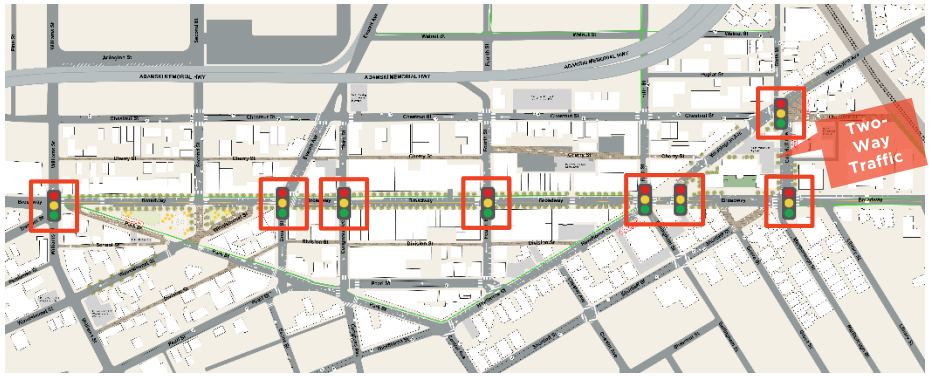
New Traffic Signals

Traffic signals are warranted at the following intersections to help manage vehicle safety and delays at key crosstown traffic locations:

- Fay Square
- Broadway @ City Hall Avenue
- Broadway @ 4th Street
- Broadway @ Congress Street/3rd Street
- Broadway @ Everett Ave/Cross Street
- Broadway @ Williams Street
- Bellingham Square, a coordinated set of two signals)

Regardless of whether Broadway stays one-way or becomes two-way, installation of these signals will improve both vehicular traffic flow and pedestrian safety in multiple ways.

- The heavy volumes of cars from Everett Avenue can safely cross Broadway to reach the McArdle Bridge, Chelsea Street Bridge, or Route 1.
- With longer gaps in traffic, vehicles have greater opportunity to back into and out of parallel parking spaces, reducing delays behind them.
- Buses have longer opportunities to pick up passengers at stops without blocking traffic behind them.
- By designating time during each traffic signal phase, pedestrians can cross the street safely.



- Short cycle lengths are ideal for increasing turnover, reducing delay, and improving pedestrian compliance. They help create consistent pedestrians crossings, increasing safety.
- Signals will also make turning cars more predictable. They will also slow down speeding vehicles, lowering the risk of severe injury from crashes.

Bi-directional City Hall Avenue

Another traffic circulation change common to both design options is the conversion of City Hall Avenue from one-way to two-way traffic flow. This cuts down much of the traffic volume on Washington Avenue and Broadway around City Hall and reduces the number of vehicles speeding through Bellingham Square which is very busy with pedestrians and bus passengers.

Enhanced Placemaking and Public Open Spaces

Increasing the accessibility to and usefulness of the public open space along Broadway is key to improving the corridor's vitality and cultivating a sense of place. Along the length of the Broadway commercial corridor, the sidewalks are widened at roadway intersections, shortening crossing distances conflicting with vehicular traffic, and at bus stops, increasing capacity where people tend to gather.

Bellingham Square and Cherry Street

The proposed reconfiguration of the intersection re-proportions the public space across Broadway, providing shaded seating that is immediately adjacent to businesses and the natural life of the sidewalk. This encourages a more engaged use of the public space and diminishes the perceived dominance of long-term loiterers.

The urban atmosphere is further enhanced by distinctive paving patterns, integrated seating and lighting, and a robust street tree canopy which reflects an urban realm as vibrant as the life which inhabits it. The gradient pattern gives a rhythm and iconic aesthetic to the Square, whereas the raised street table and bollards help to unite both sides of the public space while calming vehicle traffic that approaches the intersection.

Along Cherry Street, mounted lighting increases the safety and visibility of the street. The gradient pattern continues into the alleyway to denote it as a shared street.

Chelsea Square

Shared streets are proposed for Winnisimmet and 2nd Street which expand the realm of the open space while increasing safety and accessibility. Further designs are forthcoming, building on the work of participants in the charrette hosted by the Boston Society of Landscape Architects on April 12th, 2018. Low-maintenance elements suggested include widened sidewalks, integrated bench seating and plaza space, increased tree canopy, and distinctive paving pattern to connect the open space to surrounding restaurants and cultural institutions.

Current Conditions at the corner of Washington and Cherry Street

Proposed Streetscape Improvements at Cherry Street near Bellingham and Fay Squares

Added Streetscape Elements

Shared Side Streets

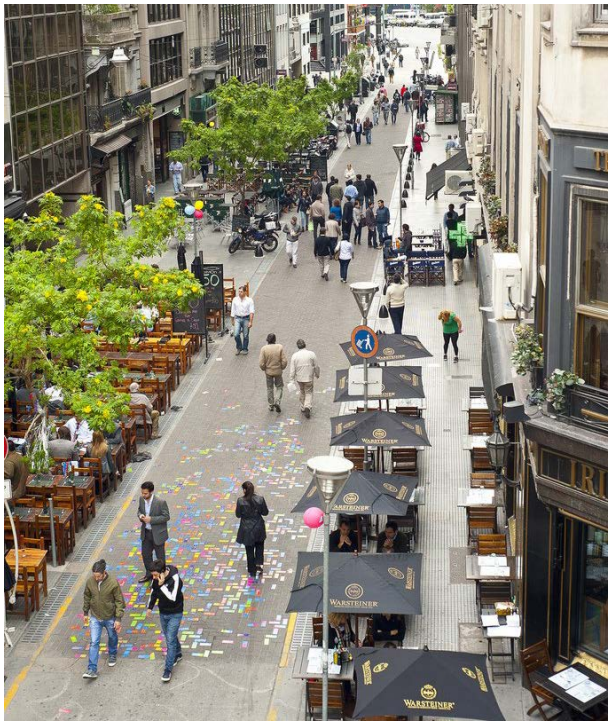
Right now, the narrow side streets parallel to Broadway are not utilized as much as they could be. Pavement quality, lighting, and general activity can all go a long way to encourage more use on these side streets. Narrower alley-like side streets like Winnisimmet Street, Division Street, Cherry Street, and School Street can be redesigned to give pedestrians priority. Streets at the same level as the sidewalk can help transform the traditional segregation of street space into a street with low-speed where use by vehicles, bicyclists, and pedestrians negotiate the right-of-way cooperatively, rather than relying on traffic controls and road signage.

Raised Crossings

Raised crossings are placed at key gathering spaces in Downtown Chelsea, including the intersection of Washington Avenue at Broadway. Such a crossing would raise the street to be flush with the adjacent sidewalks, and use best practice standards to distinguish sidewalk from street space. The ramped up travel right of way reduces the speeding of vehicles to create a safer environment for all users.

