

# LONG WHARF RESPONSIBLE GROWTH PLAN

**PERKINS —  
EASTMAN**

City of New Haven | Langan | Real Estate Solutions Group, LLC | Appleseed | W Architecture | Fitzgerald & Halliday, Inc.



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# Executive Summary

## The “New Long Wharf”

The Long Wharf Responsible Growth Plan proposes a comprehensive strategy for transforming the Long Wharf Area into a series of diverse and dynamic mixed-use districts, each focused on an entirely new public realm. The Plan addresses the area's resilience against future climate-change induced weather events and sea level rise; needed infrastructure improvements to support new development; and the anticipated costs and revenues associated with the proposed development. The Plan features several key recommendations:

- Five new walkable, mixed-use districts
- A new “Long Wharf Greenway,” a linear park that will link the four districts together
- 7.7 million square feet of new development including 4,600 units of residential development, 340,000 sf commercial office, 320,000 sf retail, and 440 hotel rooms at full build out
- A New Harbor District focused on a new water plan for New Haven Harbor and providing New Haven residents with the opportunity to enjoy a wider range of water-related activities



Figure 1. Long Wharf Responsible Growth Vision Plan

- A new multi-modal circulation system, featuring new streets, bike lanes and enhancements to the pedestrian realm that will not only link-up the five districts, but connect the Long Wharf area with both the Hill Neighborhood and the Wooster Square Neighborhood, as well as enhanced connections to Long Wharf Park and Union Station
- A strategy for stormwater management in the core of Long Wharf Area integrated with open space and recreational improvements

The Plan is based on several key principles:

- **An emphasis on the public realm** in the form of walkable streets and parks, focusing on Places, not Projects, with landscape and public open spaces dominating the view
- **Integrating and enhancing the existing** building on the area's major anchors, such as Assa Abloy, One Maritime Center, and IKEA, relying on infill development rather than “tabula rasa” redevelopment



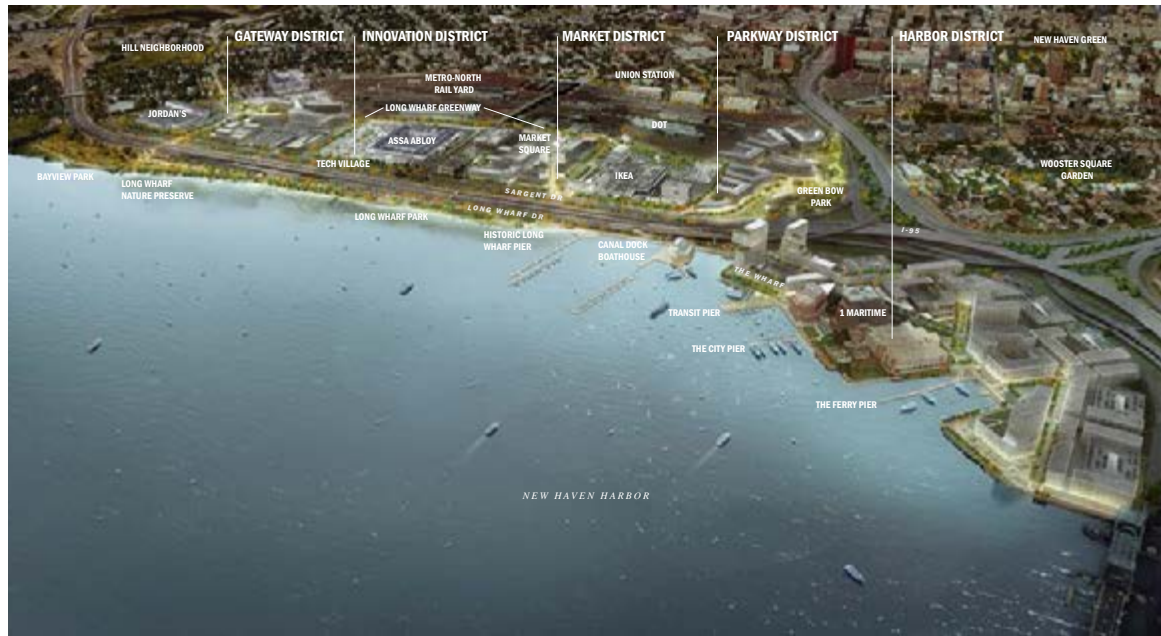


Figure 2. Rendering: Long Wharf Responsible Growth Vision

- **Market driven and staged redevelopment** with public infrastructure linked to private investments, both organized around the key places
- **Resilient and sustainable community** integrating public infrastructure and open space for coastal protection and storm water management
- **Promoting equitable development** by increasing access and mobility to and within the district, and maximizing social equity for all ethnic and age groups

The Responsible Growth Plan will have several important benefits for New Haven:

- **Creating a new front door for the city** from I-95, I-91 and the Harbor – by establishing a new vision for development focused around a new Long Wharf Greenway, the new Long Wharf will present a vibrant new image for the City
- **Transit oriented development** – proximity to Union Station
- **Reducing the City's vulnerability to storm surge and stormwater flooding** – the Plan builds on the City's ongoing work to enhance

resilience at Long Wharf Park, which includes the creation of a living shoreline, and a storm surge barrier

- **Creating jobs** – the construction and new commercial activity associated with the anticipated development is estimated to result in an average of 600 jobs per year, with wages and salaries totaling \$41 million\*. At full build-out, on a recurring annual basis, the estimated economic impact of ongoing operations is predicted to result in nearly 3,500 additional jobs in the Long Wharf area, with wages and salaries totaling nearly \$182 million\*
- **Reconnecting the City to its waterfront** – the Plan creates opportunities for new maritime activity and a new place for people to engage with the Harbor
- **Providing a major setting for new development** – the new Long Wharf will serve as an alternative to the smaller parcels and historic context of downtown New Haven and other neighborhoods

The final plan identifies the gap between available public funding sources and the costs associated with a series of “Enabling Projects” (i.e. priority public infrastructure projects), lays out a path to implement the use of Tax Increment Financing to finance this gap, and identifies critical challenges that must be overcome to make the plan a reality.

\* In 2018 dollars

## Public Engagement



### Hill South Management Team

Outreach for the Long Wharf Responsible Growth Plan kicked off with a meeting on December 4, 2017 with the Hill South Management Team neighborhood committee. The Long Wharf project team introduced the study and solicited feedback on the best way to engage the local community. The Hill South Management Team recommended engaging their neighborhood at the Betsy Ross Arts Magnet School and offered to serve as liaisons with their constituents.

Key concerns identified during this project kickoff neighborhood community meeting included:

- Increase local tax revenue by focusing on commercial development
- Address traffic concerns
- Improve water access
- Ensuring future flood mitigation

## Long Wharf Community Workshops

Building on the feedback from Hill South Management, the project team hosted a set of three community workshops, all located at the Betsy Ross Arts Magnet School (BRAMS) on Kimberly Avenue in between the Hill South and City Point neighborhoods.

### Community Workshop I

The first Long Wharf Responsible Growth Plan community workshop took place on January 9, 2018 in the BRAMS cafeteria. The meeting began at 6:00 PM. At the entrance, attendees were asked to sign in, provided meeting materials and comment sheets, and offered an opportunity to place a sticky dot on a Study Area map to showcase where they live and/or work in relation to Long Wharf. About 70 community members attended consisting of residents, business owners, Alders, City Department Heads, developers, and contractors.

The City of New Haven City opened the meeting with a brief overview of the Long Wharf Responsible Growth Plan. This introduction was followed by a presentation detailing a strategic plan focusing on economic development, urban design, coastal access and waterfront issues.







After the presentation, meeting attendees broke into table discussions about various elements of the plan (History, Five Districts, Landscape, Connections and Water Plan).

Key community findings included:

- The five districts make sense – both geographically and contextually
- Excitement about the stormwater park and inclusion of green infrastructure elements
- Concerns about sea level rise; the Plan must be sensitive to environmental change
- Wayfinding and signage throughout the Long Wharf needs improvement
- Better connection and access is important; Long Wharf feels disconnected from surrounding area and rest of New Haven
- Create a mix of uses and transportation options, like Baltimore Harbor and Alexandria
- Mitigate highway traffic noise impacts
- When possible, hide parking
- Improve bicycle and pedestrian infrastructure
- Improve transportation options throughout Long Wharf

## Community Workshop II

The second Long Wharf Community Workshop took place on March 6, 2018 at 6pm, this time in the BRAMS Parish Hall. Over 50 community members attended, with a similar demographic makeup to the first workshop.

The meeting began with sign-in, offering materials, and locating residents on the Study Area map.

The City introduced the project, followed by a presentation that showcased additional plan details based on community feedback. Instead of discussion tables, the presentation was followed by an interactive question and answer session facilitated by City of New Haven Economic Development Administrator Matthew Nemerson.

Key community findings included:

- Preservation of the Long Wharf Theater is important
- Create some iconic structures
- Marcel Prior building should be preserved
- Move the existing food trucks to the new food district







- Health care and unions need to remain an important element in planning
- The Plan needs to support local developers and construction unions
- Open more areas to commercial development
- Be sure that gentrification does not result from these plans
- Affordable housing is a must
- Work with local developers to secure funding



### Community Workshop III

The third Long Wharf Community Workshop took place on June 26, 2018 at 6pm in BRAMS Parish Hall. Roughly 40 community members were in attendance. As with the previous workshops, the public was asked to sign in, received meeting materials, and were asked to locate themselves on a Study Area map.

The workshop began with an introduction by the City, followed by a presentation with even more Plan refinement based on community input and economic development research findings. After the presentation, the attendees gathered into tables to discuss various issues (Landscape, Transit, Traffic, Districts, and Community Benefits)

Key community findings included:

- Tax revenue is critical; the plan needs to ensure that new buildings create tax revenue
- Need commercial buildings and developer investment
- No housing near Jordan's – too close to train tracks
- Parking is lacking; need to build parking structures to centralize additional parking
- Parking garages also will keep cars off streets; currently unsafe for pedestrians
- Infill the waterfront park 100 feet into the water – can still provide flood protection but open the park to more recreational activities
- Reclaim instead of dredging
- Remove one of the parks towards the northeast, replace with development
- Create a better connection between the Nature Preserve and the City Point neighborhood, especially along the bike lane/trail
- There should be a 6th district, along Long Wharf Drive
- Affordable housing must be part of the mix – not just affluent and low income, but a mix of low, middle and high-income residents
- Internet access will be important; ensure internet access for all
- Green housing is important
- Jobs are key
- Commercial tax revenue is crucial



### Hill South Stakeholders Meeting

Hill South Stakeholders meeting took place on Monday, July 23, 2018 at IKEA cafe.

- Green Bow: Long Wharf Theater could potentially move there; needs to be a tax-producing use; maximum tax-bearing uses
- Green Bow with a second scheme showing buildings on it
- Long Wharf Drive: safety issues; little cross-walk usage; too narrow
- Gain control of food-truck area re: trash and debris, etc.



Key findings included:

- Waterfront
  - » Landscape architecture on Long Wharf Park: not yet completed; can we put in recommendations to make it safer?
  - » User survey for Long Wharf Park
  - » Emphasis on importance of waterfront park and improvements to park such as boardwalk
  - » Waterfront: public access must be maintained
- Connectivity
  - » Union Station tunnel discussion
  - » Connectivity slide with bike paths, etc: connecting Olive Street
  - » Hallock Avenue connection: bikes only, no cars or motorcycles
- General
  - » Building heights: keep an eye on it. Higher value for water view over highway, careful not to block views
  - » Rendering of stormwater parks: first concepts needed
  - » PDD vs. Development Deal: high level review required in PDD, less so in development deal
  - » Interest in having housing that is attractive to seniors, mix of moderate income in addition to market rate

# Vision Plan

## Introduction

Long Wharf is comprised of 352 acres, bounded generally by Water Street to the north, New Haven Harbor to the east and Union Avenue to the west and Hallock Avenue to the south. The district is primarily a commercial/industrial section of New Haven characterized by low-density, high value parcels of significant importance to the City's economy. Long Wharf is also a large employment center, currently employing nearly 5,000 people with a wide range of skills. Home to ASSA Abloy and a host of food manufacturers, the Study Area accounts for almost one third of all manufacturing jobs in the New Haven. But also includes businesses in the leading growth sectors, including: ambulatory health care hotels and restaurants. With over 130 acres of underutilized land, there is a potential for denser development of new residential & commercial uses

The study area sits at a key crossroad, at the confluence of water, railway, and highway access to the City. Located next to one of the east coast's major crossroads, the I-95/I-91 interchange, and more visible than any other site in New Haven, Long Wharf forms the first impression to Downtown New Haven. But in

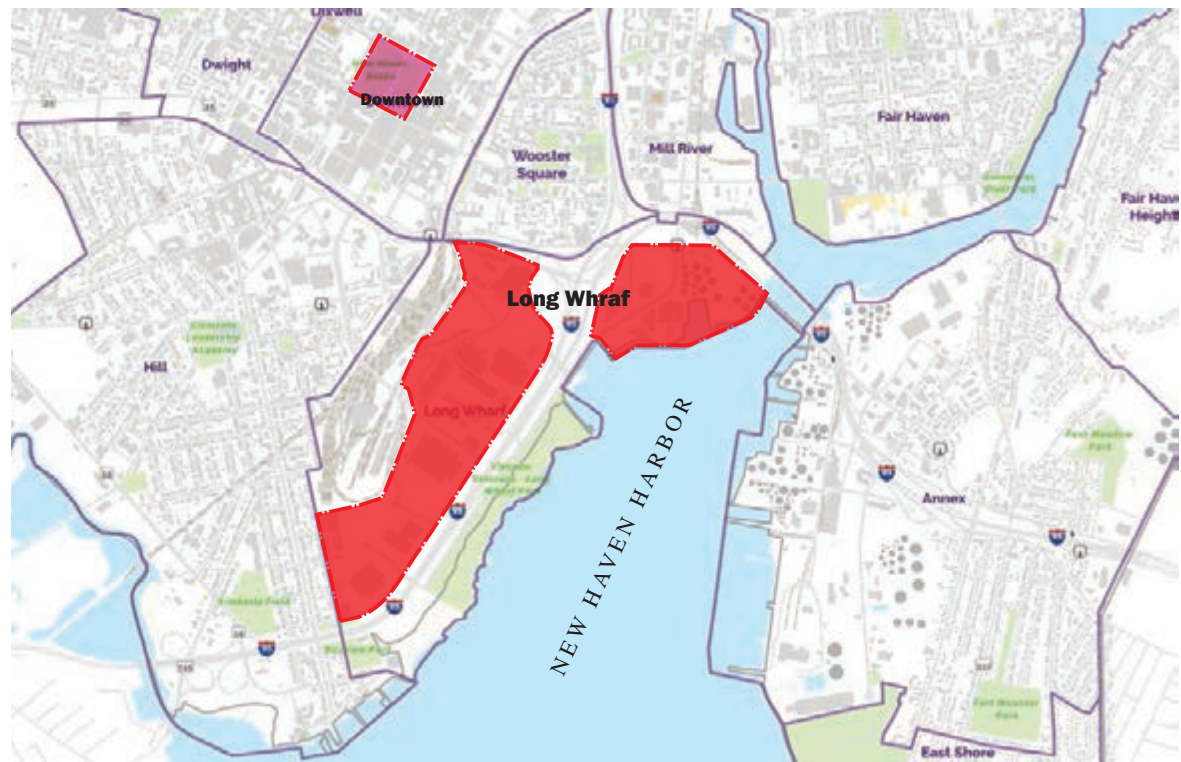


Figure 3. Long Wharf and New Haven Green



contrast to New Haven's historic Downtown, the core Long Wharf areas is dominated by asphalt, without any semblance of a regular street grid and lacks in any sense of scale, or identity.

Paradoxically, it is these qualities that open up the possibility for Long Wharf to provide the kind of choices not available Downtown. This area has the potential to be New Haven's "Innovation District," a place built on smart and resilient public infrastructure, and offering alternate types of environments, and room to grow and change. This is a strategy that many cities have been successful pursued in places like San Francisco's Mission Bay, Boston's Seaport District, and Kendall Square in Cambridge.

Yet, the area faces a series of short and long term challenges. This includes the impacts of climate change and sea-level rise, lack of internal circulation and mobility options, lack of open space or recreational amenities, the deterioration of Long Wharf Park, and buildings that have reached the end of their useful life.

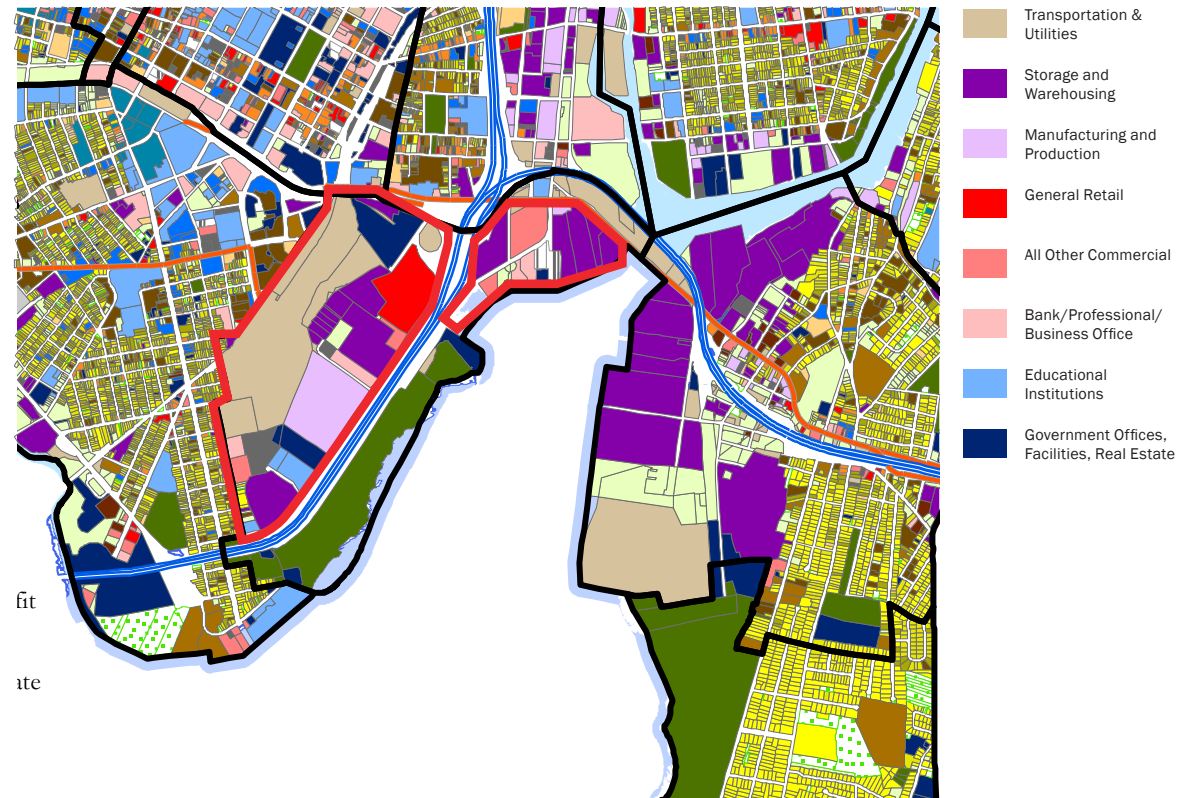
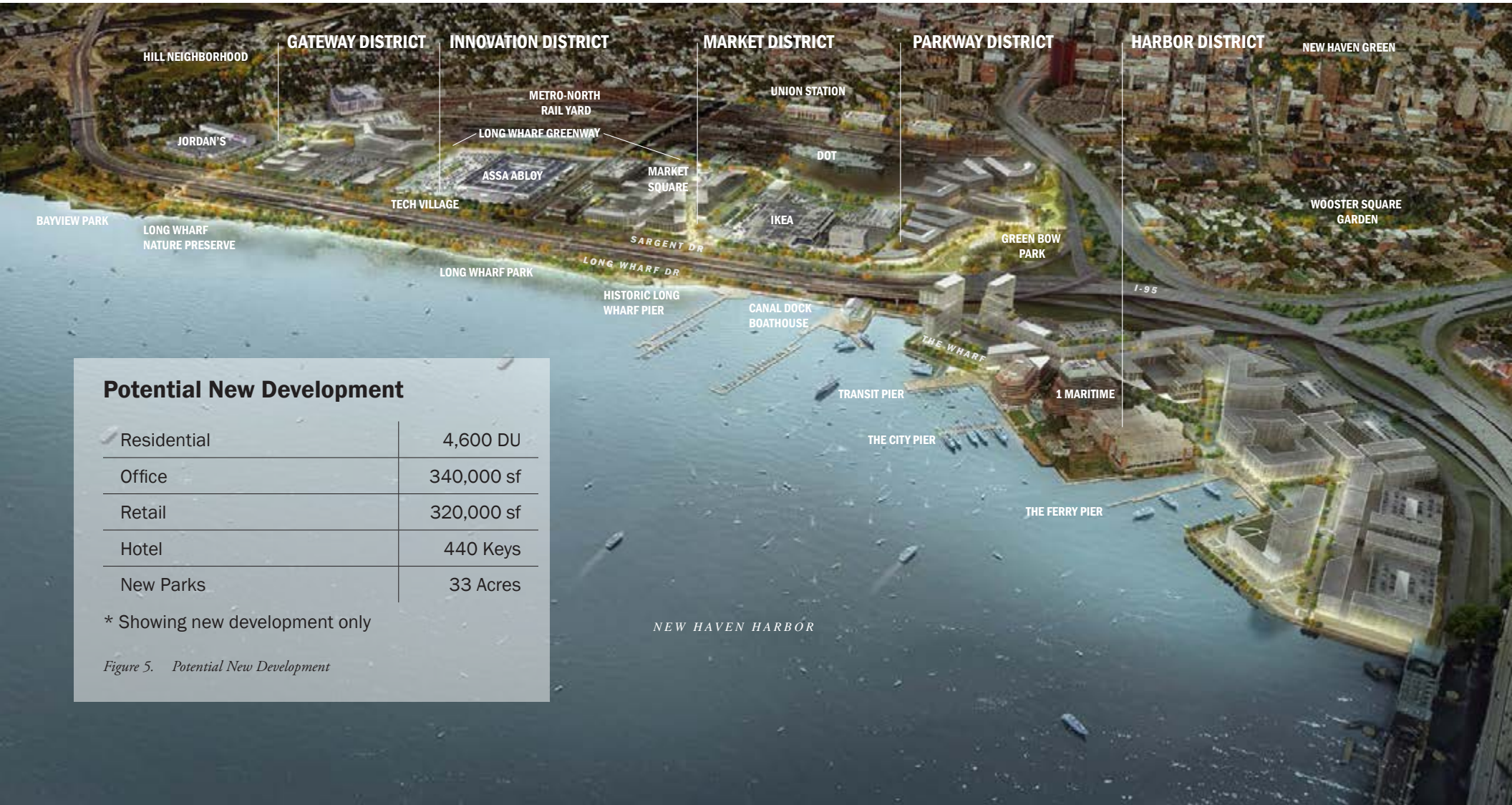


Figure 4. Existing Land Use, City of New Haven 2012



Potential New Development

Residential	4,600 DU
Office	340,000 sf
Retail	320,000 sf
Hotel	440 Keys
New Parks	33 Acres

\* Showing new development only

Figure 5. Potential New Development



## Five Walking Districts

At 352 acres, the Study area is vast, with little sense of scale, or identity. While the Study Area can boast of several major employers and international brands, each of these individual developments sits apart, and on its own. As a result, there is little, if any mutual benefit between uses. The result is a whole that is less than the sum of its parts. The Plan proposes five very different, but complimentary districts. Each district is large enough to function as a neighborhood unto itself, but is encompassed within a five minutes walk. Each district has its own unique opportunities and constraints based on its context, accessibility, and anchors that suggest different development possibilities. Finally, each will be oriented around a “place” (i.e. a public open space defined by one or more buildings) that serve to organize new development and investment. While access to the different part of the study area is via Sargent Drive, the proposed Greenway will form a new multi-modal circulation system linking each district so the study areas functions as a whole.