Raised Table

A raised table or speed table is a flat, raised area, typically 3-4" high and ramped on each side. More than a raised crossing, the raised area typically covers an entire intersection as well as all crossings, which eliminates the need for curb ramps. Raised tables are typically installed on two-lane roads with speed limits of no more than 30 mph. A raised table is recommended for 2nd Street to reunite both halves of Chelsea Square and on Grove Street next to the expanded bus hub.



Textured or Colored Pavement

Special crossing treatments ensure visibility and awareness of crossings. Inlay tape is recommended, as well as granite paints or stamped colored concrete. The final design should not impair wheelchair movement, and maintenance considerations should be taken into account in colder climates.

Paving treatments in travel lanes can visually narrow the roadway to help reduce speeds and are more commonly used on streets with higher volumes of pedestrians and lower volumes of motor vehicle traffic.

Curb Extensions

Curb extensions, or bulb-outs, extend the sidewalk to visually and physically narrow the street. They reduce pedestrian crossing distance and increase pedestrian visibility. At signalized intersections, curb extensions can encourage slower driving, calm traffic, and increase overall safety by narrowing the street profile and creating a tighter turn radii.

Improved Walking Safety

Throughout Re-Imagining Broadway, the design principles to balance the needs of all users and improve the walking atmosphere are achieved by managing traffic speeds, creating compact and simple intersections, and enhancing public space.

The added streetscape elements and improvements to traffic flow have the further benefit of improving safety for pedestrians. To maximize pedestrian safety, optimal vehicle speeds should be 20 mph, with a posted speed limit of no greater than 30 mph. Narrowing travel lanes, either by visually narrowing the roadway with stamped asphalt or by converting Broadway to two-way traffic will automatically reduce speeds.

Improving intersections along Broadway and in Downtown Chelsea is a high-impact approach to increase safety and walkability. Today, while intersections on Broadway have crosswalks, they are uncontrolled and pedestrians face speeding vehicles. Pedestrian safety is immediately improved with the addition of proposed traffic signals. At congested high speed intersections, the same vehicle throughput can be achieved in a much safer environment for pedestrians with traffic signals. The signal cycles make turning vehicles more predictable and short cycle lengths with a dedicated pedestrian phase reduce the desire for jaywalking and increase pedestrian safety. Shorter signal times move the same number of cars in the same amount of time but with more frequency, making the wait time shorter for all intersection users.

Smaller intersections, whether through a full redesign like in the Squares or with curb extensions, offer shorter walking distances, a more connected network, and added public spaces. The curb extensions push out the sidewalk at crosswalks to the edge of the parking lane, narrowing the street in order to decrease pedestrian crossing distances and reduce vehicle speeds. Curb extensions provide better visibility at corners and tighten curbs, which force vehicles to slow down while turning. Mid-block bulb-outs also serve to expand the pedestrian realm as an extension of the sidewalk and help slow traffic at key desire lines for pedestrian crossings.

Curb Extension


Raised Crossing

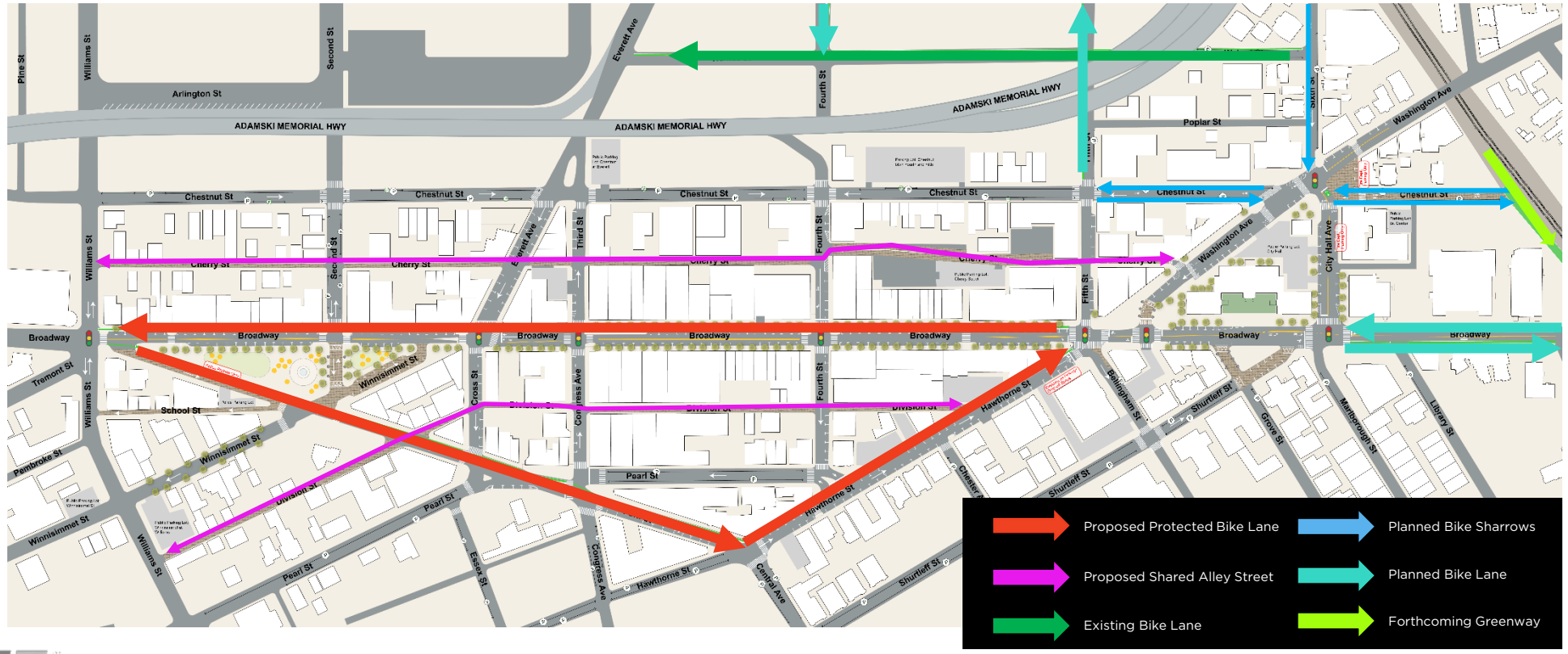

Raised Table

Improved Biking Safety

The proposed bicycle network builds off the work already being implemented in the City. New sharrows will be painted on Chestnut Street, 6th Street, and 5th Street to link the Silver Line Gateway shared use path to Downtown Chelsea and neighborhoods to the north. New bike lanes will be striped on Broadway east of City Hall. A 16-community bike share system is planned to launch in Chelsea by Summer 2018, bringing more and new cyclists to downtown.

In Downtown Chelsea, Re-Imagining Broadway seeks to create a cycling network that is low-stress and friendly to all users, a parking-protected bike lane network is proposed on primary corridors in Downtown Chelsea.

- Southwest-bound cyclists will be able to travel down Broadway between Bellingham Square and Williams Street in a parking-protected bike lane.
- Protected lanes for north and eastbound cyclists are proposed on Park Street and Hawthorne Street between Chelsea Square and Bellingham Square.
- Shared streets treatments on Cherry Street, Division Street, and Winnisimmet Street will calm traffic speeds.
- Brightly-colored bike treatments through downtown intersections will increase the visibility of potential conflict areas and raise awareness of bicyclists. Studies of painted intersections confirm bicyclist comfort is enhanced and motorists are encouraged to yield more often.

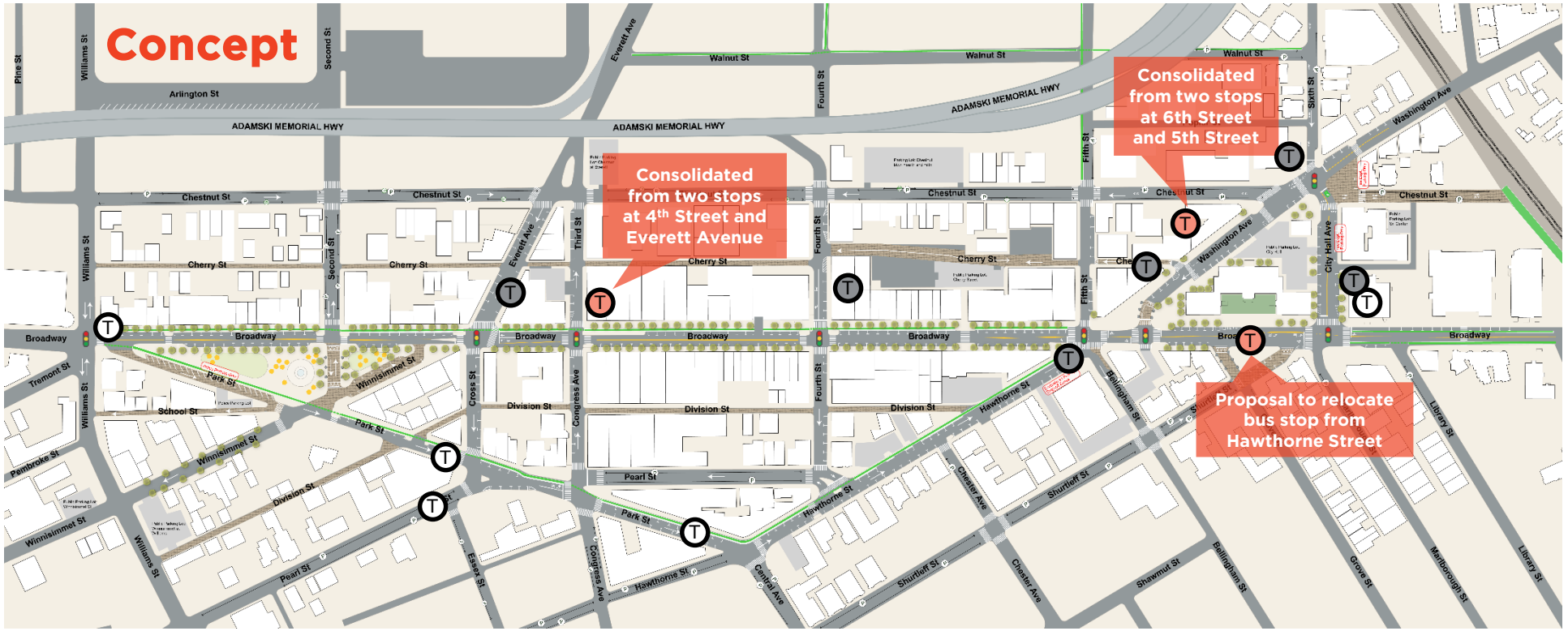


Concepts for Improved Bus Service

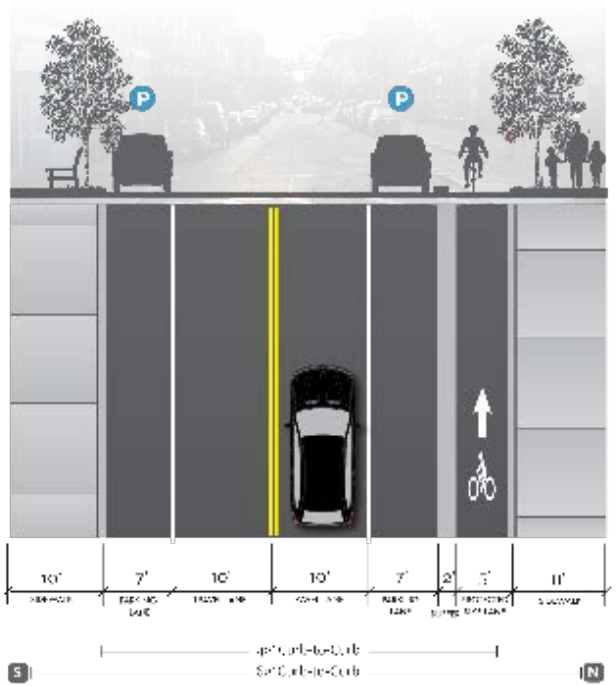
Travel by bus is of supreme importance to Downtown Chelsea residents, employees, and visitors. Thus, it will be a continued point of focused coordination between the City and the MBTA. Based on existing transit ridership data, public input, and traffic analysis, this process envisioned ways that bus improvements could coincide with multimodal circulation and public space improvements.

These opportunities will continue to be evaluated in the ongoing engineering process to follow and in the City's coordination to evaluate patterns as they shift with the forthcoming connections provided by the Silver Line. The City of Chelsea can explore opportunities to pilot particular bus service concepts just as other suburban communities in greater Boston have been doing with the MBTA. Also, with other streetscape and circulation changes in Downtown Chelsea, transit ridership and performance can change and this should be considered in the process going forward.

The draft transit concept proposed by this process is included below: existing transit stops are mapped with a white T logo, new consolidated stations are mapped with a red T logo, and ones that would be moved or consolidated with others are shaded in darker grey. No bus routes would be altered in either proposed scenario but performance would be expected to increase for buses just as congestion would decrease for cars travelling through the area. Further, all intersection proposals were designed with the turning templates for MBTA buses to ensure they can accommodate bus circulation. All of these transit concepts can be evaluated in flux with the ongoing engineering process, as many of these could still achieve similar goals for transit with minor tweaks and adjustments to the design.