### All Districts

- Emphasis walking and the reorganization of the large area into 5 different but, complementary districts
- Integrate with and enhance existing assets



Figure 6. Five Walking Districts

- Infill new mixed use development (mostly residential)
- Walkable streets and bike lanes
- Landscape and public open spaces dominate the view and real estate to change the character of the neighborhood
- Focus on “Places” (not projects); at least, one per district
- Market-driven staged private development informed by zoning and design guidelines
- Public infrastructure linked, in stages, to private investments
- Resiliency protection is provided at the Harbor’s edge
- More and improved streets are created, for improved vehicular convenience and circulation



## Key Places

The primary strategy of the Long Wharf Responsible Growth Plan is to create a series of memorable and compelling places for people that can organize both public and private investment, as well as new development. Each place in the five districts of the core Long Wharf area is part of the larger Long Wharf Greenway, while the Harbor District's central place, "the Wharf."

Each place is comprised of a combination of buildings and open space. Each is designed to appeal to a broad range of users, families, young professionals, visitors, with a combination of spaces for active and passive recreation. Each place will provide opportunities for green infrastructure allowing the Greenway to be integrated into the larger stormwater management infrastructure. Finally, investment in the public infrastructure of each place will be implemented together with adjacent development.



Figure 7. Key Places

## Zoning

The majority of the core Study Area in Long Wharf is currently zoned IL (Light Industrial), BE (Wholesale and Distribution), with the smaller areas zoned BA at the Jordan's Furniture site, and RM-1 (Low-Middle Density) in the areas between the New Horizons School site and the residential property owned by Village Suites LLC. The New Haven Village Suites and IKEA sites are Planned Development Districts (PDD). The Harbor District is split between IH (Heavy Industry) District and PDD 53, which encompasses the areas stretching from the Maritime Center to the Long Wharf Pier.

The Plan's approach to zoning is to provide a basis for development in a manner consistent with the City Plan. The zoning strategy is based on flexibility to allow for market-driven development and predictability. This approach encourages development of a wide variety of uses, but in a manner that will create walkable districts. In order to protect existing businesses, existing zoning at the southern corner of the Gateway District, ASSA Abloy, and the Maritime Center would be maintained. Industrial and Business zoning districts would be changed to more flexible zoning districts to accommodate the higher density mixed-use development envisioned by the Plan. This would include rezoning: the state-owned properties presently zone IL at the Gateway District, the Food Terminal sites at the Market District and the USPS site at the Parkway District. The Plan also proposes rezoning the IH district in the Harbor District's IH zoning district to allow for mixed use development.

Zoning Districts	Use	FAR	Maximum Height
BA	General Business	2.0	N/A
BE	Wholesale and Distribution	6.0	N/A
IL	Light Industry	3.0	N/A
IH	Heavy Industry	4.0	N/A
RM-1	Low-Middle Density Residential	N/A	35ft or 3 stories
PDD	Planned Development Districts	Per each PDD	Per each PDD

Figure 8. Zoning Districts in the Study Area

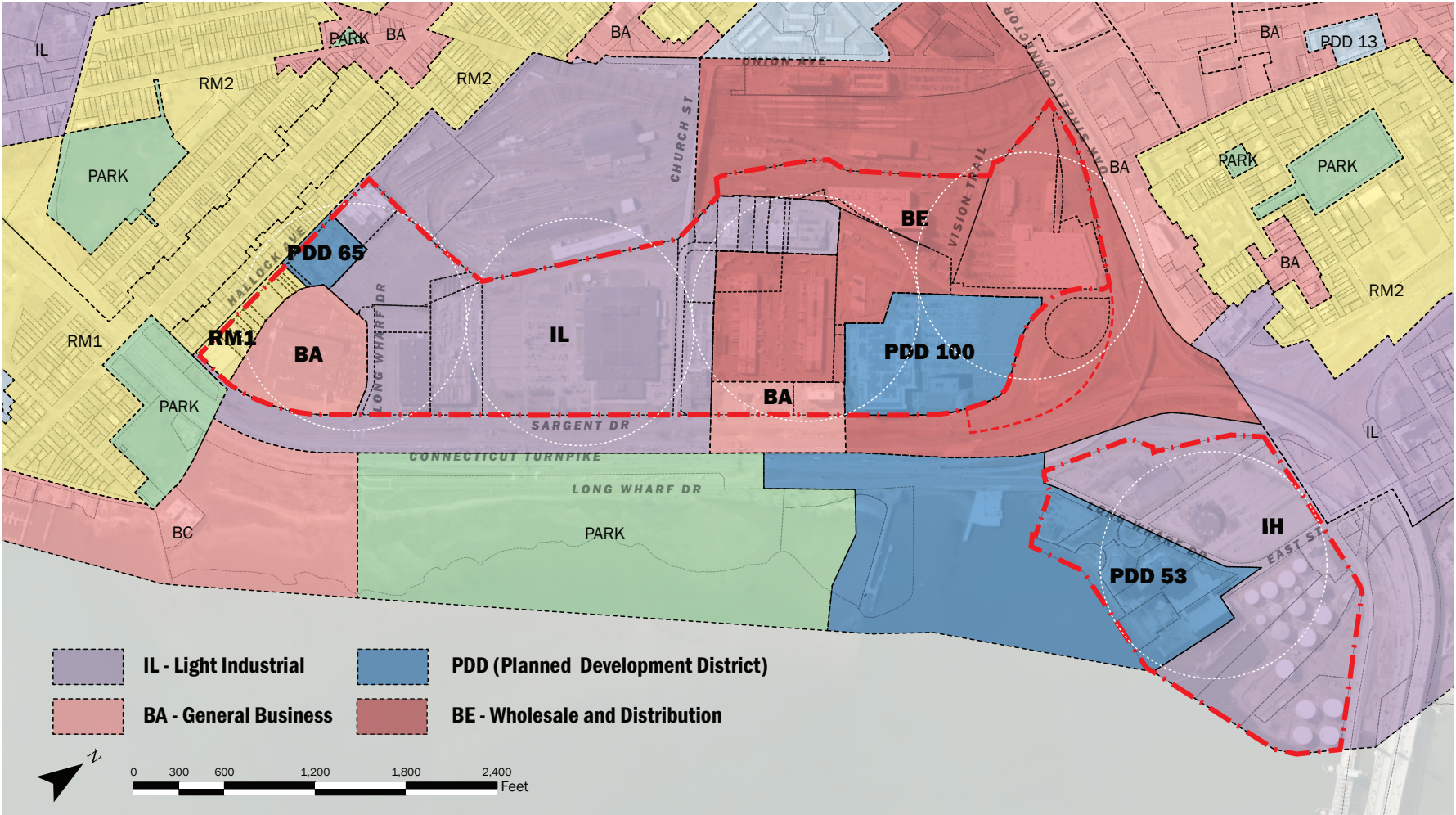


Figure 9. Existing Zoning Map



## New Haven Harbor

New Haven Harbor was central to the founding of the City of New Haven, a fact that is most indelibly etched in historic city maps and images (**Figure 10, Figure 12**) which show the City's original nine square grid built right up to the former limits of the Inner Harbor. The advent of the railroad in the 19th century, and later the construction of I-95 cut the City off from the harbor. However recent initiatives, such as the Food Truck Paradise (**Figure 11**), the state's first cycle track, and New Haven Land Trust programming at Long Wharf Nature Preserve, have helped bring people back to the waterfront. The opening of the Canal Dock Boathouse will help even more people to rediscover the water. The need to address coastal resiliency along Long Wharf Park will require a major rebuilding of the shoreline and provides an opportunity to reenvision and revitalize the Park. A similar opportunity presents itself in the Harbor District.

The Plan seeks to leverage the new boathouse and the need to improve the resiliency of New Haven's coastal edge with a comprehensive vision for the entire west side of New Haven harbor. The Plan promotes New Haven as a major maritime destination in harmony with existing and future improvements to Long Wharf Park,



Figure 10. The 1639 nine-square plan, with the extant New Haven Green at its center

Long Wharf Pier, and the Canal Dock Boathouse. This includes:

- A continuous pedestrian trail extending from the Long Wharf Nature Preserve, to, and through the Magellan Terminal site;
- A new “water plan” including a more intense program for boating activity in the Inner Harbor to complement the new activity spurred by the Boathouse. New boating



Figure 11. Annual Food Truck Festival

activity would include the harbor to a wide range of water-based activities such as boats for education, fishing excursions, dining, and day cruises. This would help residents of not only the nearby Hill District and Wooster Square neighborhoods, but the entire City reengage with the water;

- Improved connections from upland areas in the Gateway District, the Parkway District as well as the Harbor District;



Figure 12. Engraving of New Haven's Harbor in 1786

- A series of “places” by the water that will provide a focus for new development and investment in resiliency infrastructure; and
- A new “post-tank farm” future for the Magellan Terminal that is integrated with the

rest of a revitalized New Haven Waterfront.

A comprehensive approach to the harbor would not only allow for better synergies among the different uses along the water's edge, but also

allow for coordinated funding pursuits, and simplified permitting approach.



A photograph showing a modern building with a glass and brick facade situated on a rocky shoreline next to a body of water. A paved walkway and a metal railing are visible in the foreground.

This map illustrates the proposed Long Wharf Pier and surrounding areas in the Port of Peapack-Gladstone. The pier is shown as a green area extending into the water, with a blue anchor icon indicating a mooring location. Key features include:

- Prop. Vision Trail**: A green dashed line running along the top of the pier area.
- Prop. Fair Haven Trail**: A green dashed line running along the right side of the pier area.
- Prop. Waterfront Recreation Access**: Two blue anchor icons with dashed lines indicating access points.
- Boathouse at Canal dock**: A blue area near the pier.
- Long Wharf Pier**: The main green area of the pier.
- Long Wharf Park**: A green area adjacent to the pier.
- Long Wharf Nature Preserve**: A green area further along the pier.
- The Sound School**: A blue area near the pier.
- West Haven Yacht Club**: A blue area near the pier.
- Prop. Harborside Trail**: A red dashed line running along the bottom of the pier area.
- Prop. West River Trail**: A blue dashed line running along the left side of the pier area.
- Port**: The large body of water area.
- East Shore Park**: A green area near the pier.
- Fort Hole Park**: A green area near the pier.
- Prop. Waterfront Recreation Access**: A blue anchor icon with a dashed line indicating access point.

The map also shows various depth markers (e.g., 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.0, 22.0, 23.0, 24.0, 25.0, 26.0, 27.0, 28.0, 29.0, 30.0, 31.0, 32.0, 33.0, 34.0, 35.0, 36.0, 37.0, 38.0, 39.0, 40.0, 41.0, 42.0, 43.0, 44.0, 45.0, 46.0, 47.0, 48.0, 49.0, 50.0, 51.0, 52.0, 53.0, 54.0, 55.0, 56.0, 57.0, 58.0, 59.0, 60.0, 61.0, 62.0, 63.0, 64.0, 65.0, 66.0, 67.0, 68.0, 69.0, 70.0, 71.0, 72.0, 73.0, 74.0, 75.0, 76.0, 77.0, 78.0, 79.0, 80.0, 81.0, 82.0, 83.0, 84.0, 85.0, 86.0, 87.0, 88.0, 89.0, 90.0, 91.0, 92.0, 93.0, 94.0, 95.0, 96.0, 97.0, 98.0, 99.0, 100.0) and various navigational markers (e.g., buoys, beacons, lights).

Figure 15. Maritime Places, New Haven Harbor



## Water Plan



New Long Wharf Harbor will help stimulate a full range of maritime users that together will promote New Haven as a major maritime destination in harmony with existing / planned Long Wharf Park, Long Wharf Pier and the Canal Dock Boathouse.

- Variety of uses on waterfront:
  - » Recreational
  - » Educational
  - » Transit
  - » Commercial
- Maximize Public Access through improved bike/pedestrian connections
- Create focus for new development opportunities

Figure 16. New Water Plan

## Coastal Resilience

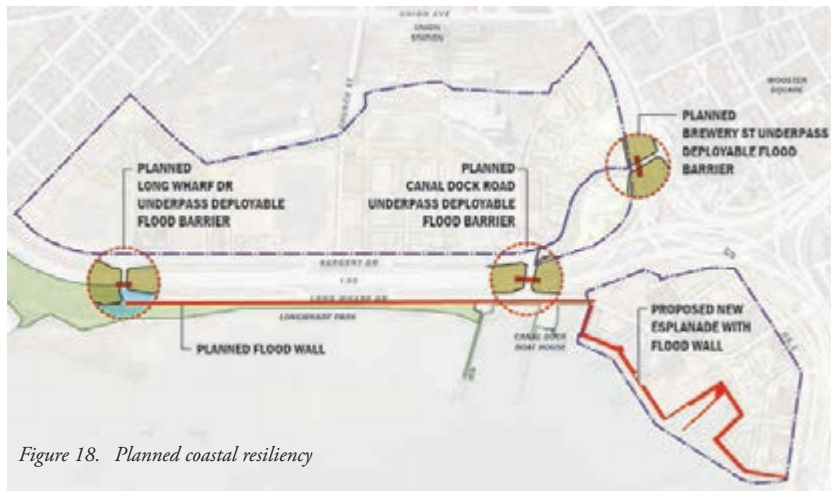


Figure 18. Planned coastal resiliency

The Long Wharf Study Area's long term future is dependent on improving its resilience to coastal, and stormwater flooding. Most of the Long Wharf Study Area is low-lying, with ground surface elevations lower than predicted flood elevations. While I-95's elevated embankment acts as a flood barrier, openings at Canal Dock Road and Long Wharf Drive leave the core Long Wharf Study Area vulnerable to coastal storm surge, which is anticipated to increase with sea-level rise.

The other primary challenge in preparing the Study Area for the effects of climate change will be managing stormwater. With its vast areas of impervious surfaces and minimal drainage infrastructure, stormwater flooding has been a recurring problem in the Study Area. This was seen most recently in April 2018. With the increased incidence of major precipitation events anticipated due to climate change, this problem will only become more acute in the period ahead.



Figure 17. FEMA Flood Insurance Rate Map Flood Hazard Zones and Base Flood Elevations





Figure 19. The Battery, Charleston, SC

The Responsible Growth Plan incorporates the recommendations included in the March 2017 Long Wharf Flood Protection study commissioned by the City Plan Department. The plan included a combination of Living Shoreline, shoreline protection, and flood protection features for the Long Wharf shoreline between the Vietnam Veterans Memorial and the Canal Dock Boathouse. The Responsible Growth Plan proposes extending this line of protection by raising the existing bulkhead that runs along the shoreline between the Boathouse and the Magellan Terminal. This continuous barrier can be integrated with the new wharf proposed for the Harbor District as an elevated pedestrian walkway, similar to the barrier found along the Battery in Charleston, South Carolina, this not only helps provide protection against storm surge, but also provides a popular esplanade for both residents and visitors to enjoy the Harbor.



Figure 20. Flood Mitigation Concept (Long Wharf Flood Protection Plan, City of New Haven 2017)



The Plan proposes a strategy of integrating an expanded collection system with the parks and roadways of the Long Wharf Greenway to improve the Study Area's ability to manage stormwater. This will leverage public infrastructure investments to create multiple benefits, including recreational and open space amenities as well as new drainage infrastructure, and expanding the range of potential funding sources. This follows the example of the Fens and Riverway in Boston's "Emerald Necklace", which was created to address flooding and water quality of the Boston's Back Bay tidal flats.



Figure 21. "Emerald Necklace" Back Bay Fens Park, Boston, MA

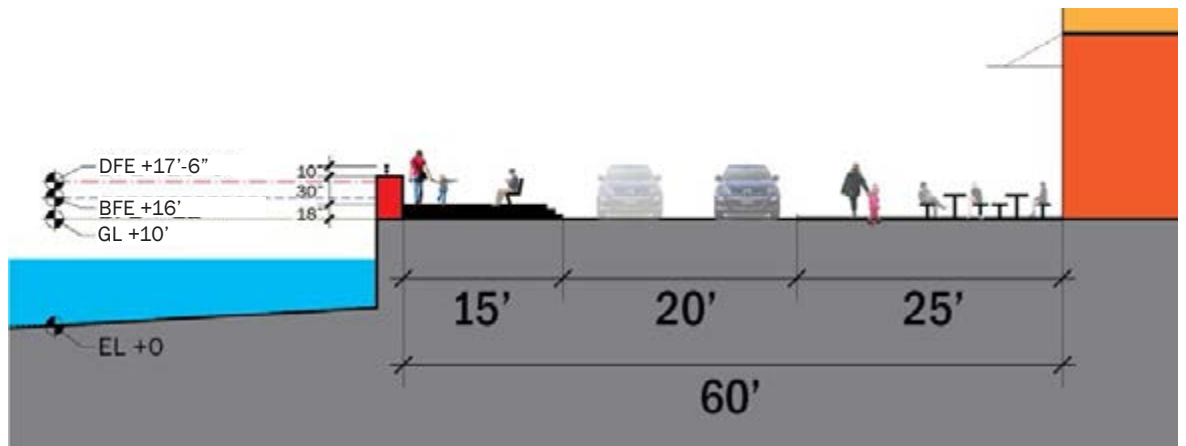


Figure 22. Section of Enhanced Long Wharf with the Elevated Walkway as a Flood Protection



Figure 23. The New Long Wharf in the Harbor District with Elevated Walkway



## Harbor District

### Current Reality

The Harbor District is circumscribed by the I-95 viaduct, as it bends toward the Pearl Harbor Memorial Bridge and New Haven Harbor and organized around Long Wharf Drive. It is made up of three different areas:

North of Long Wharf Drive, which is dominated by the large concrete rotunda housing Sports Haven, its 10-acre parking lot, and two smaller industrial buildings; the area to the South includes One Maritime Center, a 407,000 SF commercial office complex, and a waterfront seafood restaurant; East is the Magellan Terminal “tank farm” which has its own dock. At 57 acres, the Harbor District is large enough to encompass an entire urban



Figure 24. Existing Harbor District



Figure 25. 545 Long Wharf Drive



Figure 26. One Maritime Center (555 Long Wharf Drive)



Figure 27. Sports Haven

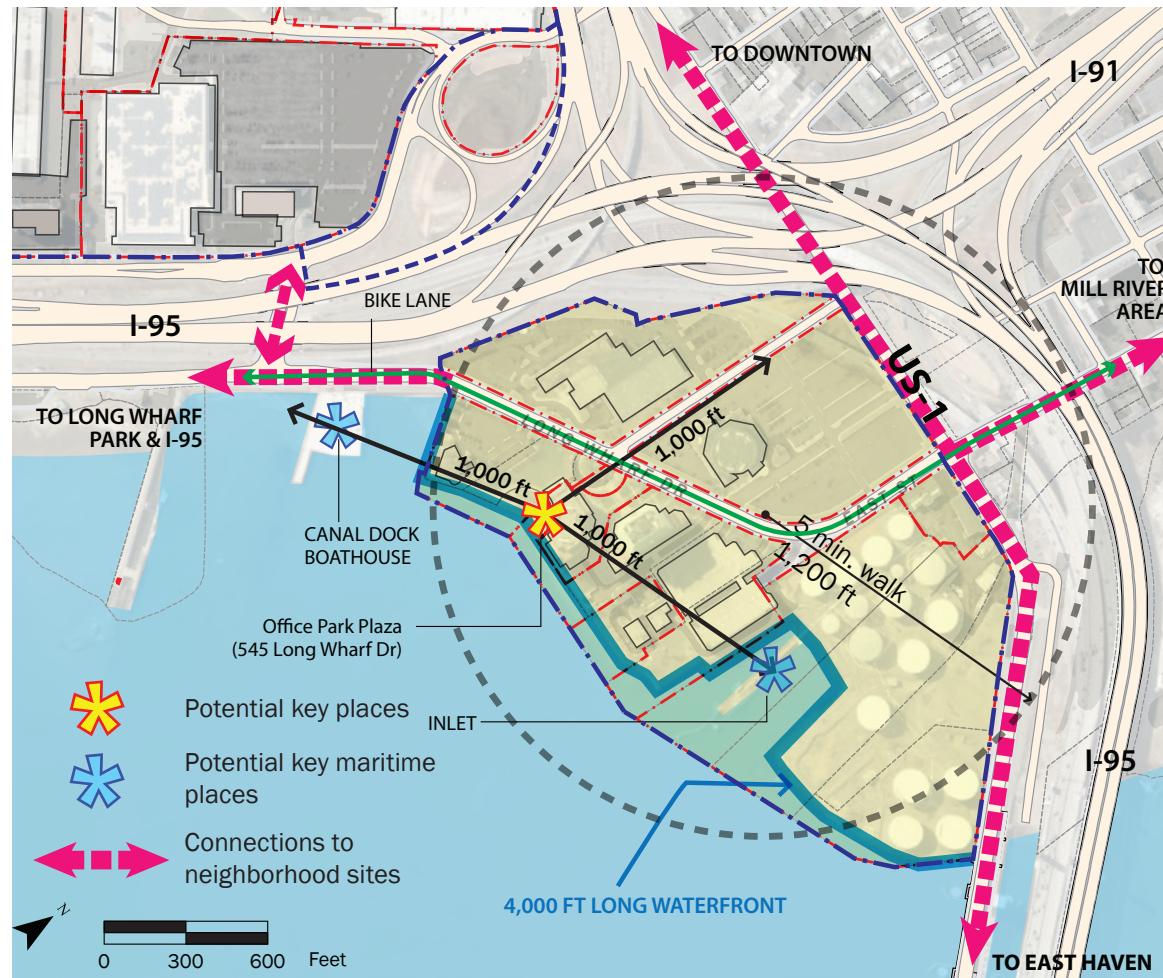
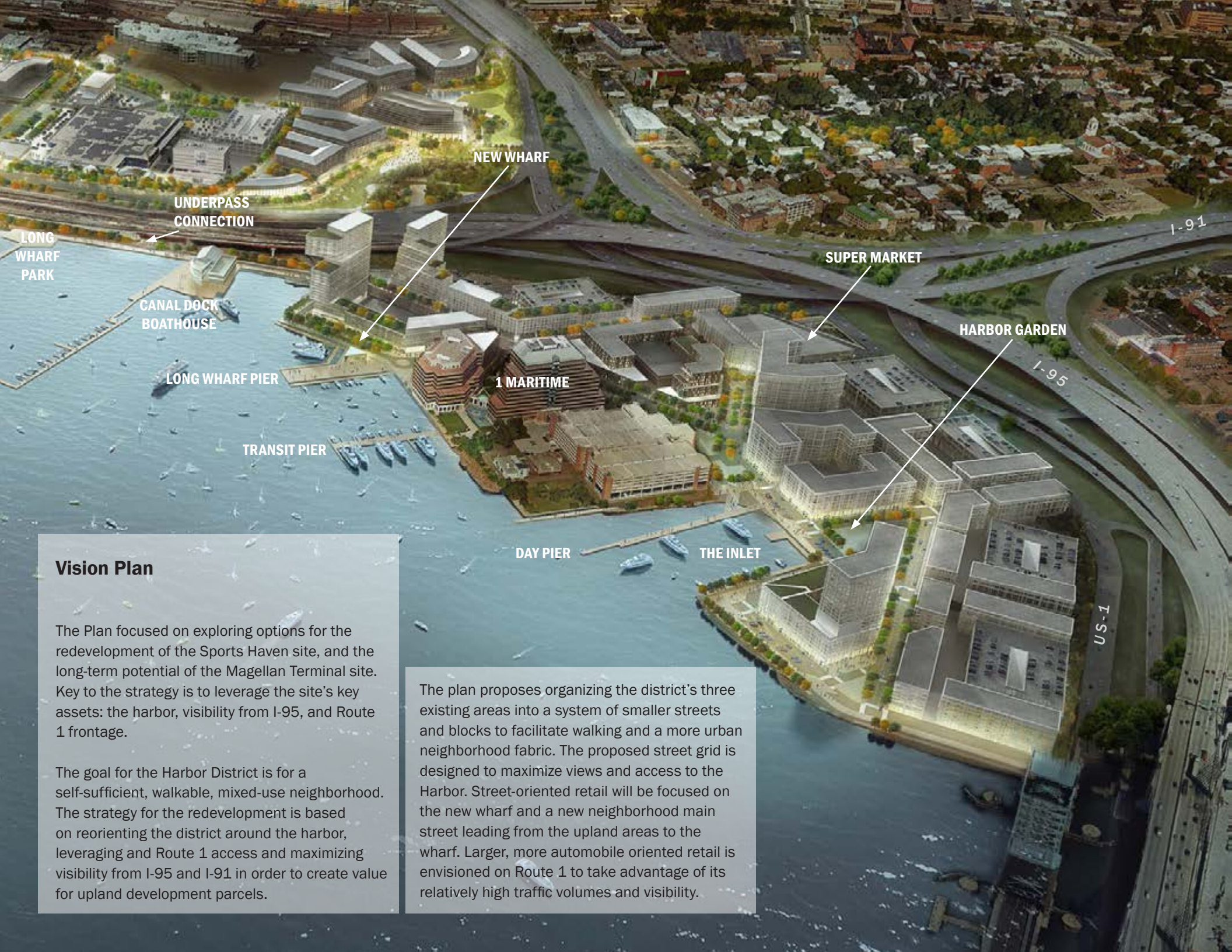


Figure 28. Creative Analysis: Existing Harbor District

neighborhood in its own right, but sits in relative isolation from the rest of the City. The Harbor District today is a collection of uses that derive little mutual benefit from each other.