Proposed Broadway Cross-Sections: Two-Way

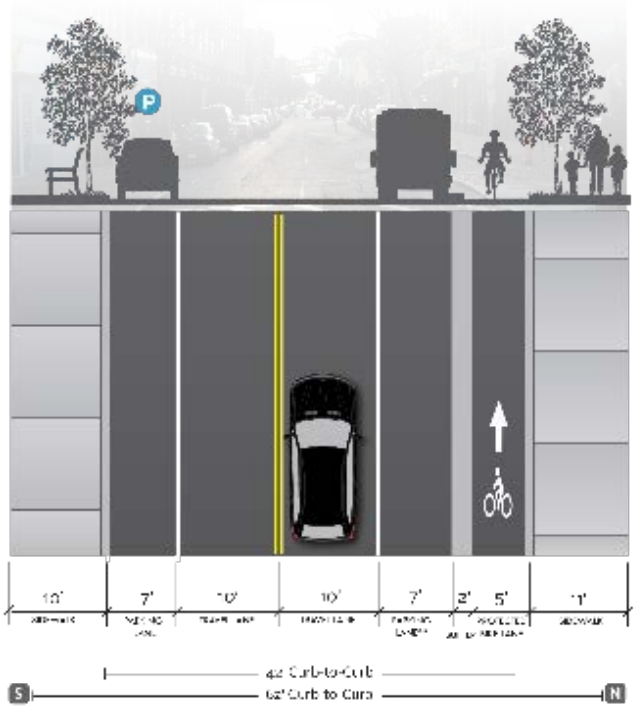


Proposed Two-Way Broadway, Typical

Two lanes of on-street parking are retained, with a new parking-protected bike lane added. There will be one 10-foot wide travel lane in each direction, compared to 13-foot lanes today.

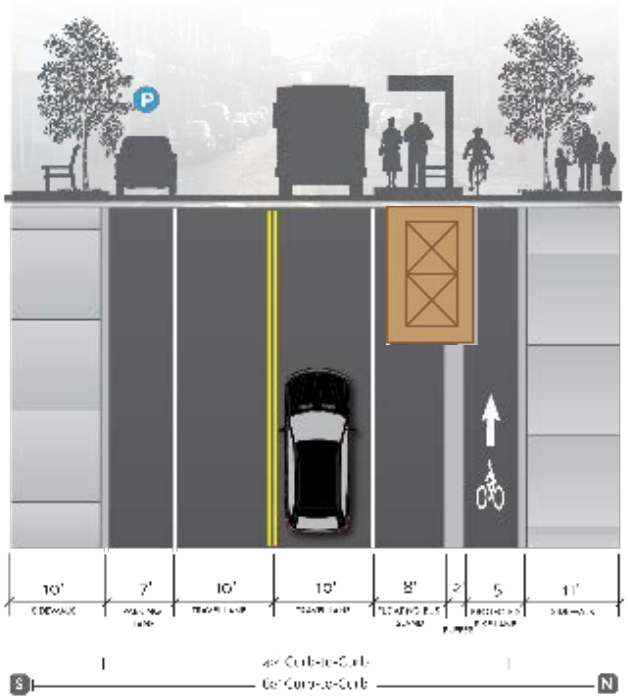
The bike lane allows for less intimidating bike access to and through downtown, as well as moving more people efficiently.

The two-way traffic and narrowed lanes slows traffic speeds by requiring drivers to be more vigilant. Two-way traffic also creates safer and more predictable crossings for pedestrians.



Proposed Two-Way Broadway, Loading

The City of Chelsea is currently in the middle of a planning process to evaluate and relocate their short-term parking and loading spaces and determine the hours of each regulation. Where loading zones are located or where 15-minute limit spaces are located, they will take the place of a longer-term parking space during designated hours and be strictly enforced.

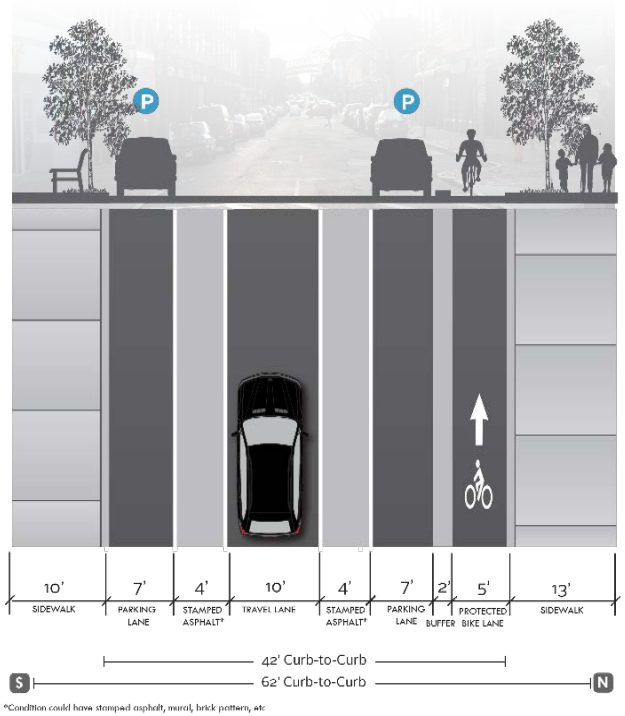


Proposed Two-Way Broadway, Bus Stop

Two-way traffic reduces congestion from redundant circulation, leading to better on-time transit performance.

Buses do not have to pull out of traffic to pick up passengers. Moving the stop to an island floating in the parking lane also frees up space on the sidewalk next to retail stores and restaurants, where shelters currently cause significant obstructions. Wider spaces mean families with strollers or people in wheelchairs can more safely navigate the street. There is potentially room for new trees, planters, or benches. These amenities and sidewalk features were strongly supported in public meetings.

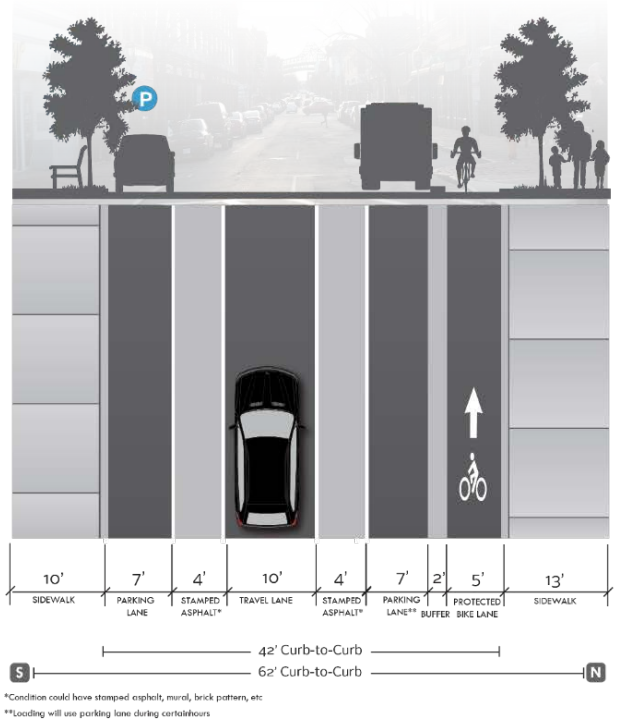
Proposed Cross-Sections: One-Way



Proposed One-Way Broadway, Typical

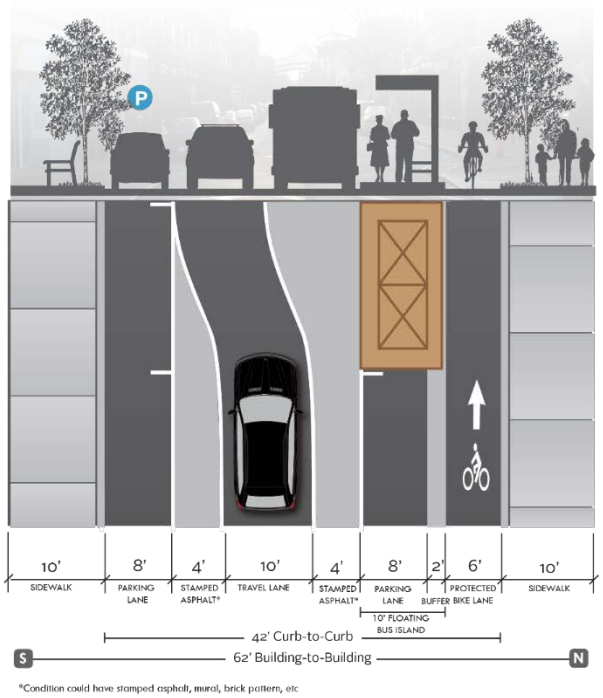
The proposed Broadway cross-section includes a parking-protected bike lane on the north side of the street. Two lanes of on-street parking are retained and there will be one 10-foot wide travel lane, compared to two 13-foot lanes today.

Current traffic on Broadway does not necessitate two travel lanes; the number of vehicles warrant the inclusion of only one lane. To maintain emergency vehicle access, 4-foot-wide stamped pavement buffers the travel lane, visually maintaining a narrower lane for reduced speeds.



Proposed One-Way Broadway, Loading

The City of Chelsea is currently in the middle of a planning process to evaluate and relocate their short-term parking and loading spaces and determine the hours of each regulation. As with the two-way proposed cross-sections, where loading zones are located or where 15-minute limit spaces are located, they will take the place of a longer-term parking space during designated hours and be strictly enforced.

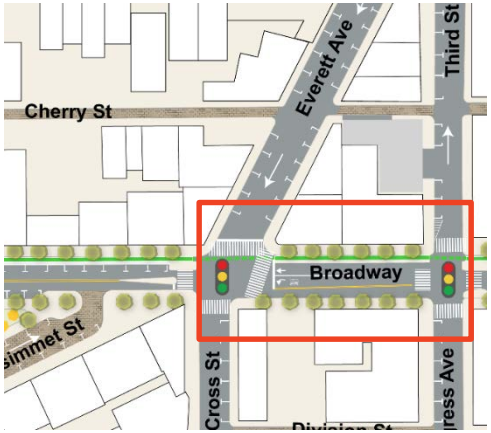


Proposed One-Way Broadway, Bus Stop

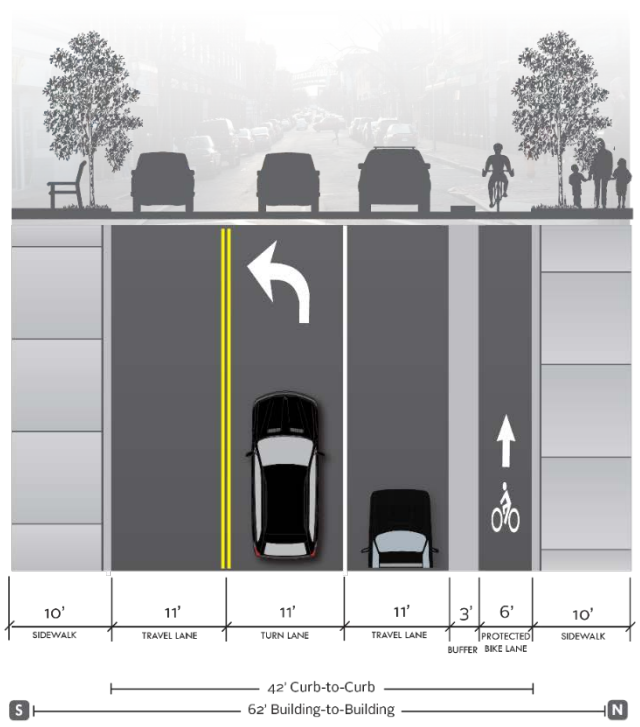
Buses can pull out of the single lane of traffic to pick up passengers by expanding the width of stamped pavement on the right side of the street and reducing it to the left, creating a curved lane for cars, leading to reduced vehicle speeds before the intersection.

As with the two-way concept, moving the stop to an island floating in the parking lane also frees up space on the sidewalk next to retail stores and restaurants, where shelters currently cause significant obstructions.

Proposed Cross-Sections: Turn Lane at Cross Street

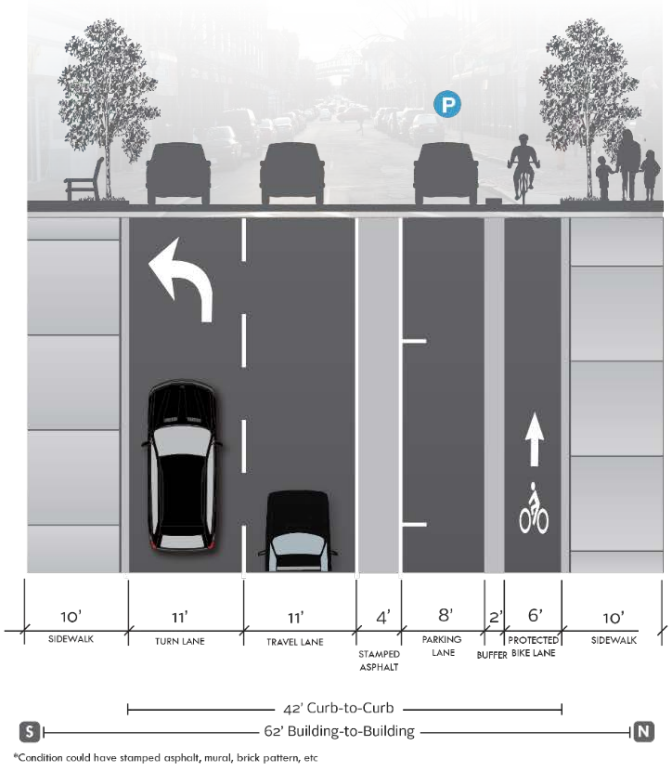


A left-turn lane is required on the short block of Broadway between Congress Avenue/Third Street and Cross Street/Everett Avenue in both a two-way configuration and one-way configuration to prevent excess queuing for vehicles continuing straight past Chelsea Square.