Yet, the Harbor District is the City's only district with direct access to the water. With a location on the New Haven Harbor directly across from a very active Port, adjacent to the new Canal Dock Boathouse, and the Long Wharf Pier, the water is this district's singular feature. The Harbor District has the potential to be New Haven's "Inner Harbor," a major mariner's destination, focused on water-oriented activities. The potential for new uses around and in the water immense.





## Vision Plan

The Plan focused on exploring options for the redevelopment of the Sports Haven site, and the long-term potential of the Magellan Terminal site. Key to the strategy is to leverage the site's key assets: the harbor, visibility from I-95, and Route 1 frontage.

The goal for the Harbor District is for a self-sufficient, walkable, mixed-use neighborhood. The strategy for the redevelopment is based on reorienting the district around the harbor, leveraging and Route 1 access and maximizing visibility from I-95 and I-91 in order to create value for upland development parcels.

The plan proposes organizing the district's three existing areas into a system of smaller streets and blocks to facilitate walking and a more urban neighborhood fabric. The proposed street grid is designed to maximize views and access to the Harbor. Street-oriented retail will be focused on the new wharf and a new neighborhood main street leading from the upland areas to the wharf. Larger, more automobile oriented retail is envisioned on Route 1 to take advantage of its relatively high traffic volumes and visibility.



The key strategy for the revitalization of the harbor is increasing maritime activity with new docks for a variety of commercial and recreational boating activity. More intense programming of the water side will help the district leverage its most unique asset and attract people and increase the value of the upland parcels. The plan proposes a new wharf as a new place for people and setting for development. The wharf is envisioned as a place for restaurants, where people can come to stroll and enjoy the views out to the water, and the bustling activity of an active harbor.

To address the anticipated sea-level rise and increased frequency of storm surge, the wharf will feature a raised walkway along the perimeter, integrating recreational and open space improvement with flood protection infrastructure.

Residential	2,700 DU
Office	41,000 sf
Retail	191,500 sf
Hotel	116 Keys
Shared Structured Parking	1,166 Cars

Figure 29. The Harbor District Development Program

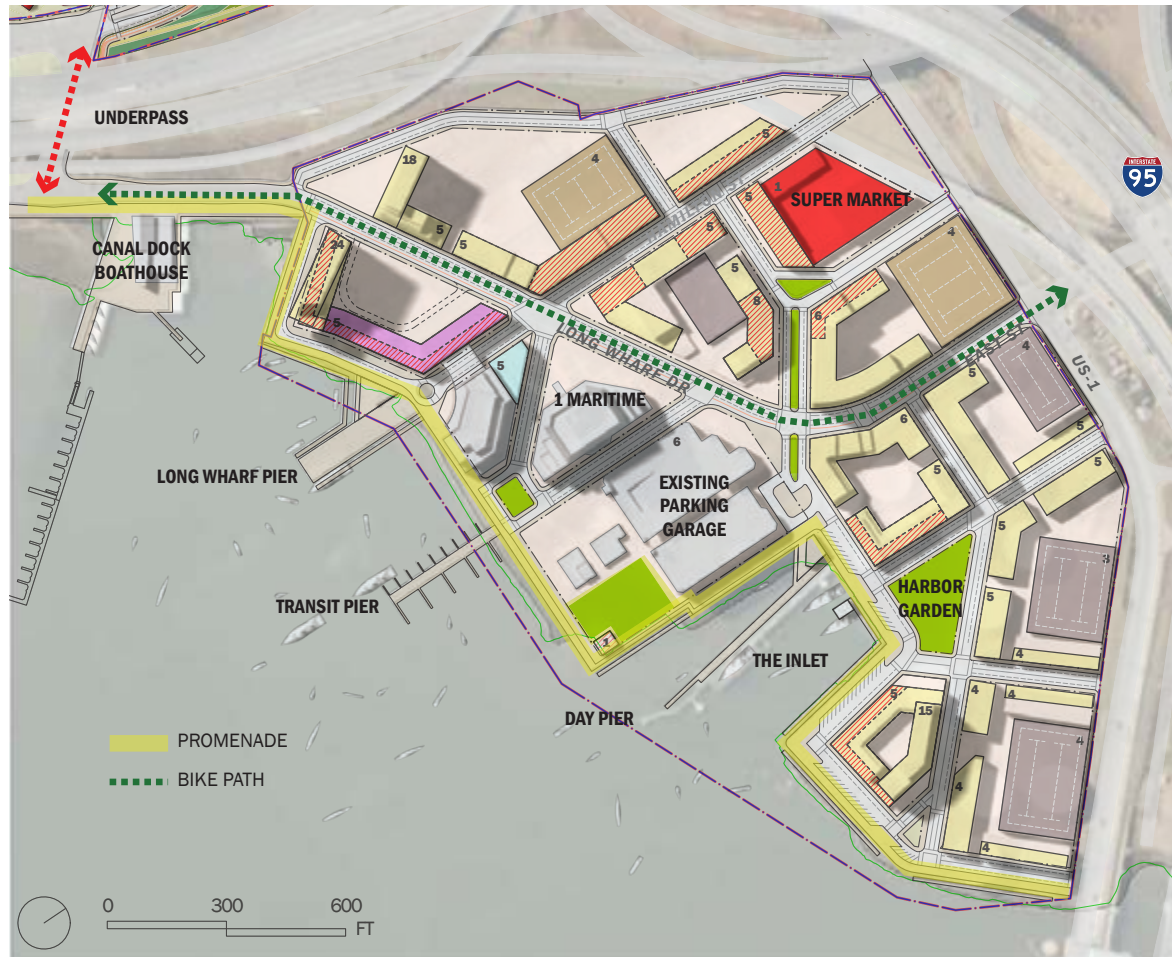


Figure 30. Vision Plan: Long Wharf Harbor District



## Parkway District

### Current Reality

The Parkway District is comprised of three main areas: a large USPS Sorting facility, the New Haven IKEA store, including the vacant former Pirelli Headquarters, and a large area of state-owned land adjacent to I-95. The Parkway District is strategically located at the northern end of the Long Wharf Study Area, closest to Wooster Square, but has no direct connection to the adjacent neighborhood. The IKEA store follows the typical development pattern of IKEA stores throughout the U.S., with a large freestanding building sitting within a large surface parking lot. However IKEA senior management has recognized the benefits of having other, more intense uses around it to bring more foot traffic to the store.

The area's future is affected by IKEA's ongoing plans to redevelop the Pirelli Building, and the uncertainty related to the USPS's long term plans for remaining in its current facility given the longer term trends that have resulted in downsizing of similar USPS sorting facilities throughout the region.



Figure 31. Existing Underpass from the Parkway District to Waterfront

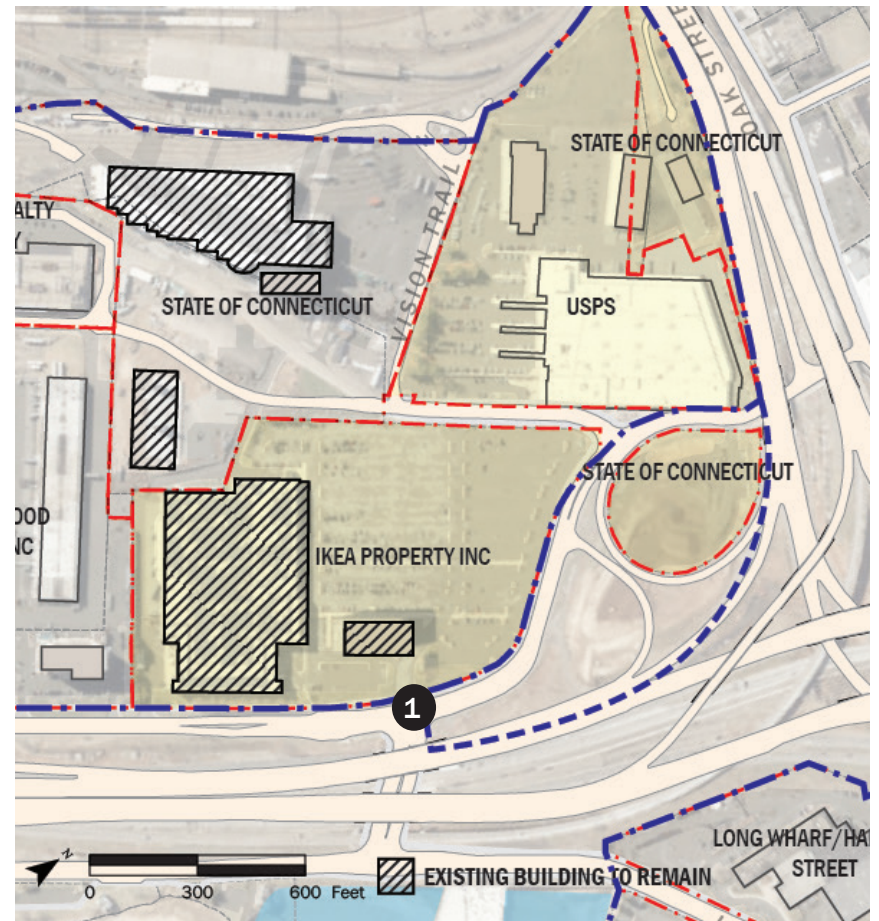


Figure 32. Existing Parkway District Site

## Strategy

- Create new sites for major parks which can attract new residential development
- New Vision for USPS site
- Establish link to Wooster Square Neighborhood



Figure 34. Park and Development - Emerald Necklace Park, Boston, MA

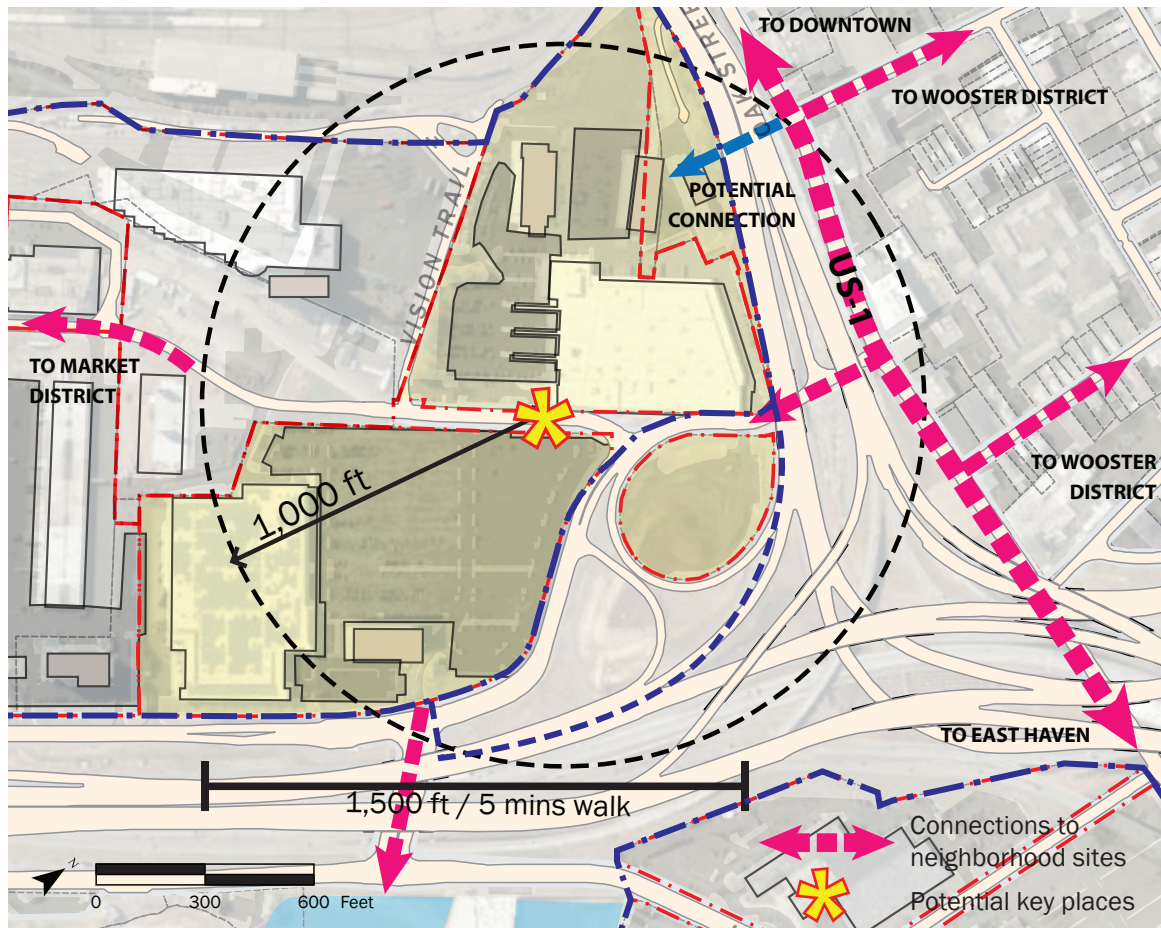


Figure 33. Creative Analysis: The Parkway District



## Vision Plan

The Plan envisions repositioning the Parkway District's existing, relatively marginal, land uses as a new mixed-use residential neighborhood with improved and additional links from the Harbor through to the Wooster Square neighborhood and Downtown.

Central to the realization of this vision is the transformation of the land along I-95 controlled by DOT and USPS into a new park. This will depend on release of relevant parcels by DOT and USPS vacating their existing facility. The new "Green Bow Park" will create a setting for new development, serve as a buffer to the highway. The new park, which will anchor the eastern end of the Long Wharf Greenway will also serve as the spine connecting Wooster Square with this neighborhood, much as Boston's Emerald Necklace connects the Fenway/ Kenmore, Mission Hill and Jamaica Plain neighborhoods in Boston.

The Plan for the Parkway District includes a new and improved front entry to the rail yards to provide direct connection to Route 1 (Water Street). Close cooperation with DOT will be required to coordinate with recent expansions to the rail yard. This will not only improve access for DOT service vehicles and employees, but also opens-up the potential for one continuous neighborhood, extending the Wooster Square neighborhood, and by extension, Downtown, into the parkway district and through to the harbor.

The northern part of the park will set the stage for four blocks of residential development on the western side of the USPS property. The southern end of the park, defined by the bend of the Route 34 exits on I-95, will provide the focus of new residential development on the eastern end of the IKEA parking lot. A new parking garage on the IKEA parking lot, necessary to support the adaptive reuse of the Pirelli Building, will also free-up the land for this new development.



Figure 35. Vision Plan: The Parkway District





Residential	936 DU
Retail	34,600 sf

Figure 36. The Parkway District Development Program



## Market District

### Current Reality

The Market District is comprised of three parts: New Haven Food Terminal, large block north of the Church Street Extension, and Yale New Haven Medical Office Building. The New Haven Food Terminal, a 20-acre site contains a mix of uses, including meat packing, restaurants, and the Long Wharf Theatre. These businesses are housed in two long linear buildings facing a large surface lot and loading apron, all constructed as part of the 1960s era of urban renewal of the City's wholesale food market near Union Station. The south side of the parcel contains a hotel, bank and gas station. With changes in the regional market and federal food safety regulations, the coop which controls the Food Terminal is exploring redevelopment options.



Figure 37. Existing Market District



Figure 38. New Haven Food Terminal



Figure 39. IKEA and Pirelli Building



Figure 40. Long Wharf Theatre

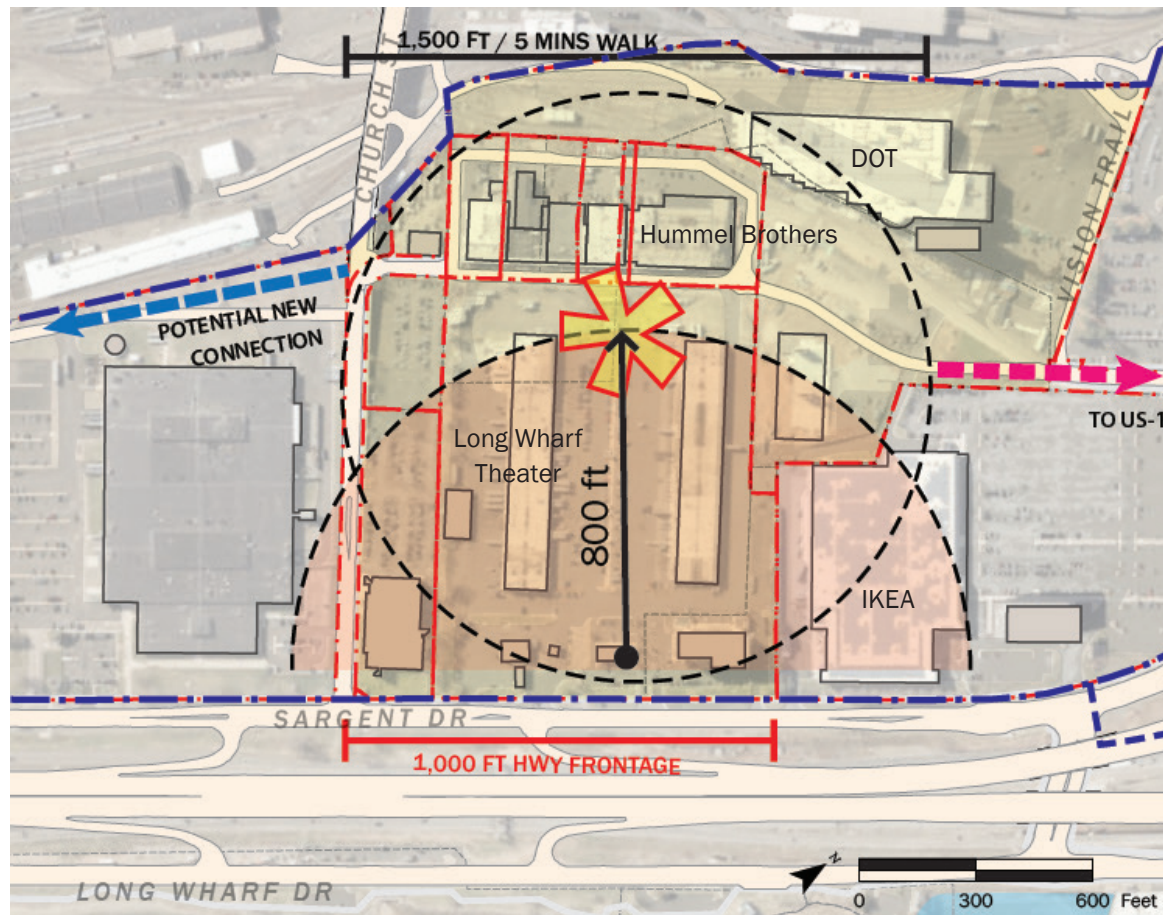


Figure 41. Creative Analysis: The Market District

The block north of the Church Street Extension contains a mix of food-related and entertainment businesses. It is anchored by Hummels Brothers, a major area meat processing business with its own on-site deli.

- Retain food market and theater as key building blocks of a new district
- Maximize views of the water
- Maximize visibility from I-95
- Establish new connections to adjacent properties



Figure 42. Market Hall, Granville Island, Vancouver, Canada



## Vision Plan

The plan envisions the Market District as a walkable urban district focused around a main street, a market hall, and market square. Development will be organized around a main street leading out to Sargent Drive. In order to retain the presence of food, which is part of the history of the Long Wharf District, the plan proposed a new, free standing market hall, showcasing locally sourced food. The Market Hall will not only provide a unique amenity to help create value of residential development, but will be able to establish an authentic brand that is associated with the identity and history of the area. The Plan for the Food Terminal parcel is flexible, to accommodate a wide range of variables. Tenants with long term leases such as La Quinta can be phased incrementally. As new development absorbs the district's unbuilt areas, and attracts more people, the plan envisions a new multi-level garage on the north side of the Yale New Haven property.

The plan accommodates two anchors that have been and continue to be central to the area's identity: Hummel Brothers and Long Wharf Theater. The latter can continue to play a central role; as a new facility that can be integrated into the larger redevelopment of the parcel in a new location along Sargent Drive with enhanced visibility from I-95, or a renovation of its existing space.



Figure 43. Vision Plan: The Market District





LONG WHARF  
GREENWAY

LONG WHARF  
THEATER

MARKET  
SQUARE

MARKET

HUMMEL  
BROTHERS

UNION STATION

DOT

PARK ENTRY

BREWERY ST

IKEA

PIRELLI  
HOTEL

SARGENT DR

LONG WHARF PARK

Residential	754 DU	95
Retail	55,000 sf	
Hotel	324 Keys	
Shared Structured Parking	1,663 Cars	

Figure 44. The Market District Development Program





Figure 45. Long Wharf Theatre and Food Terminal



Figure 46. Market Square and Long Wharf Theatre







## The Innovation District

### Current Reality

The Innovation District is dominated by ASSA Aboy, one of the largest employers in the district. The site has excellent visibility, but isolated from the other uses.



Figure 47. ASSA Aboy Site Entrance



Figure 48. ASSA Aboy Front Yard

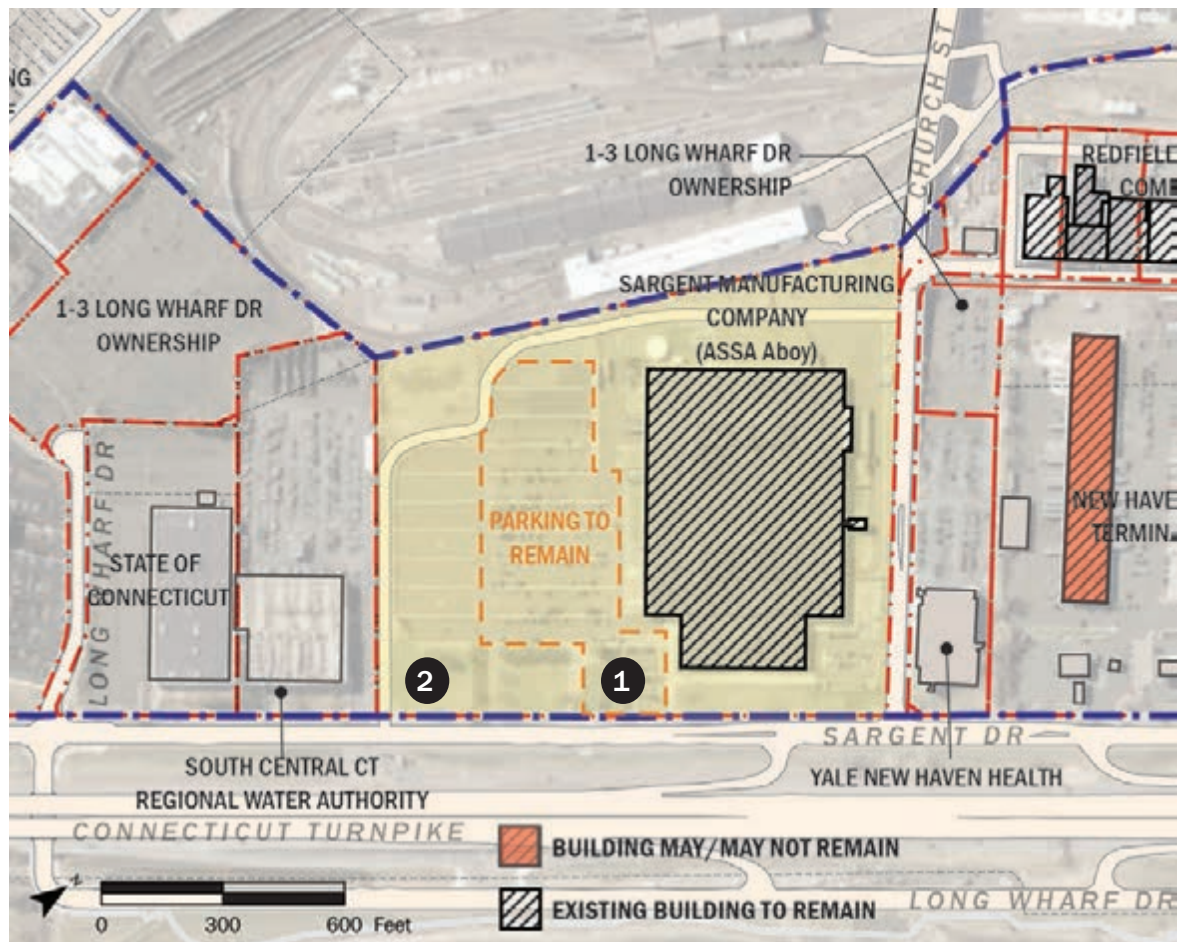


Figure 49. Existing Condition : The Parkway District

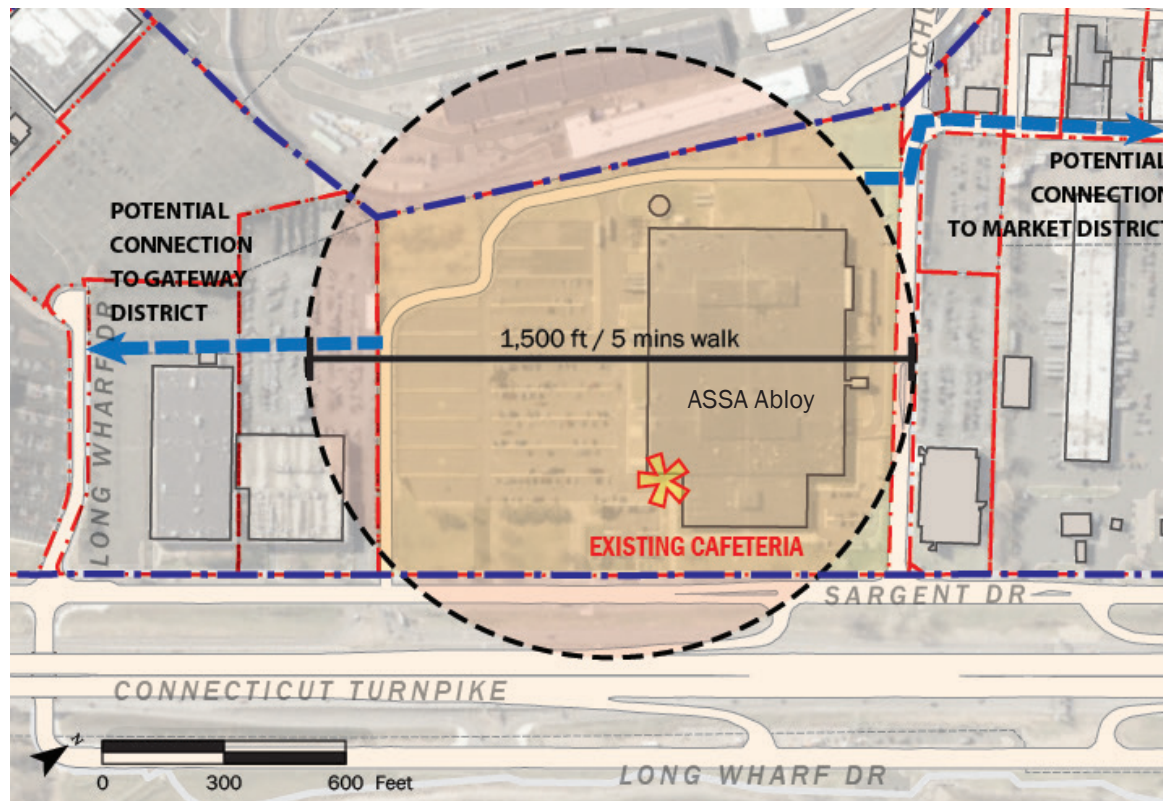


Figure 50. Creative Analysis : The Parkway District

- Utilize front yard of ASSA Abloy site
- Connect and vitalize existing ASSA Abloy cafeteria to The Gateway District
- Maximize use of underutilized parking lot
- Add more permeable surface and landscape



## Vision Plan

The goals for the Innovation District are twofold: provide better connectivity between the district and the rest of the Study Area, and provide a setting for other complementary uses that will allow ASSA Abloy to continue to thrive in Long Wharf. To improve the areas' connectivity with the rest of the district and provide an open space and recreational amenity for ASSA Abloy's employees, the plan envisions the Greenway extending across the northern end of the district, providing a link to the Gateway District, and the Market District beneath the Church Street Bridge. On the west side of the district is a lightly used portion of the ASSA Abloy parking lot. The plan envisions an "Innovation Park", with smaller pop-ups, pavilions and incubators that can provide space for start-ups associated with ASSA Abloy and/or showcase ASSA Abloy products.

Office	73,800 sf
Light Industrial	334,200 sf

Figure 51. The Innovation District Development Program



Figure 52. Existing Condition: ASSA Abloy / The Innovation District





DOT RAIL YARD

LONG WHARF GREENWAY

TECH VILLAGE

ASSA ABLOY

SARGENT DR

I-95

CHURCH ST



## The Gateway District

### Current Reality

The Gateway District is bordered by the MetroNorth Rail Yards to the north, Sargent Drive to the south, and the Hill Neighborhood to the west. It is made up of three different areas. The area to the North adjacent to the Hill Neighborhood, but is not directly connected to that neighborhood. This area is dominated by One Long Wharf, a 287,000 SF Medical Office Building and New Haven Village Suites. Jordan's Furniture anchors its southern end and enjoys high visibility from I-95. The third area is occupied by vacant single story building formerly occupied by Gateway Community College, and the South Central Connecticut Regional Water Authority which houses office and service facilities. The Gateway District enjoys superb access from and to I-95, but has only one way in and out. Its large areas of surface parking dominate the area's landscape, but also offer potential for future development.



Figure 53. Jordan's Furniture

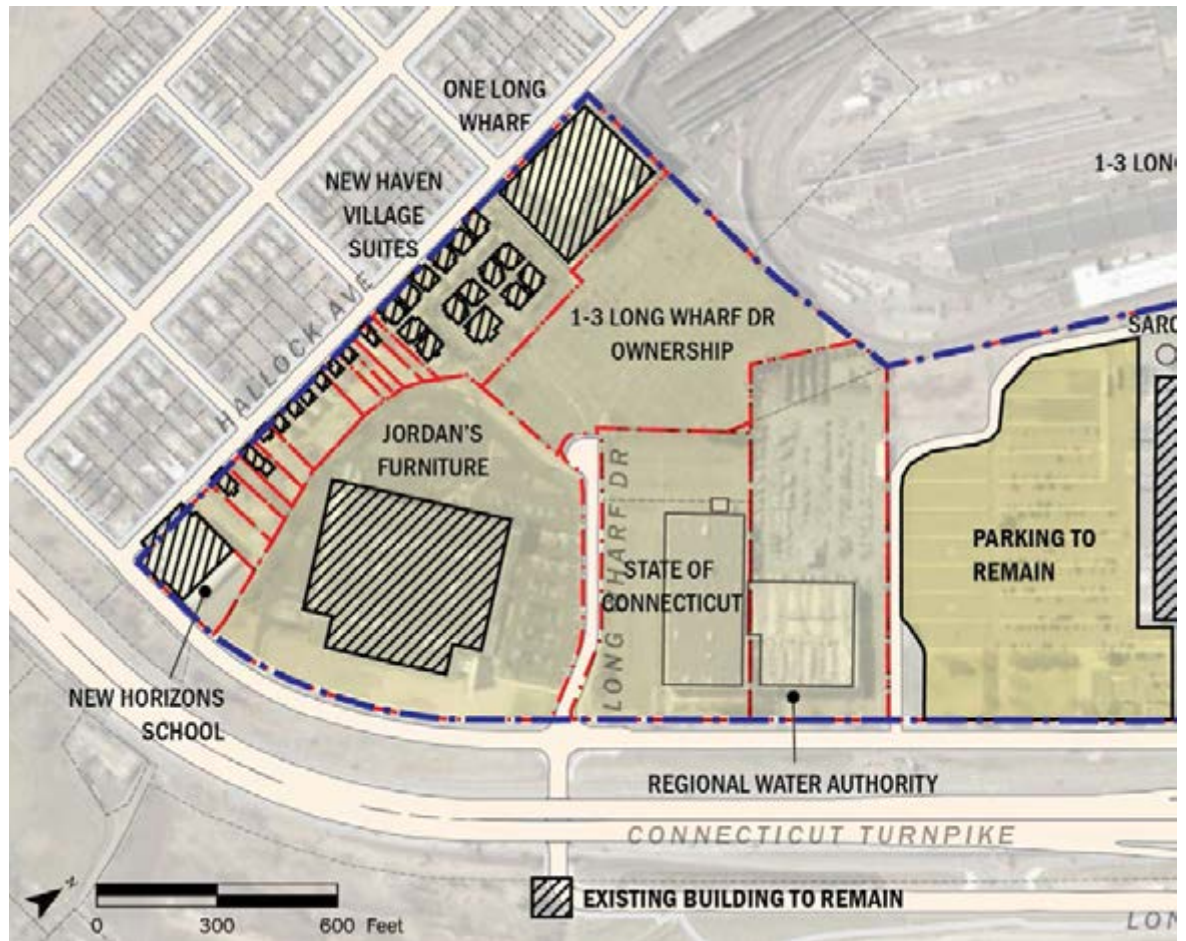


Figure 54. Existing Properties: The Gateway District

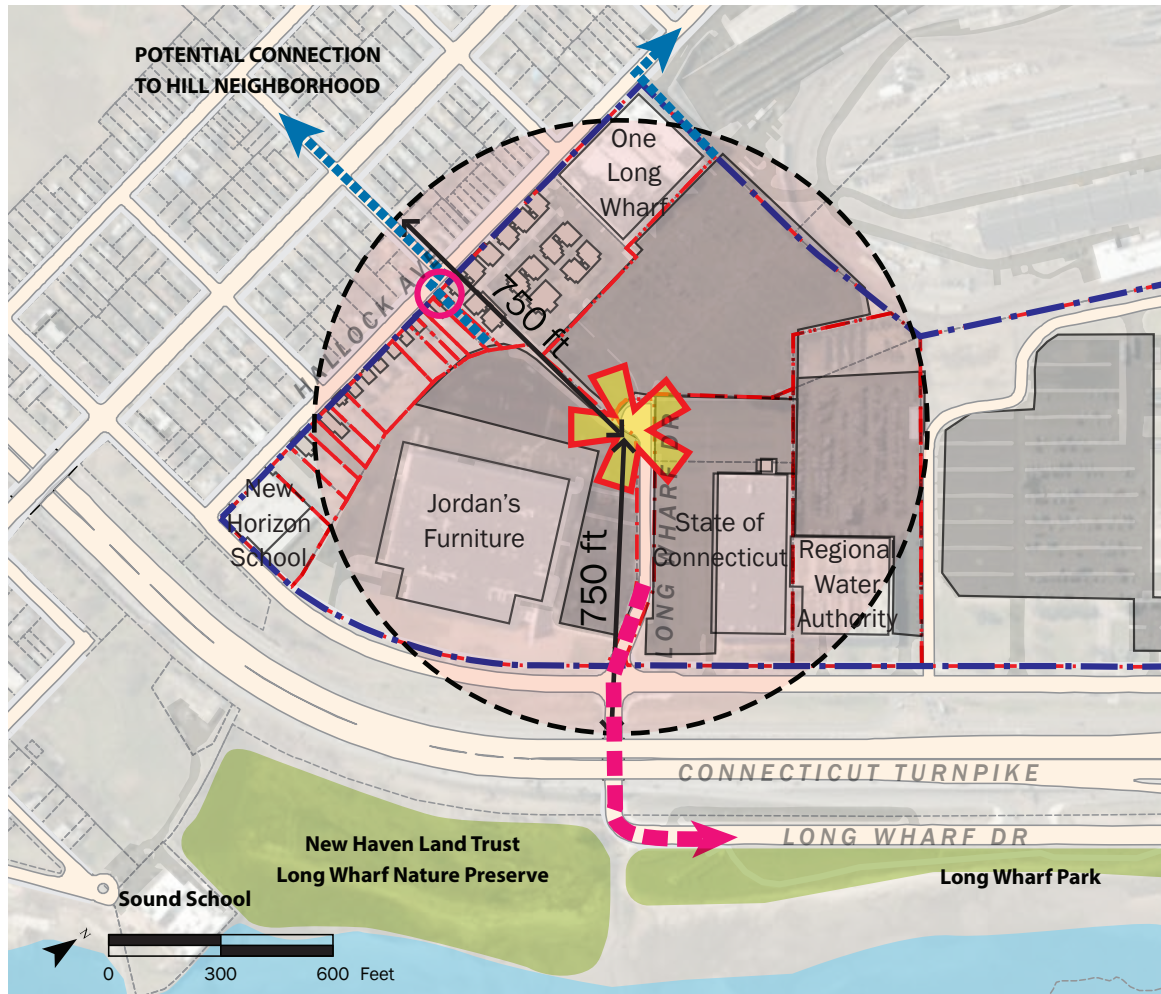


Figure 58. Existing Condition: The Gateway District



Figure 55. One Long Wharf



Figure 56. Underpass to Long Wharf Park



Figure 57. Long Wharf Nature Preserve



## Vision Plan

The Vision for the Gateway District focuses on broadening district's mix of uses and expanding access to the district. The Plan leverages the health, wellness, and family recreational destinations, presently located in the district while creating an improved setting for new development.

Key to the vision will be the extension of the Long Wharf Greenway along the northern edge of the district. The Greenway will provide a multi-modal connection to both the Hill Neighborhood and the Gateway District as well as Sargent Drive and Long Wharf Park. It will also provide a central place for gathering and a recreational resource for the District's current workers and future residents, and current residents of the Hill Neighborhood, anchoring the west end of the Long Wharf Greenway. Finally, the Greenway will establish a setting for new development on the superblock presently occupied by the Regional Water Authority and the vacant Community College building which is large enough to accommodate a major mixed use development.

To accommodate new development, including medical office space, the plan envisions a new multi-level parking garage on the south side of the One Long Wharf parking garage lot.



Figure 59. Vision Plan : The Gateway District - The Long Wharf Greenway will provide the central gathering place for the Gateway District and is envisioned as a family-oriented garden for the district's current workers, future residents, and current residents of the Hill Neighborhood





Residential	264 DU
Office	226,000 sf
Retail	38,900 sf
Shared Structured Parking	526 Cars

Figure 60. The Gateway District Potential New Development





*Figure 61. One Long Wharf Drive*



*Figure 62. Bioswales and bike trails at the intersection of Family Park and Linear Plaza in Long Wharf Greenway*







## Green Space Programming Concept

While all the open space will be connected together by pedestrian and bicycle trails, the new districts provide an opportunity to complement and enhance the building programs with different types of activities in the open space to produce a diverse and engaging community.

### The Gateway District

The mixed use character of this district, focusing on health and wellness and including new housing, creates the idea of the open space providing family centered programming. Open lawns for games, gardens with small play areas for toddlers and older children, as well as waterplay areas will be interspersed with native plant meadows, woodlands, and bioswales.

### The Innovation District

The Innovation District situates technology oriented office space in intimate open spaces oriented to young professionals. Art will be integrated into the campus landscape with cafes, spilling from building ground floors. Small festivals can be accommodated in the flexible spaces adjacent to buildings. A buffer to the rail yard will enhance views from the bike trail through this area with the storm water management incorporated throughout.

### The Market District

The Market District is an informal network of pedestrian and shared streets including Market Square and Market Street. Event and performance space merges with outdoor seating areas and temporary market space to enliven the district for special occasions. The Lawn, in Greenway is a flexible outdoor green space, able to be used for a variety of planned and unplanned activities.

### The Parkway District

The Parkway District includes 1000 units of residential clustered with neighborhood parks and a new community park, “the Green Bow”. The Green Bow is a passive ecological park for strolling through a varied landscape and connects with the bike trail and elements of the “Greenway park” to create an address for the new residential areas. It also contributes to the storm water management for the project.

### The Harbor District

The Harbor District is focused on the waterfront. A promenade connects Long Wharf Park to the various main spaces of the district including Main Street, The Inlet and Harbor Green. Main Street connects the upland areas north of Long Wharf Drive to the harbor. The landscape enhances the unique character of the waterfront edge and incorporates diverse experiences, including get downs, soft and hard edges and the boating activity of the Inlet.

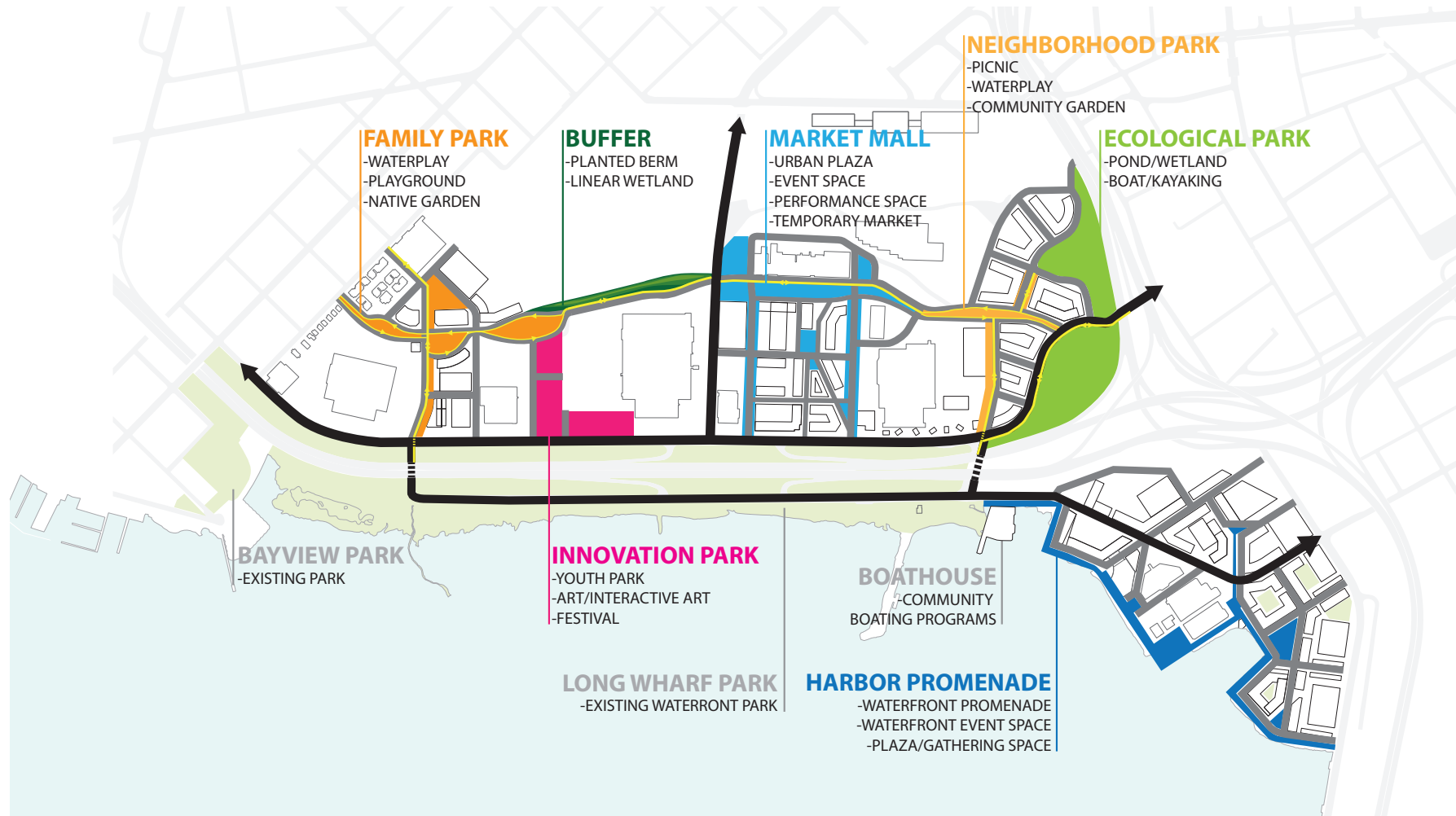


Figure 63. Green Space Programming Concept



## Four Typologies of Storm Water Management

Stormwater management regulations require that the first one inch of rain be able to be stored on site. For this entire project, not including the Harbor District, that would equal to 630,000 cubic feet of water.

This design collects storm water in excess of the required amount, with 757,060 cubic feet collected in total, west of I-95.

As shown on the adjacent map, this collection system is integrated with the parks and roadways of the project. The bioswales vary in width, depth and design in relation to the space available and are divided into four types based on size.

1. Complete streets with bioswales on both sides of the roadway collect approximately 45,950 cubic feet of water from the site. These bioswales are relatively narrow (10 feet wide) and approximately 1.5 feet deep.
2. These 20 foot wide bioswales are typically on one side of a roadway as space allows. They are 20 feet wide and 3 feet deep.
3. These large-scale bioswales capture the majority of the rainwater on the site. They are typically 40 feet wide and three feet deep.
4. This optional dry pond can collect an additional 54,000 cubic feet if desired.