Proposed Two-Way Broadway, Turn Lane

On this block of Broadway, both parking lanes are removed, shifting the southwest-bound travel lane over to make room for a left-turn lane. Additionally, the lanes are expanded to an 11-foot width, while maintaining the protected bike lane.



Proposed One-Way Broadway, Turn Lane

On this block of Broadway, the south-side parking lane is replaced with a turning lane. The travel lanes are both 11-feet wide and the 4-foot buffer next to the parking lane is maintained.

Improved Understanding of Parking Issues

The city is managing an ongoing process to address parking, loading, pick-up and drop-off issues in Downtown Chelsea. This Re-imagining Broadway analysis helped the City better understand what is on the ground today, what are the parking demand patterns, and document the public concerns to feed into that larger process.

From the parking process, the designs were informed by the value on-street spaces have on Broadway and, thus, it maintains these spaces as much as feasible in the proposed design. As part of the City's process, they will begin a new program to focus enforcement on the posted 2-hour regulations on Broadway and double parking and use the database developed in this process to re-evaluate demand patterns. Parking management should also be viewed as an ongoing process as changes evolve in a downtown area, whether that be traffic changes, land use changes, or business turnover. As part of this process, the City should identify how patterns change on side streets as a result of their new enforcement process and evaluate what tailored management solutions will address the trends that are observed.

Aside from this process, the City should focus resources on enhancing the customer-friendliness of the downtown parking system to create on-street availability. This could include creating a signage program to clarify regulations, especially for new customers and visitors who are unfamiliar with how to access businesses. Eventually, the City should also consider options for more customer-friendly and performance-based enforcement, one that incentivizes parking compliance. Examples of programs in a such a system include policies that allow 1st tickets free (so that users learn the policy) and escalating fines (to encourage compliance).

The City can also provide more customer-friendly parking information online and in businesses with a clear map of the locations, price, and regulations of public facilities. This program could also include promoting public facilities that might have availability for restaurant patrons after hours.

Further down the road, the City could consider expanding its resident permit program, creating rate differentials in areas of higher parking demand, and capturing parking revenue for streetscape and parking management benefits like new, dynamic meters that accommodate new options like card payment and pay by phone in addition to coin payments.

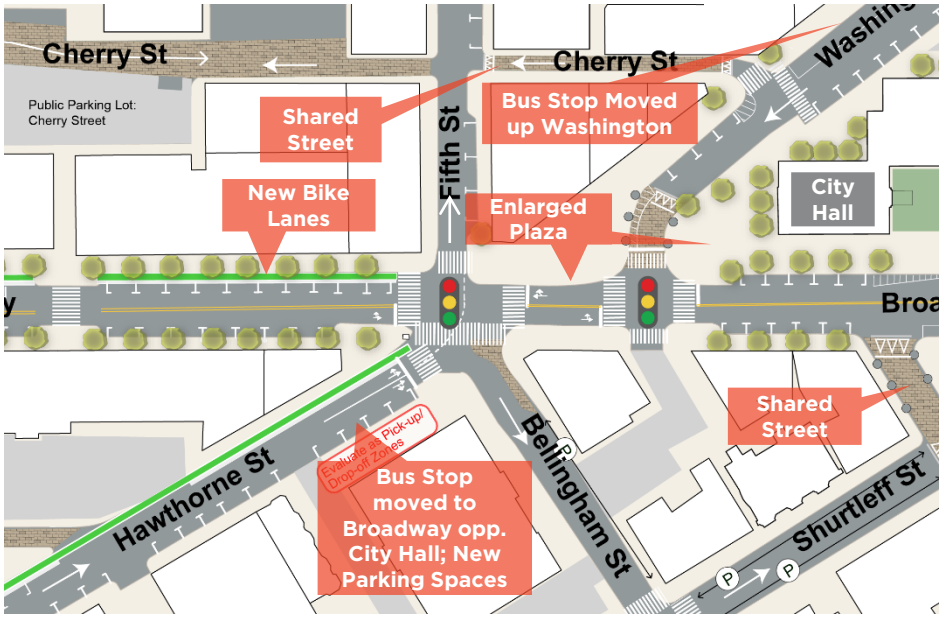
Bellingham Square Concepts

Bellingham Square is the heart of Downtown Chelsea at the epicenter of daily activity surrounding bus stops, businesses, and City Hall and along 5th Street to access the High School. Right now, though, it is dangerous for pedestrians and drivers with its confusing lane configurations, poor sight lines, and indirect crosswalk locations. Because of the one way streets, a large amount of vehicular traffic is recirculating through the intersection.

Proposed Design

The physical designs for the intersection are unchanged whether Broadway is in a two-way or a one-way configuration. Traffic signal phasing will need to be altered, however.

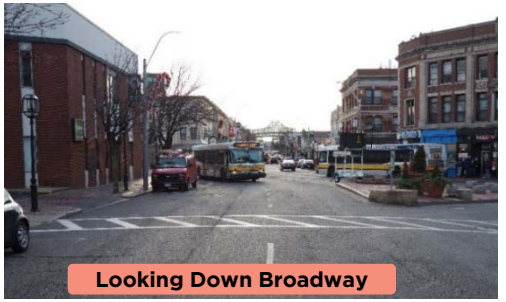
- Reconfiguration into two coordinated intersections managed with linked traffic signals that accommodate vehicles through the intersection and allow new movements from Hawthorne Street to 5th Street and from Hawthorne Street to Broadway. These new movements relieve a huge amount of traffic from the roundabout movement currently required.
- Removal of the Washington Avenue slip lane because two-way traffic is introduced on City Hall Avenue, eliminating the need for cars to go down this block of Washington to get back to Broadway.
- Create a larger civic space next to City Hall and outside of businesses on Washington Avenue as a more inviting pedestrian area in the square, matching a strong desire identified at the first public meeting.
- Construct a raised table on Washington Avenue to be at the level of the curb to slow vehicular traffic speeds along the street, with bollards to keep pedestrians safe.
- Repave Grove Street and Cherry Street as shared streets to expand the realm of the open space and pedestrian priority while increasing safety and accessibility.
- Relocate the Bus Stop north on Washington Avenue to the other side of Cherry Street to make room for longer queuing of passengers and vehicles, while providing room for an enlarged plaza.