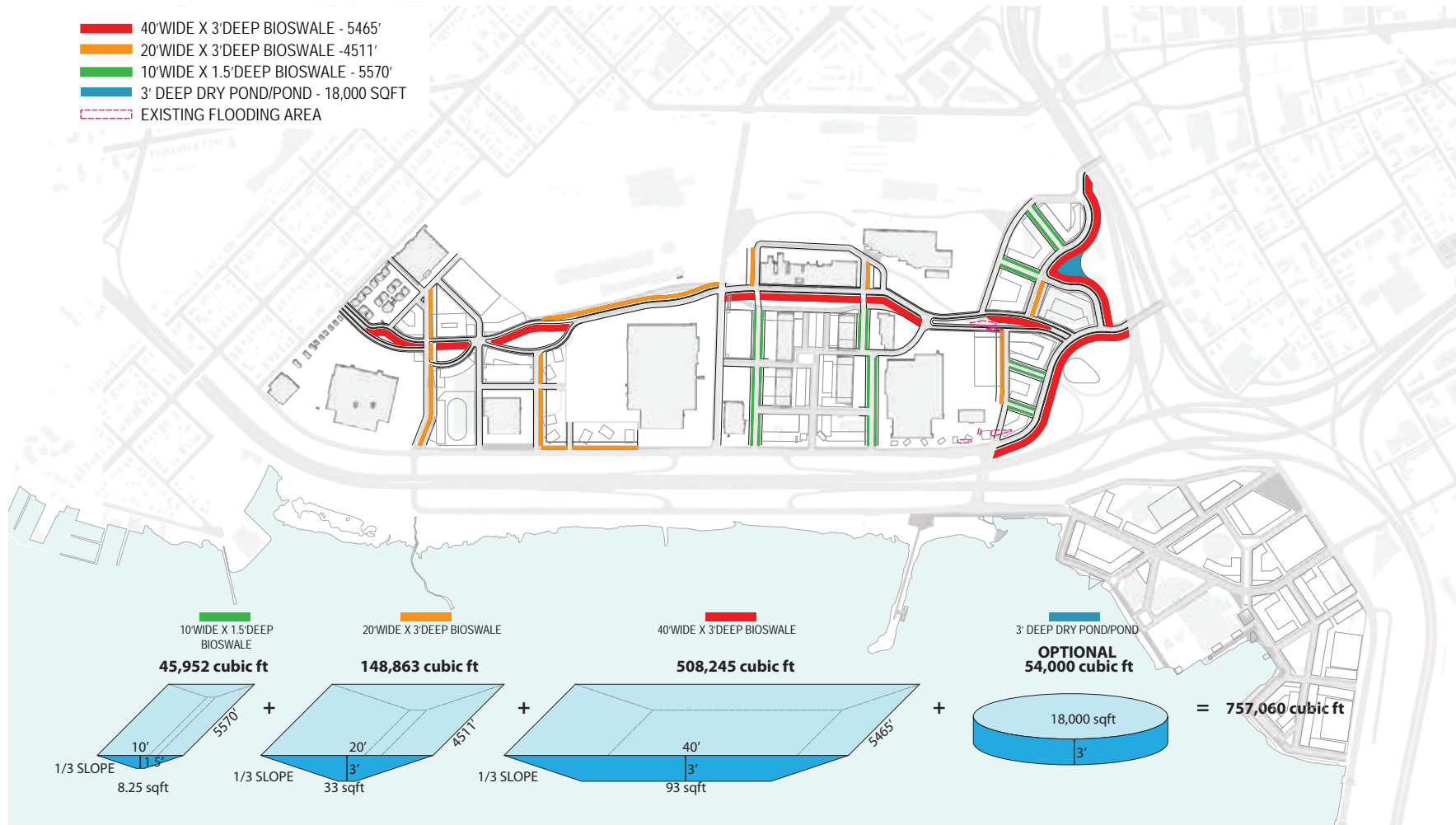


Figure 64. Typologies of Stormwater Management



## Street Typologies

The street typologies are divided into two basic landscape zones, “the Greenway” and the “Fingers”.

The streets that traverse the Greenway Park run parallel to the highway and link together the largest open spaces in the project.

The second type are “Fingers” which link under the highway connecting the greenway park and the waterfront. The Fingers consist of streets and bike lanes with bioswales for stormwater management.

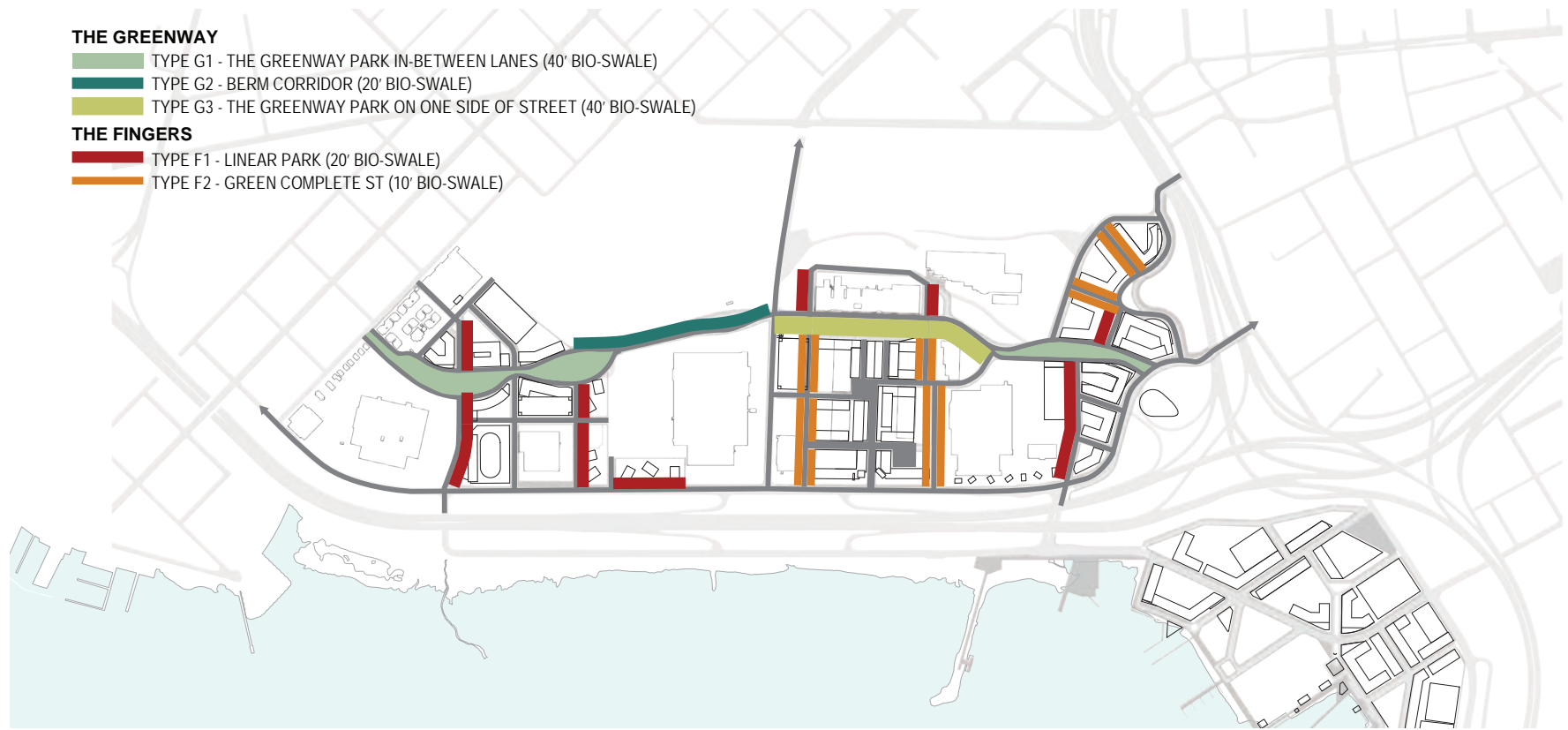


Figure 65. Street Typologies

## G1 The Greenway Park Between Two One-way Roadways (w/ 40' bio-swale)

Type G1 is where landscaped open space lies between two one-way roadways. Fifteen foot wide tree lined sidewalks are on both outer edges, within project site, with bike trails and pedestrian pathways on the interior along with park amenities and bioswale landscape features within the Long Wharf project site, not taking rail yard property.



Figure 66. Family Park/Neighborhood Park

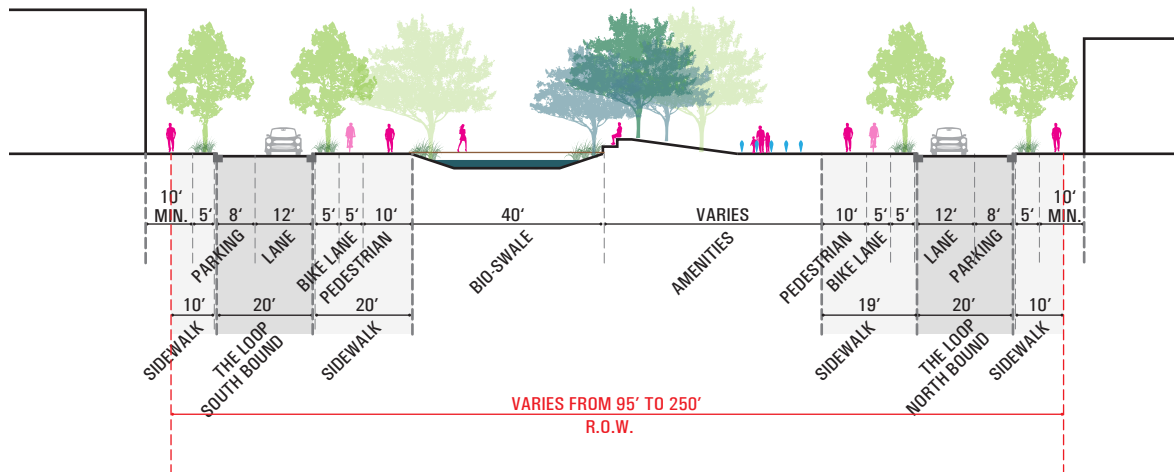


Figure 67. Street Typology G1 Section



## G2 Berm Corridor (w/ 20' bio-swale)

Type G2 occurs adjacent to the rail yard and includes a berm to screen the rail yard from views in the Innovation District. The berm is to the west of Sargent Drive and is adjacent to a bioswale and bike trail.



Figure 68. Dedicated Bike Lane

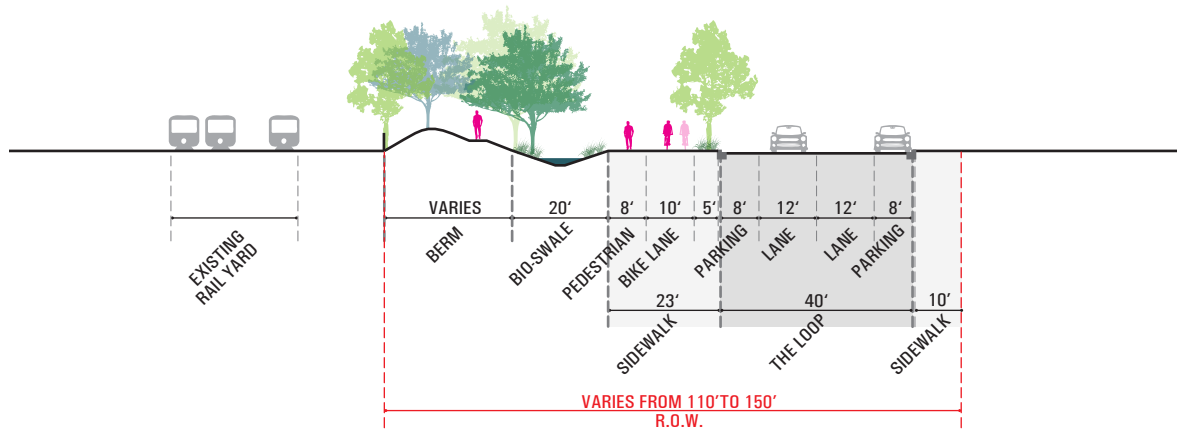


Figure 69. Street typology G2 Section

### G3 The Greenway Park on one side of street (w/ 40' bio-swale)

Type G3 is in the Market District. A tree lined two way roadway with parking on both sides runs along the west side of “The Lawn”. This linear park space contains bike trail and wide “wetland” bioswale landscape feature, as well as, lawn space which is adjacent to the market. Interaction between the Market and the landscape is encouraged and limited vehicular traffic is accommodated in the shared street adjacent on the east side of the Lawn.



Figure 70. Shared Street

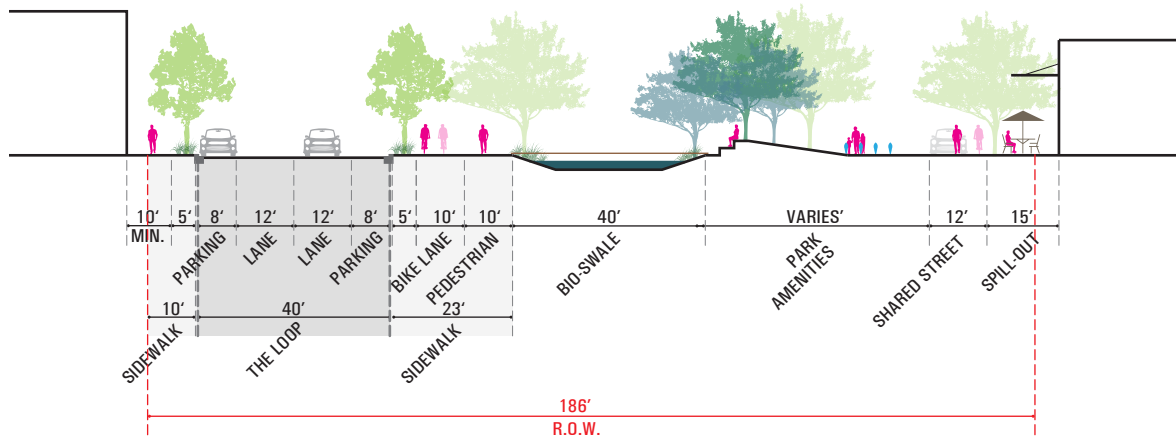


Figure 71. Street Typology G3 Section



## F1 Linear Park / Plaza (w/ 20' bio-swale)

Type F1 is an asymmetrical street with a large bioswale and park like environment to one side with a wide spill out space adjacent to the buildings. The other side of the street includes a tree-lined sidewalk.



Figure 72. Linear Park as Streetscape

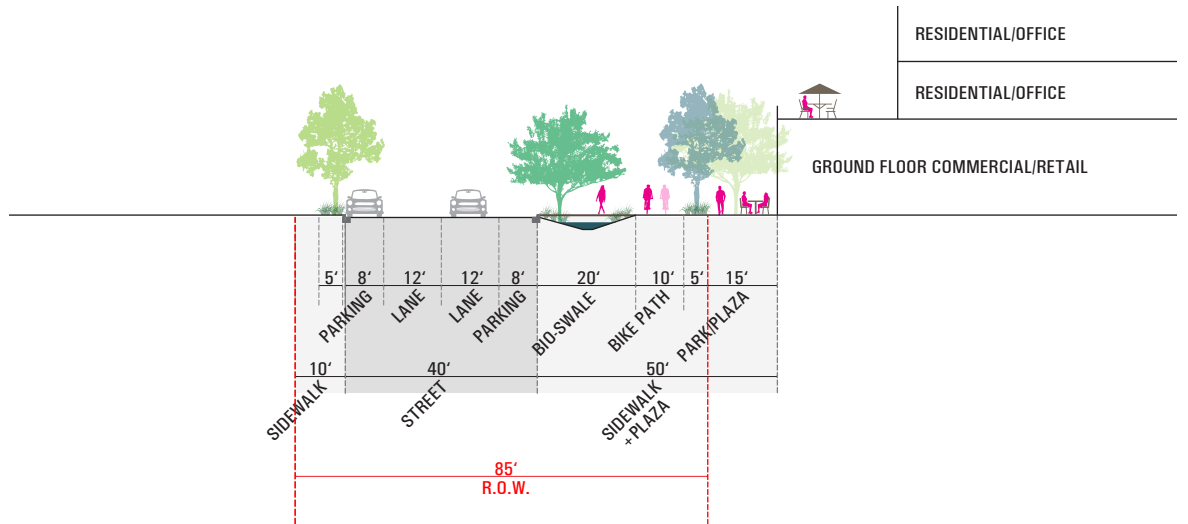


Figure 73. Street Typology F1 Section

## F2 Green Complete Street (w/ 10' bio-swale)

Type F2 is a symmetrical street with narrower bioswales and wide tree-lined sidewalks with shared bike path on both sides.



Figure 74. Streetscape with Bio-swale

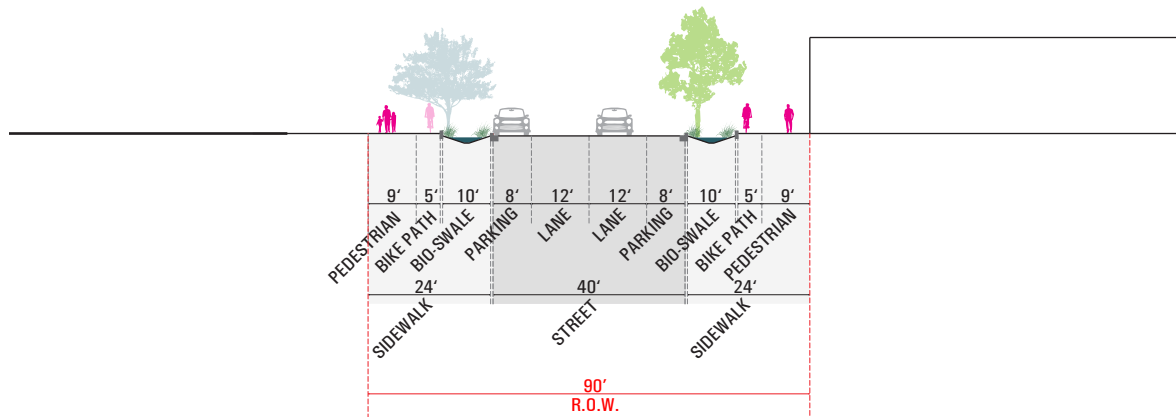


Figure 75. Street Typology F1 Section





Figure 77. Church Street Extension & Brewery Street



Figure 76. Greenway park and market hall







# Mobility System

## Introduction

The Responsible Growth Plan for the area includes the development of five walkable districts connected by a ribbon-like park. The long-term vision focuses on setting the stage for the responsive redevelopment of the Long Wharf area by creating a cohesive public environment and transforming underutilized land into parks, new transportation networks, pedestrian connections, and resilient infrastructure. The Responsible Growth Plan will leverage the benefits of transit oriented development (TOD) consisting of a mix of uses including residential, hotel, office, retail, and public amenities.

The Greenway will travel the length of four districts from Hallock Avenue to Sargent Drive providing circulation for autos, pedestrians, and bicycles. The multimodal Greenway corridor is an integral element to the new sustainable circulation network and simultaneously functions as a linear detention system to mitigate stormwater runoff.

Additionally, the provision of a new shuttle bus service will provide connectivity to adjacent neighborhoods as well as the Harbor District. The five district design will create a cohesive public environment with shared public amenities, parkland featuring resilient infrastructure

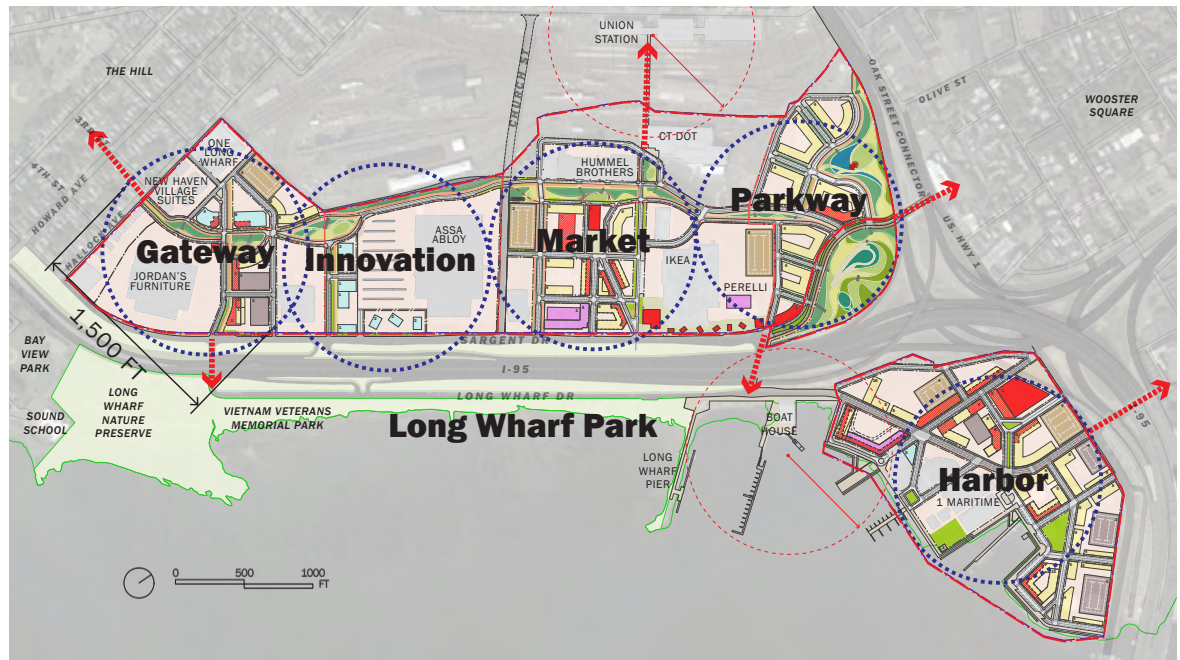


Figure 78. Vision Plan

elements, and a comprehensive network of bike paths and pedestrian walkways anchored by public gathering spaces. The following report summarizes trip generation and multi-modal circulation considerations for the study area.

## Site Location and Existing Roadway Network

The project area is divided into two areas:

- The area to the west of Interstate 95 is 168 acres (7,318,000 square-feet) and encompasses the Gateway District, the Innovation District, the Market District, and the Parkway District
- The area along the harbor, east of Interstate 95 is referred to as the Harbor District and includes 68 acres (2,962,000 square-feet)

The total project area including all five districts is 236 acres (10,280,000 square-feet). The properties within these districts are all privately owned.

The Study Area includes 130 acres of underutilized private land resulting from surface parking lots and uncoordinated land uses. Disjointed developments and corridors contribute to an incongruous streetscape with network gaps and dead ends. Many of the parcels are large with direct access to Sargent Drive, eliminating the need for interior roads. The exception being a few smaller parcels near the rail yard which are accessed via Brewer Street or the Church Street Extension.

The project site is currently accessible via I-95, I-91, U.S. Highway 1 (Route 1), Church Street,

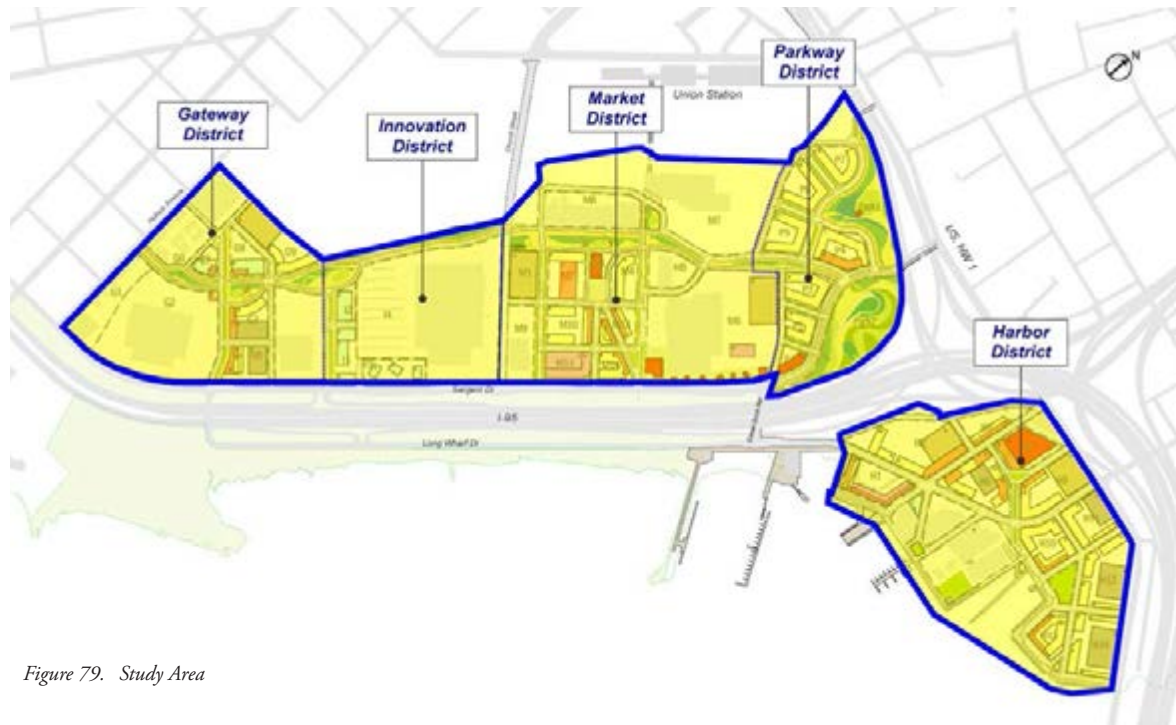


Figure 79. Study Area

Long Wharf Drive, and Sargent Drive. In the future conditions, the site is expected to be accessible via additional access points off of Route 1 as well as new connections along Sargent Drive, Hallock Avenue, and Water Street.

In addition, the future development will provide opportunities for pedestrian and bike

connections to existing bike lanes on Howard Avenue, bike paths along the Long Wharf Park Trail, Water Street Cycle Track, and Harborside Trail as well as a shuttle connection to Union Station.



## Roadway Hierarchy

The roadway hierarchy of the existing street network was determined based on the 2017 Connecticut Department of Transportation Functional Classification Map of New Haven. In total, four roadway classification types were identified as part of this system, including:

- Urban Principal Arterial
- Urban Minor Arterial
- Urban Collector
- Urban Local road

The Study Area is bisected by Sargent Drive, I-95 and Long Wharf Drive which run north to south through the area and Church Street which runs east to west connecting Sargent Drive to Union Avenue. Church Street and Long Wharf Drive are classified as Urban Minor Arterials. Sargent Drive is classified as an Urban Principal Arterial.

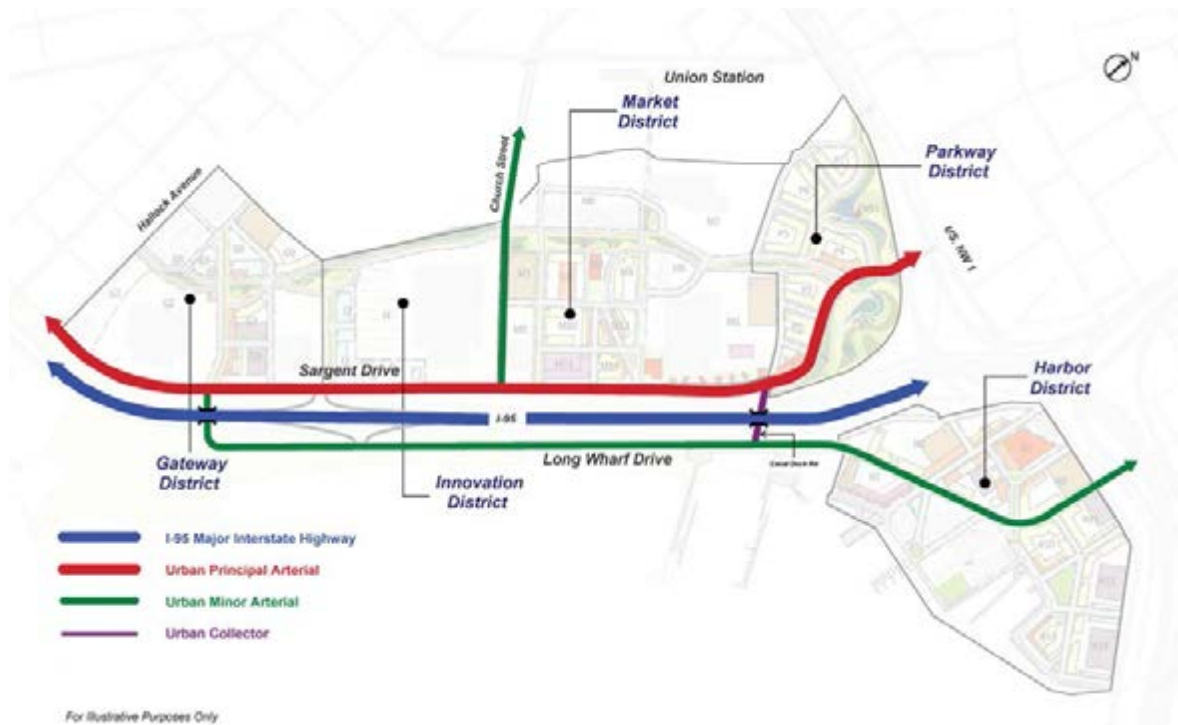


Figure 80. Existing Roadway Classification System

# Existing Transit Infrastructure

The Study Area is serviced by Union Station which provides service from three main commuter rail lines: the New Haven Line (MTA Metro-North Railroad), Shore Line East (CTrail), and the Hartford Line (CTrail). In addition, Amtrak's intercity trains also service Union Station.

There are nine CT Transit bus lines operating near the project site. These include the 204 line on Water Street and East Street, the 212 and 265 lines with part-time service to Union Station, the 271, 272 and 950 New Haven-Hartford Express lines with service to Union Station, the 274 line on Sargent Drive with part-time service to Union Station, the 278 New Haven Connector Downtown Loop with PM service to Union Station, and the Union Station Shuttle (USS) which operates Monday through Friday.

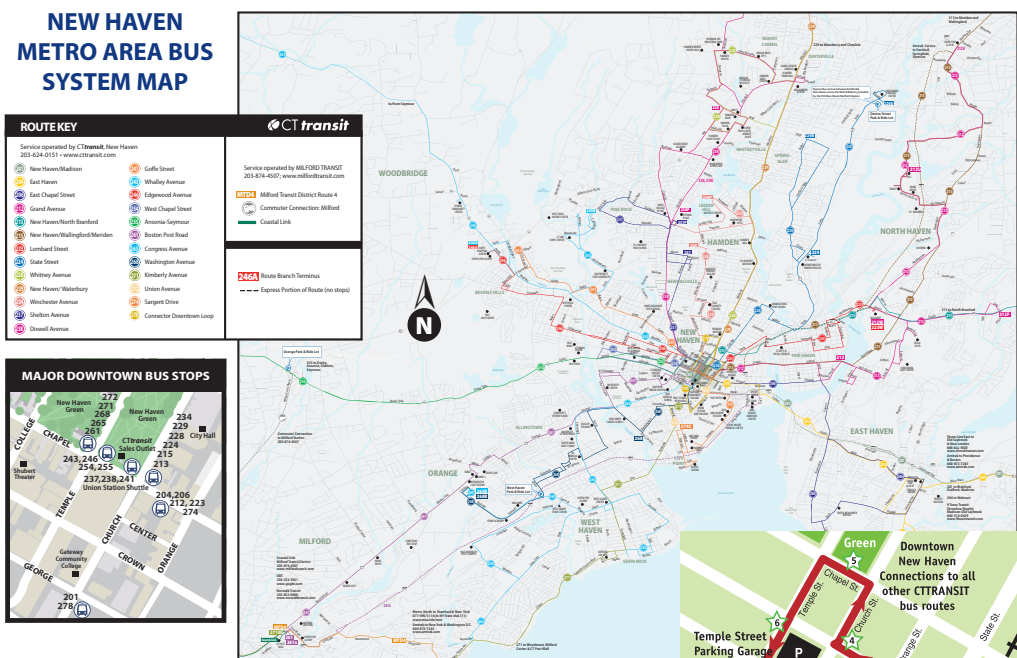


Figure 81. New Haven Metro Area Bus system



Figure 82. Union Station to Downtown Shuttle



## Travel Demand Assessment

### Potential Redevelopment Program

The potential redevelopment of the Study Area sets the stage for the following mix of uses:

- 320,390 gsf of retail
- 4,675,899 gsf of residential (4,375 units)
- 341,184 gsf of office
- 242,024 gsf of hotel (440 keys)
- 2,086,573 gsf of structured parking (5,962 spaces)

### Transit Oriented Development (TOD)

The proposed development consists of a mix of uses, including housing, retail, office, research, and civic. The redevelopment strategy would transform underutilized private land into a network of mixed-use developments, parks, and shared public spaces connected by multimodal corridors. Proximity to Union Station located at Church Street and Union Avenue intersection would provide an opportunity for the proposed development to function as a Transit Oriented Development (TOD) utilizing community assets

Table 1. Trip Generation Analysis Framework

District	Retail (gsf)	Residential (Units) <sup>1</sup>	Office (gsf)	Hotel (Rooms) <sup>2</sup>
Gateway	38,875	264	226,061	0
Innovation	0	0	73,798	0
Market	55,441	753	0	324
Parkway	34,597	936	0	0
Harbor	191,477	2,771	41,325	116
Total	320,390	4,675	341,184	440

Notes:

1. Average residential unit size is assumed to be approximately 1,000 gsf

2. Average hotel room size is assumed to be 550 gsf

such as rail stations, transfer centers and major bus connections.

Typically, TOD is a smart growth strategy that encourages walkability and creates pedestrian-friendly connections to the surrounding community. The proposed mixed-use environment and the vitality of the new connections would create an engaging and pedestrian-friendly public realm to support active transportation and decrease automobile dependency in line with the goals of the city of New Haven to encourage

car-free living and sustainable commuting practices.

### Trip Generation

Transportation planning assumptions for the proposed development are based on information provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual – 10th Edition, 2012-2016 U.S. Census Bureau's American Community Survey (ACS) Journey to Work data and 2006-2010 U.S. Census Bureau's

ACS Reverse Journey to Work data.

Generally, trip generation is based on single-use sites, which doesn't fully account for the effect of compact development, mix of uses, site design, walkability, transit, and other regional accessibility factors such as proximity to a major transit station. Smart growth and transit-oriented strategies encourage walking, biking, and other forms of alternative transportation reducing overall vehicle trips. To account for the mixed-use nature of the project's development strategy, an internal capture credit of 20% was applied to the overall trips for the Retail, Residential, and Office components of the project, and an additional 20% pass-by credit was applied to the Retail component of the project.

Furthermore, based upon future projections and trends of autonomous vehicles and the increase in alternative transportation modes, the overall trip generation of the full build-out is anticipated to be lower than forecasted.

### Net Incremental Trips

The potential redevelopment is anticipated to generate approximately 2,057 and 3,242 net incremental vehicle trips during the weekday morning and evening periods, respectively. It should be noted that the peaking characteristics

of the various land uses would not coincide at any given time during the morning and evening time periods. Therefore, the net incremental trips generated by the proposed development during the morning and evening periods would not occur in a given AM or PM peak hour and are anticipated to be distributed over a much longer 2 to 3 hour period.

### Retail

The travel demand forecast for the retail use is based on vehicle trip rates, directional splits and temporal distribution from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition – Land Use 820: Shopping Center. A 20 percent internal capture credit (to account for planned residential and commercial uses within the districts) and a 20 percent pass-by credit were applied to the overall trips. The AM rates reflect trips during the “Peak Hours of the Adjacent Street.” In the case of the “Shopping Center”, as well as for retail in general, the Peak Hour of the Generator do not overlap with the typical commuter peak hours between 7 – 9 AM (morning) and 4 – 6 PM (evening).

### Residential

The travel demand forecast for the residential use is based on vehicle trip rates, directional splits and temporal distribution from the ITE

Trip Generation Manual, 10th Edition – Land Use 221: Multifamily Housing (Mid-Rise). To incorporate prevailing travel characteristics in the area, the trip rates were adjusted based on modal split and vehicle occupancy, as per the 2012-2016 U.S. Census Journey to Work data. A 20 percent internal capture credit was applied to the overall trips (to account for planned office use within the districts).

### Office

The travel demand forecast for the office use is based on vehicle trip rates, directional splits and temporal distribution from the ITE Trip Generation Manual, 10th Edition – Land Use 710: General Office Building. To incorporate prevailing travel characteristics in the area, the trip rates have been adjusted based on modal split and vehicle occupancy, as per 2006-2010 U.S. Census Reverse Journey to Work data. A 20 percent internal capture credit was applied to the overall trips (to account for planned residential use within the districts).

### Hotel

The travel demand forecast for the hotel use is based on vehicle trip rates, directional splits and temporal distribution from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition – Land Use 310: Hotel.



## Future Transportation Network

### Roadway Network

The construction of the Greenway and other new roadway connections will improve circulation throughout the five districts by providing alternate access to the potential redevelopment. Currently, streets and roadways within the Study Area are generally disconnected, lacking adequate through access. In future conditions, the proposed project will provide improved circulation for vehicles, bicycles and pedestrians.

The Greenway is a multimodal corridor that travels north to south through the Gateway, Innovation, Market, and Parkway Districts accommodating bicycles, pedestrians, and vehicles. It will be designed and operated as a Complete Street with low vehicle speeds and dedicated space for cyclists and pedestrians. The goal is to provide a comfortable and accessible environment for all users.

The proposed network design creates new gateways into the districts linking them to the surrounding urban context, prioritizing bicycles and pedestrians within the project area while maintaining and distributing vehicular access

to essential routes via Sargent Drive and Long Wharf Drive. This approach establishes a pedestrian friendly environment internal to the project area without limiting vehicular access. Sargent Drive from Long Wharf Drive to Canal Dock Road will serve as the main vehicular access route to the Gateway, Innovation, Market, and Parkway Districts. Long Wharf Drive will serve as the main vehicular access route to the Harbor District. A majority of newly generated vehicular trips are expected to approach via northbound and southbound I-95, exiting onto Long Wharf Drive and Sargent Drive. The remaining trips are expected to arrive from the west and south passing through the intersections along Hallock Avenue and Water Street.

### Roadway Hierarchy

Under future build conditions, new roadways will be constructed throughout the five districts, creating an internal network consisting of Urban Collector Roads and Urban Local Roads. The future roadway networks within the districts will be created as part of the private redevelopment.

The infrastructure will be designed to adequately serve projected trip volumes by providing appropriate lane configurations and intersection controls, transportation management strategies, as well as on-street parking, bike lanes, and sidewalks.

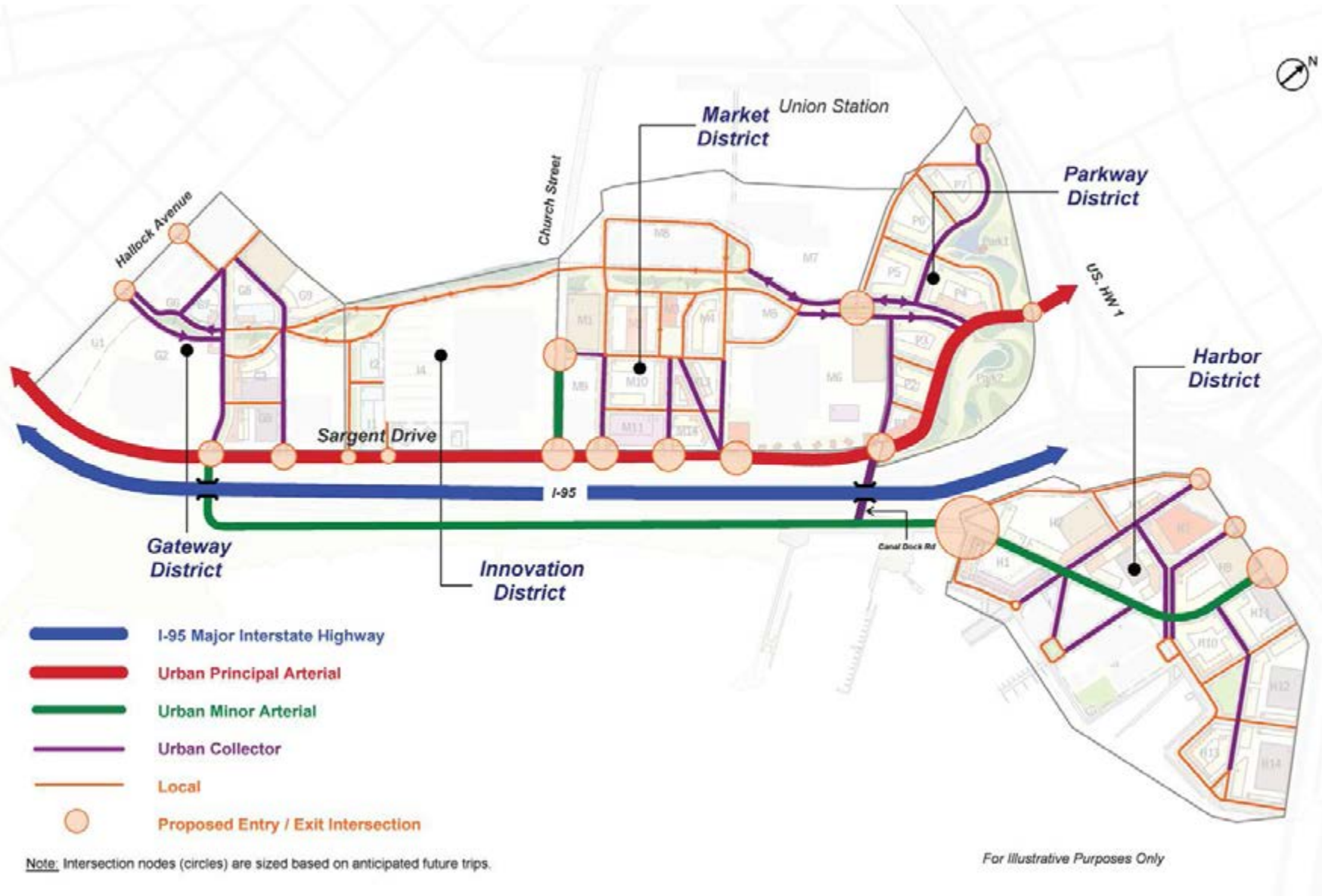


Figure 83. Future Roadway Classification System



## Pedestrian and Bicycle Circulation

### Pedestrian Circulation

The Responsible Growth Plan articulates the transformation of underutilized land into shared public space. The Greenway serves as the primary circulation spine for the pedestrian network, laterally connecting the Gateway, Innovation, Market, and Parkway Districts. Smaller roads will branch out from the Greenway linking major infill development and mixed-use nodes within the project area. Key routes include:

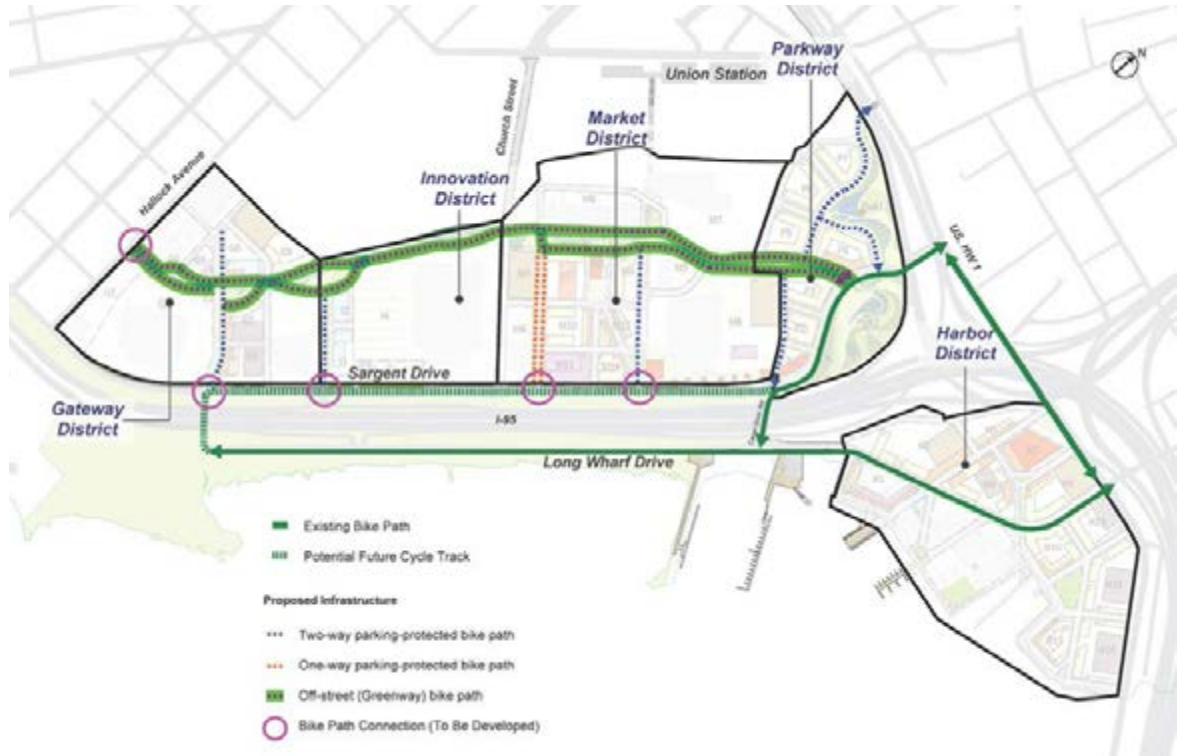
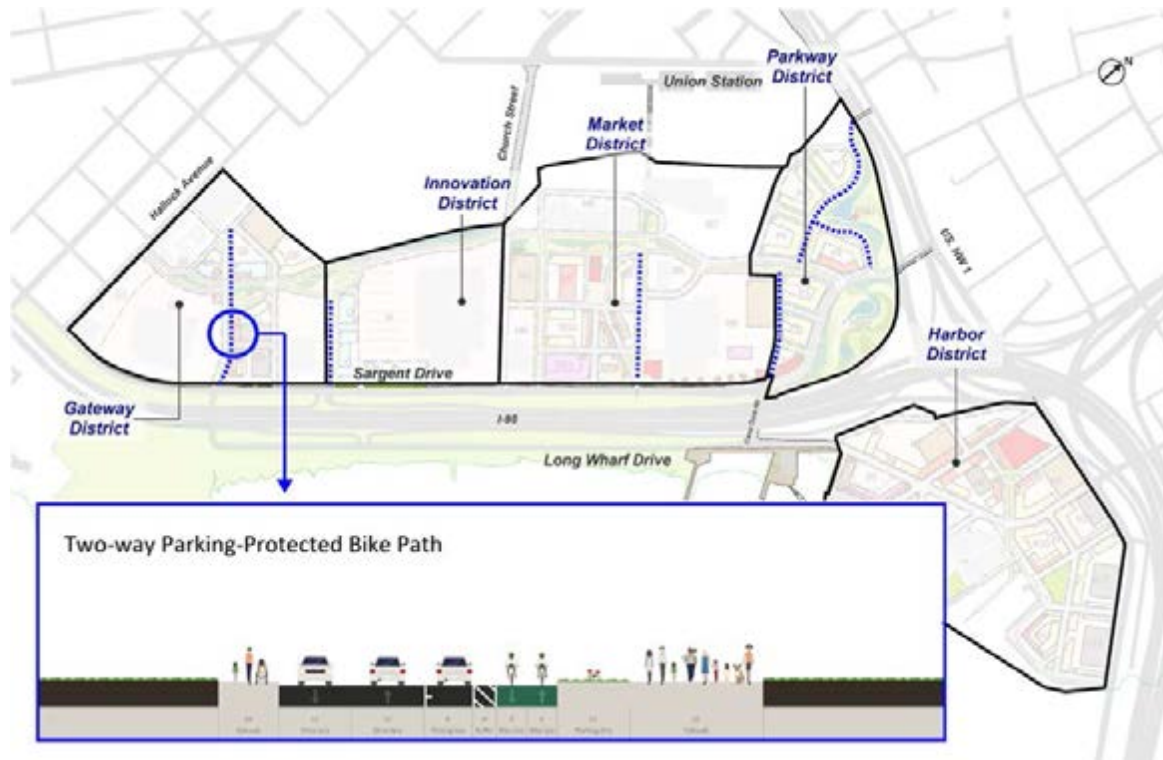


Figure 84. Proposed Bicycle Infrastructure and Connections in the Project Area



- Market Street – an east-west corridor in the Market District serves as a major connector to the Market Square Food Hall, retail, entertainment, and urban green space;
- The Greenway functions as an inter-district pedestrian corridor as well as an integrative extension into the Hill Neighborhood;
- The Boulevard and Main Street in the Harbor District serve as key pedestrian links to multiple destinations along the waterfront including the Inlet, Harbor Park, Water Court, and the Water Circle.
- There is potential for an extension of the tunnel beneath the rail yard to provide a connection from Union Station to the Market District.