Looking towards Hawthorne


Fifth Street


Looking towards City Hall


Looking Down Broadway

Re-imagining Broadway

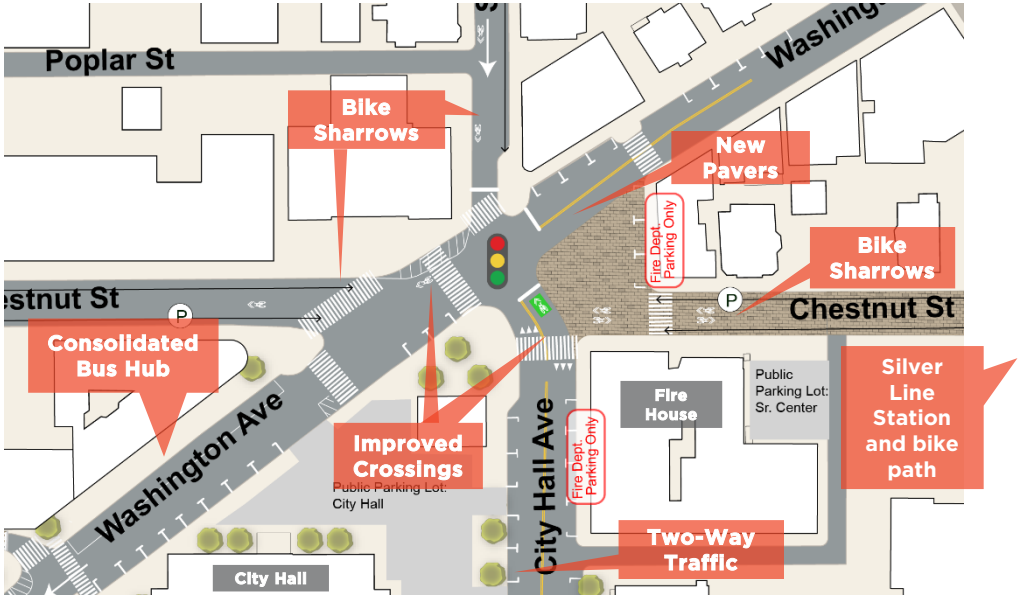
Fay Square Concepts

Today Fay Square is characterized by an overwhelming amount of underutilized pavement. Pedestrian crossings are difficult due to lack of designated crosswalks. In particular, it is difficult to cross to or from the bus stop at the corner of Washington Avenue and 6th Street opposite City Hall Avenue. Fay Square, as a key gateway to Downtown Chelsea from the Silver Line Gateway, can better introduce transit riders to the community, drawing visitors to downtown shops and restaurants.

Proposed Design

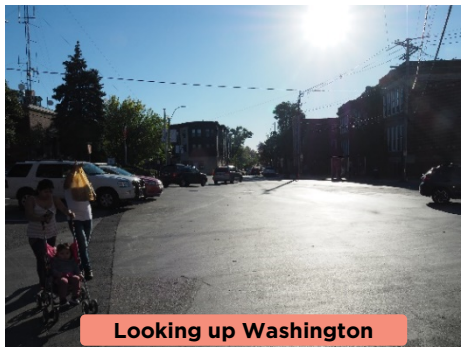
The designs are unchanged whether Broadway is in a two-way configuration or a one-way configuration.

- With City Hall Avenue converted to two-way traffic, fewer cars need to travel around City Hall down Washington Avenue to get back to Broadway. A new traffic signal helps control the flow of vehicles across the intersection to head southbound on City Hall Avenue.
- The large expanse of pavement is broken up and defined into clear vehicle lanes with stamped pavement or pavers. These are mountable by fire trucks and vehicles or bicycles headed to the end of Chestnut Street.
- New crosswalks show where it is safe to walk. In particular, a new crosswalk from 6th Street to City Hall Avenue closer to the end of the block reduces the distance for pedestrians to cross.
- Curb extensions further reduce the crossing distances and slow down turning vehicles.
- Relocate the bus stop is moved north along Washington Avenue closer to Fay Square for easier transfers to the Silver Line Gateway and to provide more room for queuing on the block.
- Shared lanes for bicycles coming off the Chelsea Greenway next to the Silver Line are planned to cross Chestnut Street before linking to Fifth Street or Sixth Street




Looking towards Washington


Looking towards 6th Street


Looking up Washington


Looking Down City Hall Avenue

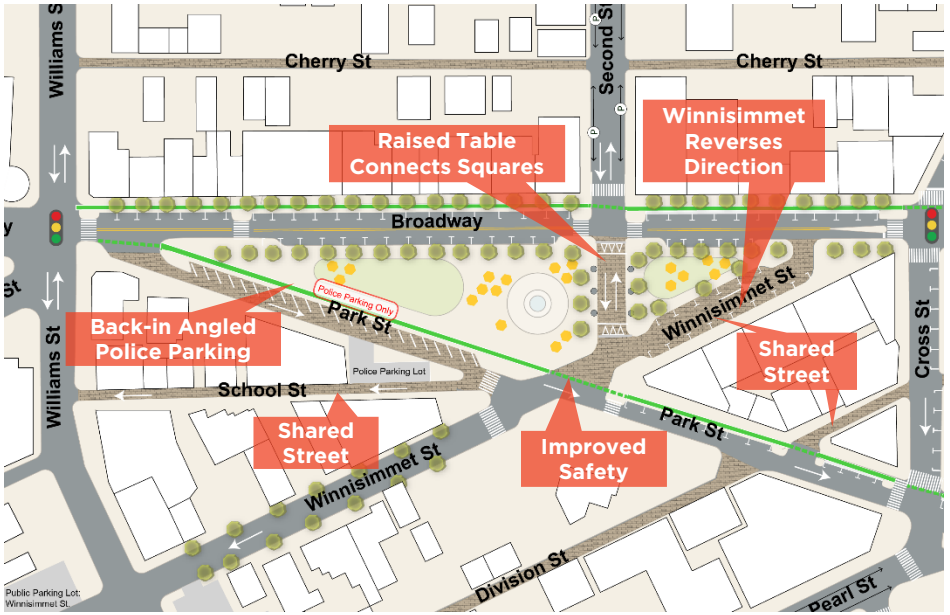
Chelsea Square Concepts

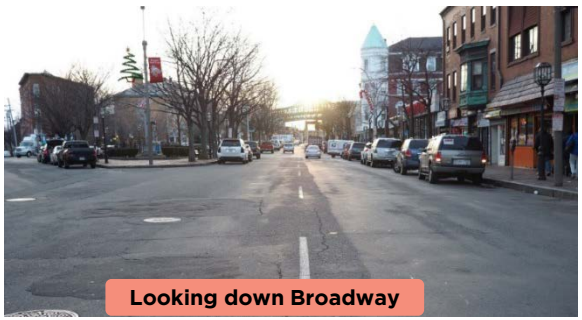
Chelsea Square currently experiences less pedestrian and retail activity than Bellingham Square, which encourages drivers to speed more often. Access to the interior of the Square is limited by missing crosswalks, particularly where Park Street, 2nd Street, and Winnisimmet Street meet. The large expanse of pavement is undefined and cars routinely park in the middle of the intersection.