Figure 85. Two-way Parking-Protected Bike Path



## Bicycle Circulation

The proposed Greenway will create a major north-south connection between the Hill Neighborhood and Downtown, allowing direct access into the Study Area. The Greenway and the districts will be connected to the cycle-track on Long Wharf Drive and the Farmington Canal Trail by bike paths that traverse through the districts.

Major north-south roads connecting to Sargent Drive are expected to carry high traffic volumes, and therefore, Class I parking protected bike lanes are proposed for these connections. The Class I bike lanes provide a physical barrier between cyclists and vehicular traffic, creating a safe environment for both modes to operate without potential conflicts. Along secondary street connections, traffic volumes are expected to be lower (compared to major north-south connections); therefore, Class III shared bike lanes are proposed for these roadways.

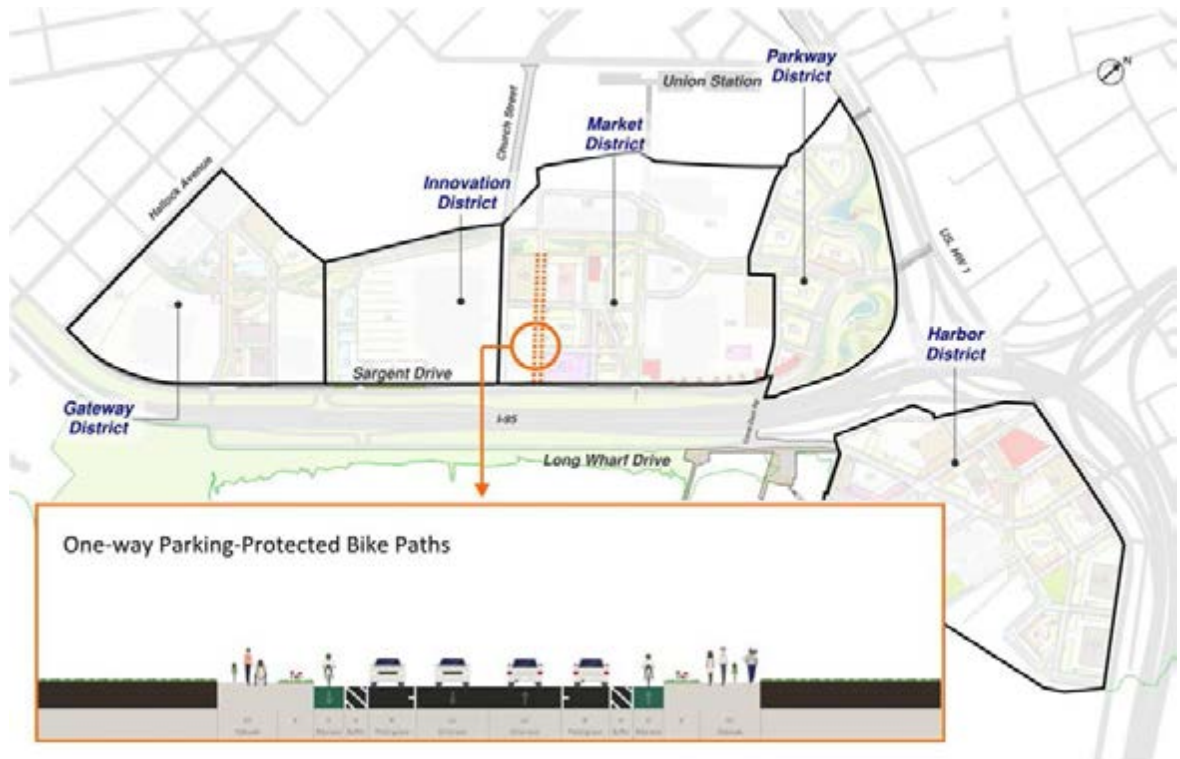
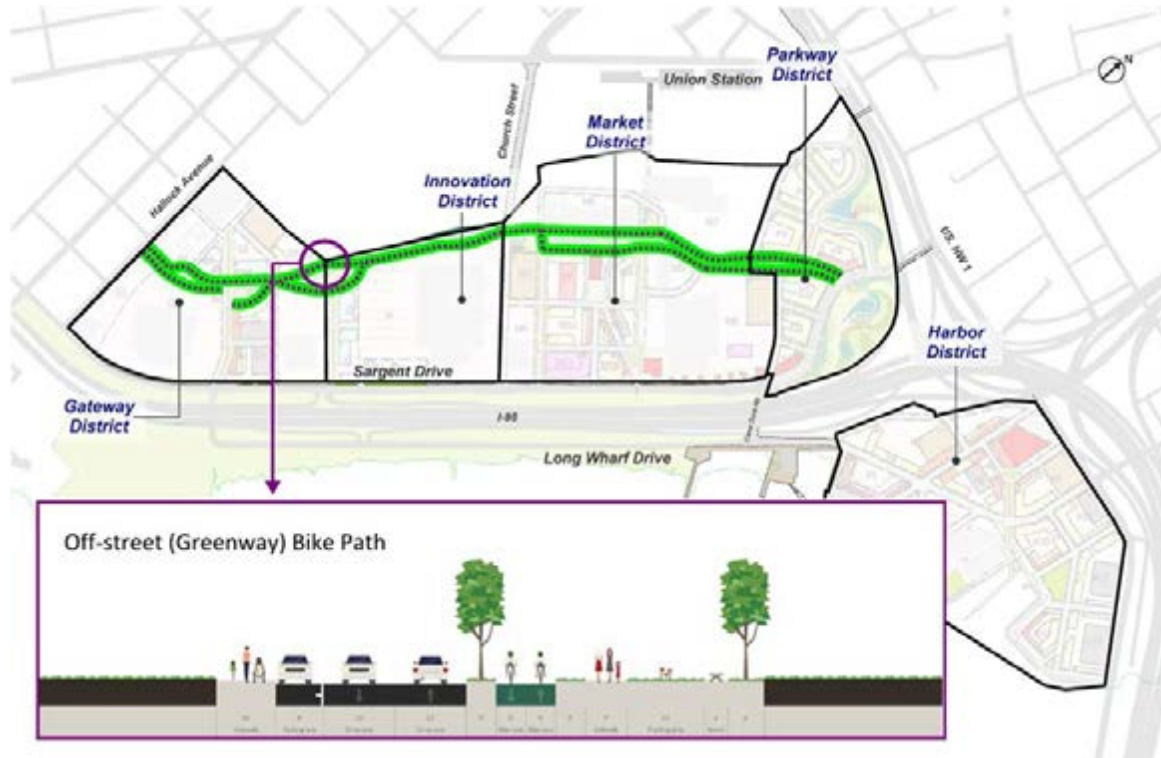


Figure 86. One-way Parking-Protected Bike Path



The proposed bicycle infrastructure would provide connectivity between Harbor District and the other four districts via the bike path on Canal Dock Road. Implementation of a bike share program with stations located in the Harbor District and along the Sargent Drive in the Parkway District could further facilitate inter-district bicycle mobility.

The proposed bicycle facilities within the project site and typical lane configurations for the proposed network are depicted in **Figure 85**, **Figure 86** and **Figure 87**.



## Traffic Management Opportunities

### New Union Station Shuttle

A potential District-wide/Union Station shuttle would complement the existing Union Station Shuttle, providing service to the project area with stops in all five districts. The route will travel along high priority corridors characterized by dense pedestrian traffic and major attractions, maximizing service benefits and strategically targeting high demand areas. The potential shuttle system could evolve to provide additional routes within the districts as redevelopment of this area progresses over time. Currently, there are limited connections from the study area to Union Station. The proposed shuttle will provide better access to Union Station and incentivize transit travel for both residents and visitors alike. Additionally, the integration of a new shuttle system in the project area will further establish the area as a transit oriented development, reducing individual vehicular trips.

The potential route would enter the Harbor District via Water Street, cross into the Parkway District via Canal Dock Road and continue through the remaining four districts before returning to Union Station. The route will approach Union Station from the south, entering the lay-by area for pick-up and drop-offs. This will

allow passengers to board and alight on the same side of the street as the station's main entrance. The proposed route will be approximately 3.75 miles round trip. A new shuttle bus service can be phased in with the development schedule, and routing can be modified based on future demand as the districts become operational.

### Existing Union Station Shuttle and Yale Shuttle

The existing Downtown/Union Station Shuttle is operated Monday through Friday with service connecting Union Station to downtown destinations and parking facilities. It's a free shuttle that travels from Union Station on Union Avenue, up North Frontage Road, Orange Street, Church Street, Chapel Street, Temple Street, George Street and State Street and heads back on Union Avenue to Union Station. Its route is approximately 1.5 miles long with eight stops and operates with a frequency of 3 buses/hour. The Yale University Shuttle is another free shuttle service with a connection at Union Station. It offers transportation between the University, the East Rock neighborhood and the New Haven train stations for students, faculty and staff. It runs year round except on University holidays.

### Shared Parking Strategies

The district's potential mixed-use programming provides an opportunity to implement shared parking strategies. These strategies are most effective when applied for mixed land uses with varying peak parking demands. Shared parking, public or private, is a sustainable approach to promote dense multi-use development which decreases the total number of parking spaces required for each individual land use. The land uses benefitting from shared parking are adjacent, making it possible to physically share the space. Shared parking can be implemented in parking garages throughout the study area that serve residential, office and retail land uses. An in-depth shared parking study requires data collection and analysis of base parking ratios, seasonal and temporal adjustment factors, modal splits as well as other critical parking needs. During the build out process, the future parking will be studied to determine the final parking supply and demand parameters applying the shared parking strategies.

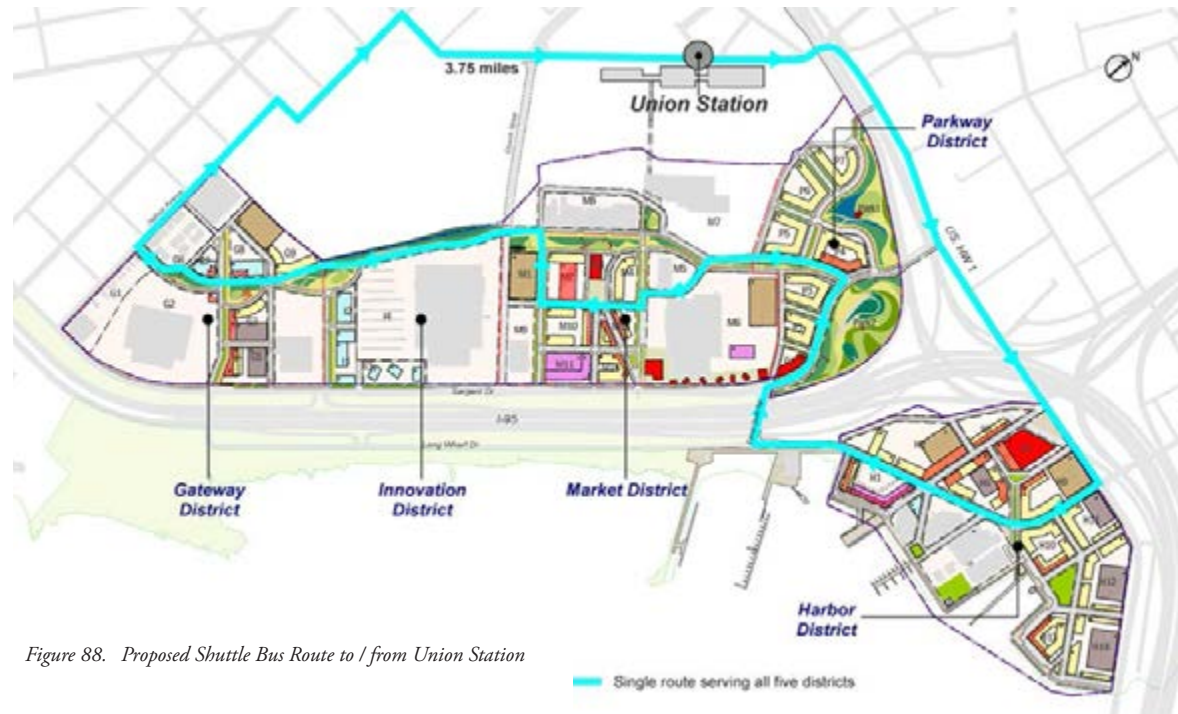
### Bike Share Program

Bike share programs encourage active transportation and provide many benefits to the

community including: increased transit ridership, economic development, diverse transportation choices, and reduced air pollution. Bike share programs increase local economies and improve the health of residents and visitors. Additionally, bike stations placed near transit stops can provide critical first-mile / last-mile mobility links for transit riders. The existing, “Bike New Haven” bike share program provides 200 bikes at 31 bike stations throughout New Haven. Future stations proposed throughout the project area could connect the districts to surrounding neighborhoods and facilitate mobility to Union Station, which currently has an existing Bike New Haven bike share station. Additionally, Yale University has partnered with Noa Technologies (Noa) to provide bike sharing to the campus community.

## Mobility-as-a-Service (MaaS)

Car/ride sharing services and for-hire services such as Zipcar, Uber, and Lyft are representative of trends towards Mobility-as-a-Service (MaaS). Smart cities are integrating smart mobility as a solution to reduce traffic congestion and provide alternatives to private car ownership. Expanding Zipcar service into the five districts will encourage car sharing practices by providing



alternative transportation options for both local and regional travel. Additionally, exclusive Uber and Lyft drop-off/pick-up zones within districts and in high priority areas could further reduce the dependency on single occupancy vehicles. Proper integration of car/ride sharing services offers ecological and social benefit as well as transportation flexibility for residents. Yale

University has partnered with Zipcar to provide its students and employees discounted yearly memberships. The nearest Zipcar lot, located at Union Station Garage, can be integrated with future proposed lots to expand the existing network and provide all five districts with alternative transportation options.



## Improving Access to Union Station

While the northern edge of the Long Wharf Study Areas is only 700 ft to the Union Station train platforms on the map, the reality of getting to the platform is indirect and circuitous.

The plan envisions a new tunnel connecting the northern edge of the Market District to the southern-most platform; it will also provide a direct connection to both of the existing ConnDOT buildings on Brewery Street. Establishing a direct connection to the Union Station platforms will transform the entire Make District into a prime transit oriented development, putting the entire district within a 10 minute walk of MetroNorth and Amtrak service and indeed bringing the entire Long Wharf area within walking distance of the train platforms.



Figure 89. Existing Tunnel – Union Station



Figure 90. Tunnel Bikeway Concept, London, UK

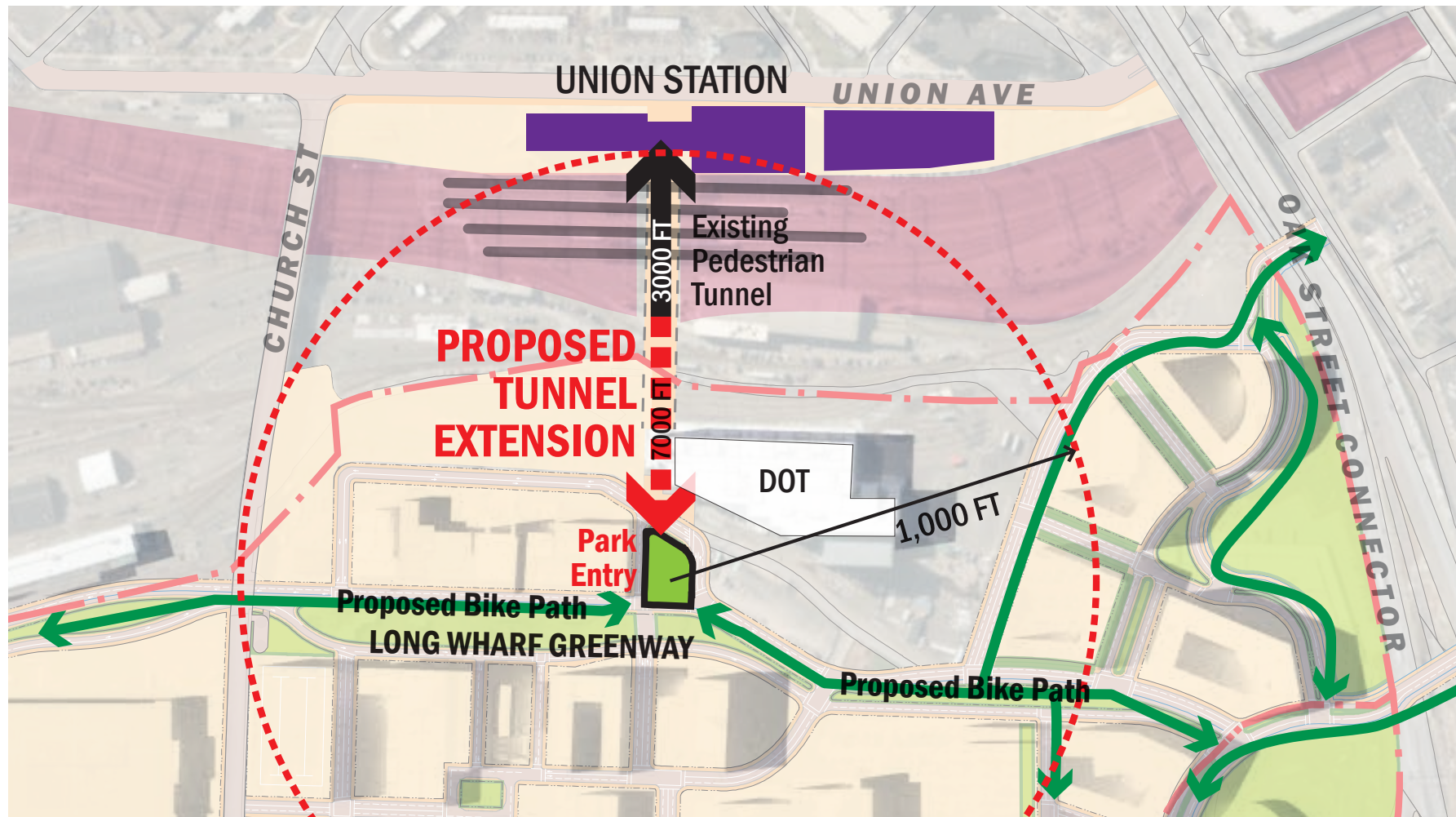


Figure 91. Union Station Tunnel Extension



## Enabling Projects

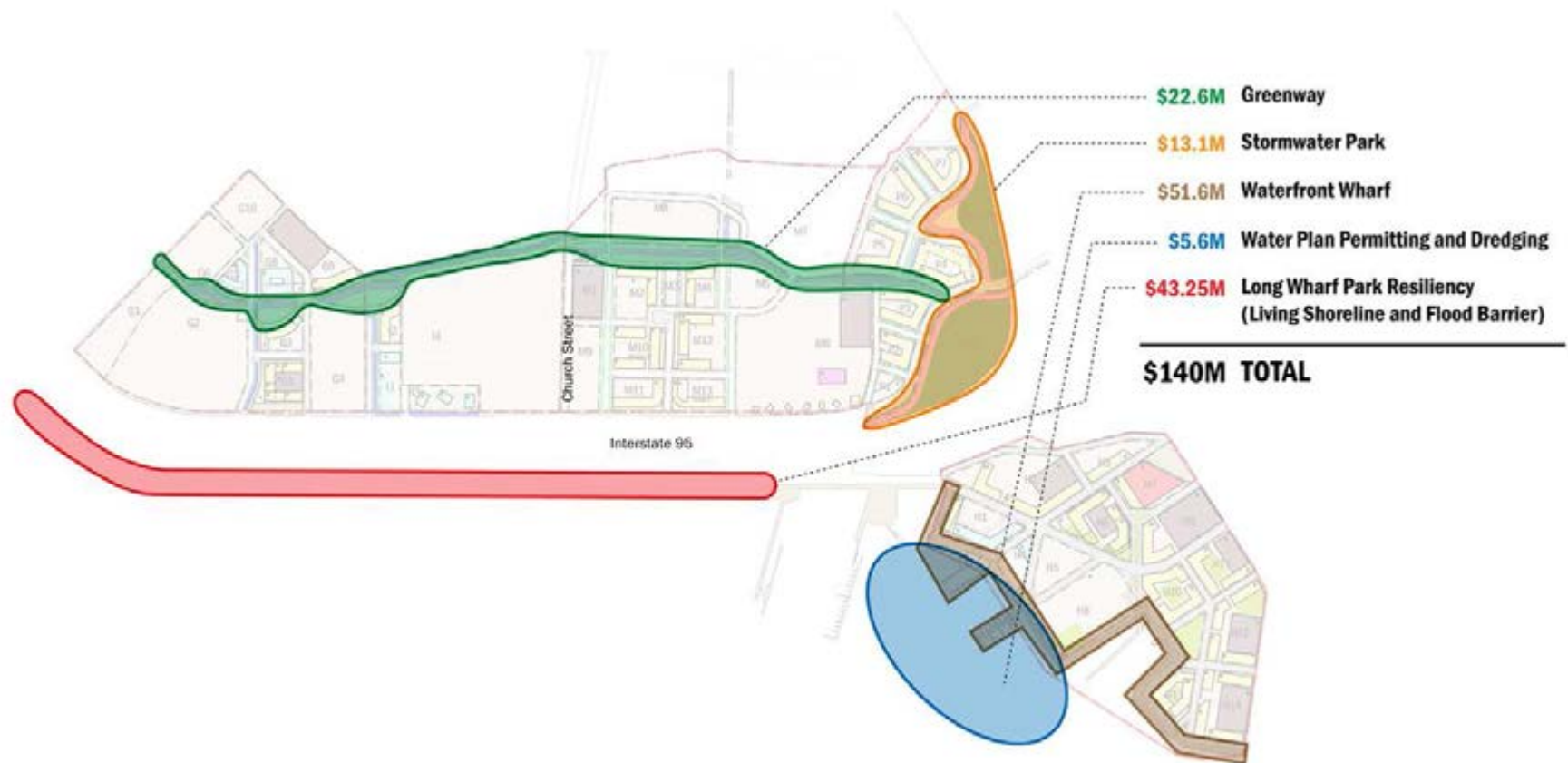


Figure 92. Enabling Projects

# Impact Analysis

## Introduction

The impact of the Vision Plan is presented in two ways. The first estimates the Economic Impact of the Plan in terms of jobs created and the generation of State and City tax revenues to illustrate the economic benefits of the new development for the State, the City and its residents. The analysis compares the economic impact if no public improvements are made with a 10-year interim and 20-year full buildout. The direct impact of all construction occurring over the 20-year full build out results in the creation of an average of 600 jobs each year, with wages and salaries totaling \$41 million (in 2018 dollars). On a recurring annual basis, the estimated economic impact of ongoing operations at full buildout would include an increase of nearly 3,500 jobs in the Long Wharf area, with wages and salaries totaling nearly \$182 million (in 2018 dollars).