Proposed Design

The designs are unchanged whether Broadway is in a two-way configuration or a one-way configuration.

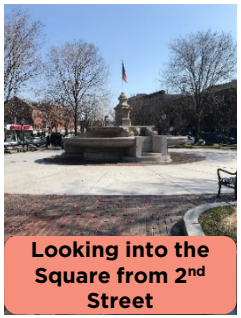
- A proposed traffic signal at the intersection of Cross Street / Everett Street and Broadway and the existing signal at Williams Street and Broadway help control traffic speeds.
- Winnisimmet Street reverses direction to cut off the option for vehicles to use the street as a high-speed shortcut to get to Park Street, rather than turning at Second Street or Williams Street. In a two-way traffic configuration on Broadway, this would also be a dangerous left turn both for drivers and for pedestrians. With less traffic on this road segment, the square is more comfortable. Winnisimmet Street can also be closed selectively for public events without disrupting circulation.
- Police car parking shifts to the north side of Park Street and becomes back-in diagonal parking to allow for quicker emergency response.
- 2nd Street between Broadway and Winnisimmet Street will become a raised table to reduce traffic speeds substantially and help unify the two halves of the Square.
- Curb extensions reduce the amount of pavement at the diagonal intersections.
- Eastbound parking-protected bike lane added to Park Street.
- Shared streets surround the Square on Park Street, Winnisimmet Street, and 2nd Street to make the Square feel larger and give more space to community-building.




Looking down Broadway

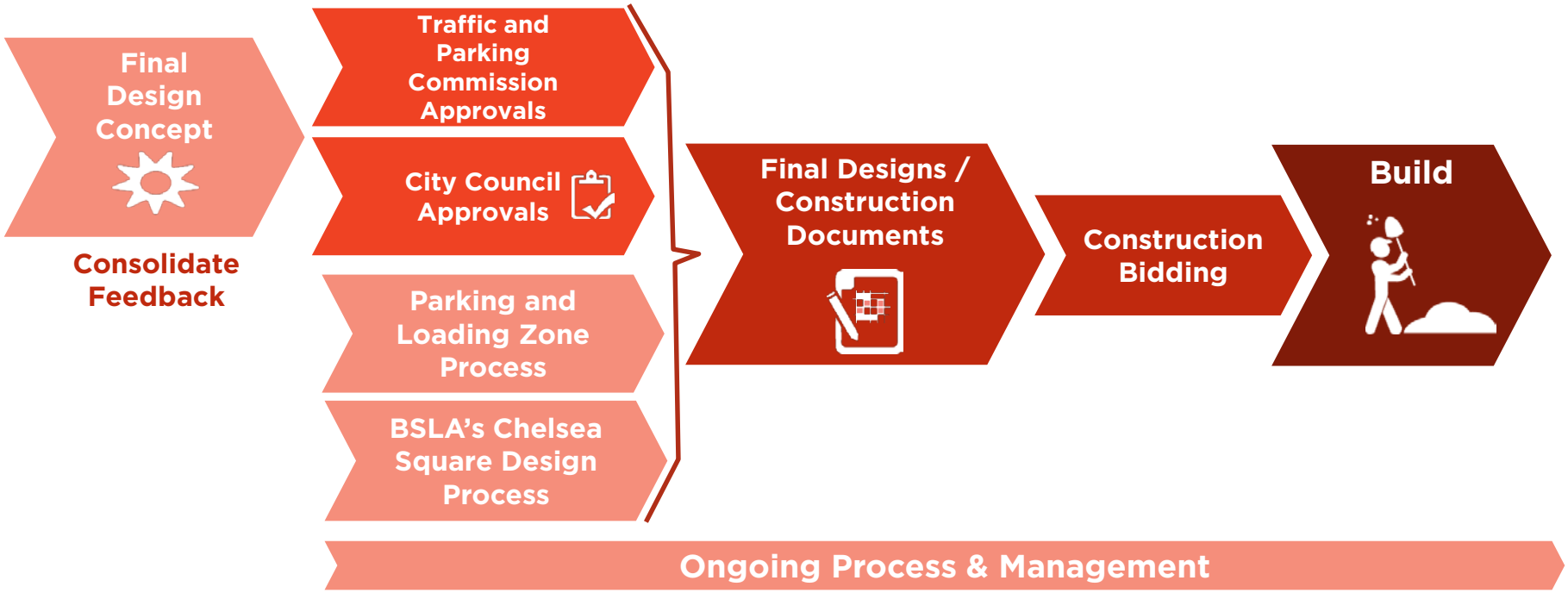

Looking up Winnisimmet to Broadway


Looking down Winnisimmet from Broadway


Looking into the Square from 2nd Street

Getting it Done

Looking Forward



Beyond Re-imagining Broadway, there are other parallel and future planning processes that will affect what happens in downtown Chelsea, including the parking and loading zone process. Therefore, there are other steps and additional opportunities to fine-tune exact details.

The design concepts are not refined to the exact inch. Details, such as the exact turning radii at key intersections like Bellingham Square to ensure that City fire trucks and MBTA buses can navigate safely, still need to be determined and final construction documents need to be stamped before the designs can be put out to bid.

Phasing Priorities

- All deep utility upgrades will be completed prior to construction of curbline, pavement or sidewalk changes.
- For either design alternative, one-way traffic flow will be maintained along Broadway during construction to enable consistent traffic flow through Chelsea
- With the implementation of both the Broadway and City Hall Avenue conversion to two-way traffic flow, Washington Avenue can then be fully closed to construct pedestrian and transit improvements
- If two-way traffic flow is implemented, traffic cones will be placed along the centerline of the roadway for a minimum of two weeks to enforce the new travel pattern. Variable message boards and increased police presence will also be used to ensure a smooth transition.

Appendix