The second is the Public Financing Impact, which estimates the potential to fund a Tax Increment Financing ("TIF") bond to pay for the gap (\$36 to 46 million) in the funding for the Enabling Projects not funded by other public sources. The analysis compares the incremental real estate taxes generated by the new development with the estimated annual debt service for TIF bonds based upon full buildout (estimated at 20 years or more) and after 10 years of development

to reflect the phasing of development based on market absorption. This high-level analysis indicates that after 10 years of development, if most incremental new real estate taxes generated by the Vision Plan are used to pay debt service, there would be sufficient revenue to cover debt service payments for the estimated funding gap. After full buildout, a smaller percentage of total incremental new real estate taxes will be needed to cover debt service on the bonds. However, one of the greatest challenges of the TIF structure will be funding debt service payments in the early years, prior to significant development in the Long Wharf District. Therefore, funding of these payments, prior to new development, will require alternative approaches to structuring the bond issue, all of which will impact the cost and amount of bond required.

## Three Analyses

The Economic Impact and Public Financing Impact was analyzed for three different development scenarios for the Long Wharf.

For purposes of the impact analysis, Office space has been separated into 3 different categories that include standard corporate office, tech office (defined as less expensive space often used for start-up entities), and specialized medical office. In addition, Retail includes the

Long Wharf Theater and Sports Haven in new facilities (Sports Haven in a smaller structure in combination with a restaurant). The three different scenarios include:

- The Buildout at 10 years, estimates incremental taxes collected at the 10-year mark of development of the Vision Plan.
- The Full Buildout assumes that the Enabling Projects will be built in the first five years, to attract private investment and increase the pace of development.
- The No-Action Plan assumes that the Enabling Projects are not built, diminishing the ability of developers to construct the density and type of development shown in the Vision Plan.

## Vision Plan and Timing of Development

The Vision Plan was created to guide future redevelopment on the Long Wharf. It was created with participation and feedback from the local community and includes the flexibility to respond to changes in market demands. At Full Buildout, the Plan envisions 5.6 million square feet of development, excluding parking garages over the next two or more decades. While the area will benefit from the Plan and resulting public investment, it also benefits from its location in a



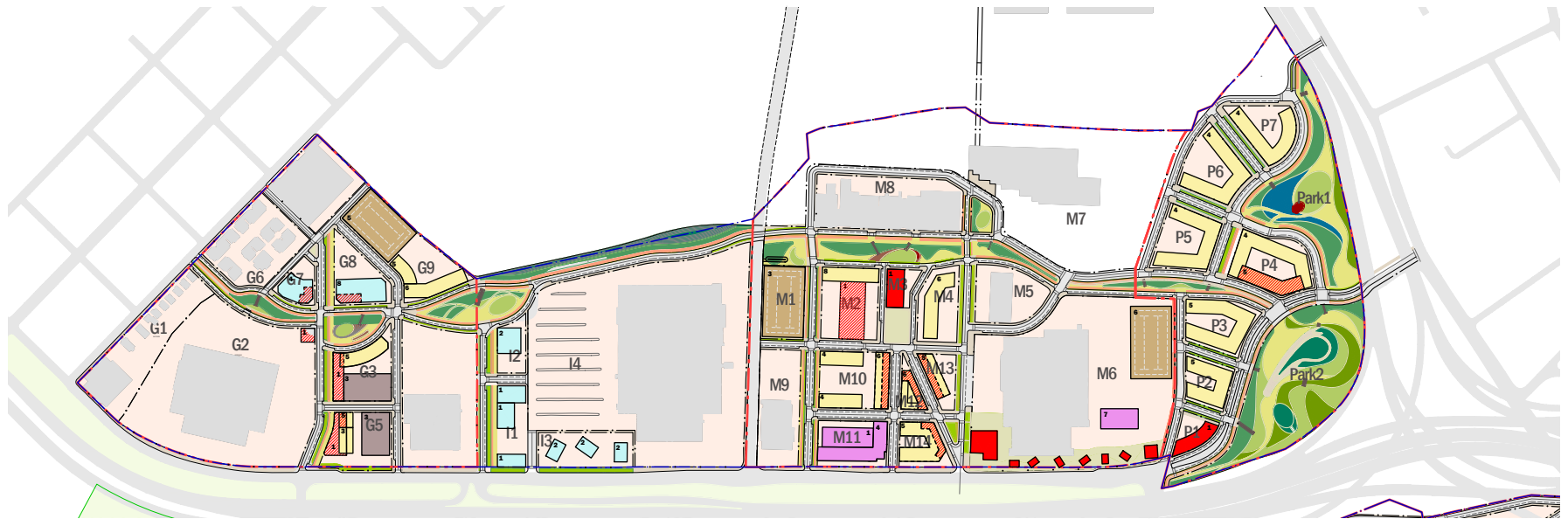


Figure 93. Development Key Map - The Gateway District, The Innovation District, The Market District, The Parkway District

federally-approved Opportunity Zone (1402).

The Plan calls for critical Enabling Projects in the Long Wharf to attract private development. Enabling Projects include: reversing storm water issues, creating publicly accessible parks and waterfront, and making the waterfront more resilient to flooding by storms. These Enabling Projects are expected to provide confidence to developers and could result in various economic benefits for the City (see “**Economic Impact**” on page 83)

The long-term nature of the Vision Plan makes it difficult to predict the actual timing of development, as the amount and type of uses, their design, and market and economic conditions will all vary over time. However, for the **Full Buildout** and the **10-year Buildout** analyses the Enabling Projects are estimated to accelerate market absorption over the next two decades.

### Methodology 10-year Buildout

We estimated that approximately 1/3 of the total development will be completed by the

end of 10 years. In the early years, the pace of development is assumed to be slower since the full impact of the Enabling Projects will not be felt until after year 5. It is also anticipated that the success of projects completed early on will create momentum for development in the second 10 years.

The assumptions for the 10 year build out include the following:

- Existing and currently vacant former Pirelli Building will be converted to hotel use within the first 10 years



Figure 94. Development Plan - The Harbor District

- Sports Haven will create a 15,500 SF dining/gaming use within the first 10 years on their existing site, similar to their new smaller format projects in other locations.
- Long Wharf Theater will locate into new mixed-use space of 31,500 SF in the Market district within the first 10 years.
- Development on the tank farm site will occur after year 10 due to the time likely required to complete demolition, remediation and approvals.

Use (GFA, SF)	Retail	Residential	Office	Tech Office	Med Office	Hotel	Public Garage	Private Garage
Total	100,029	1,152,742	13,775	24,599	75,354	147,341	391,414	102,515
Gateway	12,958	88,190	-	-	75,354	-	61,333	54,000
Innovation	-	-	-	73,798	-	-	-	-
Market	18,480	251,105	-	-	-	126,000	194,009	-
Parkway	11,532	312,281	-	-	-	-	-	25,052
Harbor	57,058	501,165	13,775	-	-	21,341	136,072	23,463

Figure 95. Allocation of Uses - Vision Plan at 10-Year Buildout

Program includes approximately 1,160 housing units and 1,411 parking garage spaces; 31,500 SF for Long Wharf Theater not shown

## Methodology for Full Buildout (Estimated at 20 years or more)

In general, we assumed that two thirds or most of the development would occur in the second half

of the twenty-year projection between years 11 and 20.

This refined view of the Vision Plan at full buildout is summarized in **Figure 95**.

Use (GFA, SF)	Retail	Residential	Office	Tech Office	Med Office	Hotel	Public Garage	Private Garage
Total	320,390	4,675,899	41,325	73,798	226,061	242,024	1,174,243	912,330
Gateway	38,875	264,571	-	-	226,061	-	184,000	162,000
Innovation	-	-	-	73,798	-	-	-	-
Market	55,441	753,316	-	-	-	178,000	582,027	-
Parkway	34,597	936,843	-	-	-	-	-	75,155
Harbor	191,477	2,721,169	41,325	-	-	64,024	408,216	675,175

Figure 96. Allocation of Uses - Vision Plan at Full Buildout (20 years)

Program includes approximately 4,700 housing units and 5,962 parking garage spaces; 31,500 SF for Long Wharf Theater not shown



## No-Action Plan

To analyze the impacts that might occur if the Enabling Projects are not completed, we assumed that there would be no changes in zoning and no investment in infrastructure beyond what has already occurred.

We project that development would be much more limited due to the challenges that the Long Wharf District faces as summarized in the SWOT analysis. For example, the area of the Parkway District would be difficult to develop without creation of public access to many of the sites in this area.

Notwithstanding these constraints, based on market participant interviews, the following projects appear to be ripe for development in the near future even without implementation of the Vision Plan.

### Gateway Area

We assumed the owners of 1 Long Wharf Drive would build a garage large enough to accommodate 1 Long Wharf Drive and one new medical office building.

Use (GFA, SF)	Retail	Residential	Office	Tech Office	Med Office	Hotel
Total	89,173	-	-	36,899	69,797	100,000
Gateway	3,673	-	-	-	69,797	-
Innovation	-	-	-	36,899	-	-
Market	60,000	-	-	-	-	100,000
Parkway	-	-	-	-	-	-
Harbor	25,500	-	-	-	-	-

Figure 97. Allocation of Uses – No-Action Plan  
Program includes no new housing units or parking garage spaces

### Market District Area

For purpose of this analysis, we have assumed that the current owners would be willing to sell their property. The Food Terminal itself would be redeveloped with a mix of uses that may include wholesale food, bakery, specialty foods, liquors, restaurants/take-out, dance studio, and recording studio. We have assumed that the new development would be approximately 60,000 SF.

As mentioned above, based on market participants believe it is likely that the vacant former Pirelli building will be renovated and converted to hotel use within the next 10 years and that the existing La Quinta hotel, Mobile

gas station, and Bank of America branch would remain in their current condition.

### Innovation District Area

A portion of the development shown in the Vision Plan could occur in the Innovation District area totaling ½ of the 111,941 SF (or 55,971 SF) of technology office buildings

### Harbor District Area

The Sports Haven site will be redeveloped with a dining/gaming use. The same site could also accommodate a stand-alone pharmacy, such as CVS, which we estimated at 10,000 SF.

The following table summarizes our estimates of development at Long Wharf in the No Action Plan without the Enabling Projects or zoning changes. Since these developments are considered near-term projects, we also assumed that all projects would be completed in the initial 10-year period, with no additional development occurring between years 10 and 20.

## Economic Impact

To estimate the economic and tax revenue impacts of new development in the Vision Plan, Appleseed analyzed:

- The impact of spending on new residential, commercial and public construction pursuant to the Plan;
- Occupied space in the new and rehabilitated commercial space that would be developed in the Long Wharf area pursuant to the Plan;
- For both construction and operations, Appleseed analyzed the impact of;
- Development that would hypothetically occur within 10 years after the City's adoption of the Plan;
- Development that would result from the full build-out of the Plan; and
- Development that might occur under a "no-action" alternative, in which the City takes no new action to enable, incentivize or guide new development in the Long Wharf area.

The direct impacts<sup>1</sup> of construction and operations on employment, earnings, value-added and output in the Long Wharf area, and on State and City tax revenues, are summarized below.

## The Impact of Construction

At full buildout, the Vision Plan envisions approximately 7.7 million square feet of new development in the Long Wharf area, including parking.

The Plan also encompasses a series of public investments – in new parks, stormwater management, waterfront amenities and coastal protection – needed to support the developments outlined above.

As noted above, all of the Enabling Projects cited above are assumed to occur during the first five years.

Using construction cost estimates from Langan Engineering and other sources, Appleseed estimated total construction spending (both hard and soft costs) for the uses envisioned under

1. In addition to the direct impacts summarized here, Appleseed analyzed the indirect and induced (or "multiplier") effects of construction spending and ongoing operations under the Vision Plan on the economy of New Haven County. The results of this analysis are provided in the Appendix



*Figure 98. Direct Impact of Vision Plan at 10-Year Buildout  
(Jobs in person-years; earnings, value-added and output in thousands of 2018 dollars)*

District	Jobs	Earnings	Value-added <sup>3</sup>	Output <sup>4</sup>
Gateway	433	\$29,647.5	\$32,468.2	\$63,581.4
Innovation	42	2,864.0	3,171.2	5,906.1
Market	867	59,211.4	65,553.7	130,057.2
Parkway	579	39,699.0	43,593.5	92,029.0
Harbor	1,180	80,821.8	88,692.4	183,517.2
Subtotal	3,101	\$212,243.3	\$233,749.0	\$475,090.9
Public improvements	796	43,856.2	49,091.7	96,850.0
Total	3,897	\$256,099.5	\$282,570.7	\$571,940.9

each of these scenarios. Using the IMPLAN input-output modeling system – a modeling tool commonly used in economic impact studies – total construction expenditures by use were used to estimate the impact of such spending on employment, earnings value-added and output.

**Figure 98** presents the impact construction

spending during the first ten years – for each of the districts defined in the Plan and for the Long Wharf area as a whole. We estimate that construction spending during this period would support 3,897 person-years of employment<sup>2</sup> in construction and related industries as well as the following **Figure 98**.

*Figure 99. Direct Impact of Vision Plan at Full Build-out  
(Jobs in person-years; earnings, value-added and output in thousands of 2018 dollars)*

District	Jobs	Earnings	Value-added	Output
Gateway	1,293	\$88,644.7	\$97,302.2	\$190,797.6
Innovation	116	7,918.8	8,800.3	16,092.6
Market	2,196	150,039.4	165,158.1	333,090.1
Parkway	1,736	119,083.8	130,766.4	276,060.8
Harbor	5,992	410,666.4	450,289.9	933,876.9
Subtotal	11,333	\$776,353.1	\$852,312.9	\$1,749,838.0
Public improvements	796	43,856.2	49,091.7	96,850.0
Total	12,129	\$820,209.3	\$901,404.6	\$1,846,688.0

**Figure 99** presents the impact of Vision Plan construction spending at full buildout. We estimate that at full buildout, such spending will have supported 12,129 person-years of employment in construction and related industries as well as the following **Figure 99**.

2. A person-year is equivalent to the total time worked by one full-time worker over the course of one year. In this case, 3,897 person-years are equivalent to an average of 390 full-time-equivalent jobs in construction and related industries each year for ten years.

3. Value-added represents the value created by a particular activity (in this case, construction), minus the cost of purchased inputs.

4. Output represents total sales by the contractors engaged directly in new construction under the Vision Plan; it equals the total cost of construction and related activities.

Figure 100. Direct impact of construction under No-Action Plan  
(jobs in person-years; earnings, value-added and output in thousands of 2018 dollars)

District	Jobs	Earnings	Value-added	Output
Gateway	175	\$11,931.6	\$13,178.0	\$24,310.3
Innovation	64	4,349.6	4,782.9	8,968.8
Market	298	20,181.3	22,884.9	41,454.3
Parkway	--	--	--	--
Harbor	45	3,061.0	3,373.5	6,423.9
Subtotal	582	\$39,523.5	\$44,219.3	\$81,157.3
Public improvements	--	--	--	--
Total	582	\$39,523.5	\$44,219.3	\$81,157.3

Figure 100 presents the impact of anticipated construction spending in the Long Wharf area under the no-action alternative. We estimate that such spending would support 582 person-years of employment in construction and related industries.

### The Impact of Operations

Based on the projected square footage for each of the uses included in the Vision Plan, Appleseed estimated the number of jobs that the newly-developed space would support – in retailing, restaurants, hotels, residential building operations and maintenance, health care, technology and professional services.

Figure 101. Direct impact of ongoing operations of new Vision Plan developments after 10 years  
(earnings, value-added and output in thousands of 2018 dollars)

District	Jobs	Earnings	Value-added	Output
Gateway	426	\$30,584.7	\$31,654.2	\$48,440.6
Innovation	123	6,985.7	7,665.3	12,345.7
Market	236	10,292.9	18,462.4	26,715.8
Parkway	50	1,550.1	2,241.6	3,553.1
Harbor	363	14,183.0	20,319.9	33,051.9
Total	1,198	\$63,596.4	\$80,343.3	\$124,107.1

Appleseed estimates that after ten years, newly-developed space in the Long Wharf area would directly support as in Figure 101.



Figure 102. Direct impact of ongoing operations of new developments under the Vision Plan at full buildout (earnings, value-added and output in thousands of 2018 dollars)

District	Jobs	Earnings	Value-added	Output
Gateway	1,273	\$86,333.1	\$90,837.8	\$138,195.7
Innovation	369	19,588.5	30,021.4	52,203.4
Market	312	6,554.2	9,819.8	9,671.8
Parkway	147	3,778.5	5,429.2	8,694.6
Harbor 5	1,385	65,609.3	71,837.0	134,492.1
Total	3,486	\$181,863.6	\$207,945.2	\$343,257.6

While much of the new development envisioned in the Vision Plan would occur on vacant or lightly-used land (such as surface parking areas), full buildout of the Plan would require demolition of a number of existing buildings. Some of these buildings are now partially or entirely vacant (or are expected to be in the future). Others, however, are fully utilized. Demolition of these structures to make way for new development is

thus likely to involve displacement of existing businesses and jobs. Our analysis of the impact of ongoing operations after the Plan is fully built out accounts for these displacement effects. Our estimate of the Vision Plan's direct impact employment, for example, includes only "net new" jobs that will be created in the area.

Figure 103. Direct impact of ongoing operations of new developments under the no-action alternative (earnings, value-added and output in thousands of 2018 dollars)

District	Jobs	Earnings	Value-added	Output
Gateway	367	\$28,001.8	\$28,903.3	\$42,453.8
Innovation	184	10,358.2	11,374.1	18,316.3
Market	300	11,243.2	19,340.6	28,978.4
Parkway	NA	NA	NA	NA
Harbor	103	3,367.7	5,985.7	10,612.4
Total	954	\$52,970.9	\$65,603.7	\$100,360.9

At full buildout, new developments under the Vision Plan would directly support as shown in **Figure 102**.

Under the No-Action Plan, job gains would be limited to 27 percent of the number of jobs supported by the full buildout of the Vision Plan. New development under the no-action alternative would directly support as **Figure 103**.

5. In addition to employment in businesses occupying newly-developed space in the Harbor District, this analysis assumes that the combination of nearby residential development, new retail and restaurant options and other new amenities will make existing office space in the District more attractive to prospective tenants, increasing occupancy in existing space by 100,000 square feet. Of the 1,500 new Harbor District jobs shown in Table 7, 1,000 are attributable to new development and 500 to increased occupancy in existing space.

## State and Local Tax Revenue Impact

The new development envisioned in the Long Wharf Responsible Development Plan, and the operations of businesses occupying newly-developed space in the area, would also generate increased tax revenues for both the City of New Haven and the State of Connecticut.

The full buildout of the Plan would occur over a period of at least twenty years, construction activity in the Long Wharf area would provide a recurring source of State tax revenue during that time. Such revenues would include:

- State personal income taxes levied on the earnings of workers directly engaged in new development under the Vision Plan;
- State sales and use taxes paid on construction material, supplies and equipment; and
- Corporate business taxes paid by contractors.

As shown below in **Figure 104**, Appleseed estimates that from the commencement of new development under the Vision Plan at full buildout, construction activity in the area would directly generate \$65.4 million (in 2018 dollars) in State income, sales and corporate business taxes.

*Figure 104. Cumulative total of state taxes generated by Vision Plan construction spending, through full buildout (2018 \$000's)*

Tax	State	City
Personal income tax	\$32,808.4	--
Sales and use tax	28,807.0	--
Corporations business tax	3,791.3	--
Total	\$65,406.7	--

As construction is completed and new buildings are occupied, new development under the Plan will continue to generate tax revenues for both the State and the City. For purposes of this analysis, we focus on:

- Personal income taxes of those employed by businesses occupying newly developed space in the area, and those employed in the operations and maintenance of newly developed residential buildings;
- Sales taxes paid on retail and restaurant sales and services;
- State hotel occupancy taxes;
- State corporate business taxes;
- Local real property taxes;
- Local personal property taxes paid by businesses; and
- Local motor vehicle taxes paid by residents

of newly developed buildings in the area.

The impact of new development under the LWRDP on the City's real estate tax revenues is addressed in the following section of this report. Impacts on other taxes are presented below in **Figure 105**. Appleseed estimates that after full buildout of the LWRDP is completed, these taxes will yield the following:

*Figure 105. Annual State and City taxes (excluding real property taxes) Generated from New Developments Under the PE Vision Plan, at Full Buildout (2018 \$000's)*

Tax	State	City
Personal income tax	\$7,274.5	--
Sales and use taxes	2,865.9	--
Corporations business tax	840.6	--
Hotel occupancy tax	2,587.0	--
Personal property tax	--	\$1,394.4
Motor vehicle tax	--	1,116.5
Total	\$13,568.0	\$2,510.9

In addition, the impact of new business activity and jobs in the Long Wharf area estimates account for displacement effects – lost State and City revenues resulting from the displacement of several businesses.



## Real Estate Tax Impacts

Real estate taxes for the new development were estimated on a per SF basis based on current assessed values for comparable properties in each of the land use categories. We assumed that the addition of the public parking garages will support buildout of the Vision Plan on land currently used for private surface parking, as well as provide parking for the existing uses that will remain as part of the Full Buildout. Therefore, any uses that remain in place will generate similar real estate taxes to what they currently pay with the City. Incremental new taxes will be generated by the new private construction. Real estate tax estimates for each district are indicated in the following table.

	Gateway	Innovation	Market	Parkway	Harbor	Total
PE Vision Plan 10-Year Buildout	\$2,917,603	\$465,541	\$3,447,423	\$1,994,452	\$5,578,510	\$14,403,528
Current Conditions	\$2,469,955	\$421,893	\$2,373,441	\$1,034,544	\$3,812,837	\$10,112,670
Incremental Impact at 10 Years	\$447,648	\$43,648	\$1,073,981	\$959,908	\$1,765,673	\$4,290,858
PE Vision Plan Full Buildout	\$3,812,899	\$552,837	\$4,869,386	\$3,914,267	\$11,896,327	\$25,045,716
Current Conditions	\$2,469,955	\$421,893	\$2,373,441	\$1,034,544	\$3,812,837	\$10,112,670
Incremental Impact at Full Buildout	\$1,342,944	\$130,944	\$2,495,944	\$2,879,723	\$8,083,490	\$14,933,046
No Action Plan	\$2,798,145	\$479,039	\$2,468,245	\$1,034,544	\$3,648,596	\$10,428,569
Current Conditions	\$2,469,955	\$421,893	\$2,373,441	\$1,034,544	\$3,812,837	\$10,112,670
Incremental Impact of No Action Plan	\$328,190	\$57,146	\$94,803	\$0	(\$164,241)	\$315,899

Figure 106. Annual Real Estate Tax Revenues by Scenario (2018 Dollars)

## Public Financing Impacts

### Costs of Enabling Projects

The cost of the Enabling Projects associated with the Vision Plan was estimated by Langan at \$140 million as shown in the chart below.

Costs, if necessary, to acquire private land for the Enabling Projects are not included in this analysis.

There are no public costs assumed for the No-Action Plan.

### Funding Sources

With guidance from the City, we have estimated that \$90 to 100 million of the Enabling Projects will be funded from federal or state grant sources. The balance of \$36-46 million is defined as the Gap between the cost of the Enabling Projects and the amount of Public Funds available. That Gap that may be funded using some form of Tax Increment Financing ("TIF") as indicated in the following table.

**Public Funding Sources**

	Greenway	Stormwater Park	Waterfront Wharf	Water Plan Permitting and Dredging	Long Wharf Park Resiliency (Living Shoreline and Flood Barrier)
<b>City General Funds</b> GENERAL FUNDS • CAPITAL	●	●	●	●	●
<b>Resiliency Funding</b> GREEN BOND • NOAA • CT DEEP	●	●	●	●	●
<b>Transportation Funding</b> CT DOT • US DOT		●			●
<b>Economic Development Funding</b> CT DECD • CT OPM • US EDA • US HUD	●	●	●		

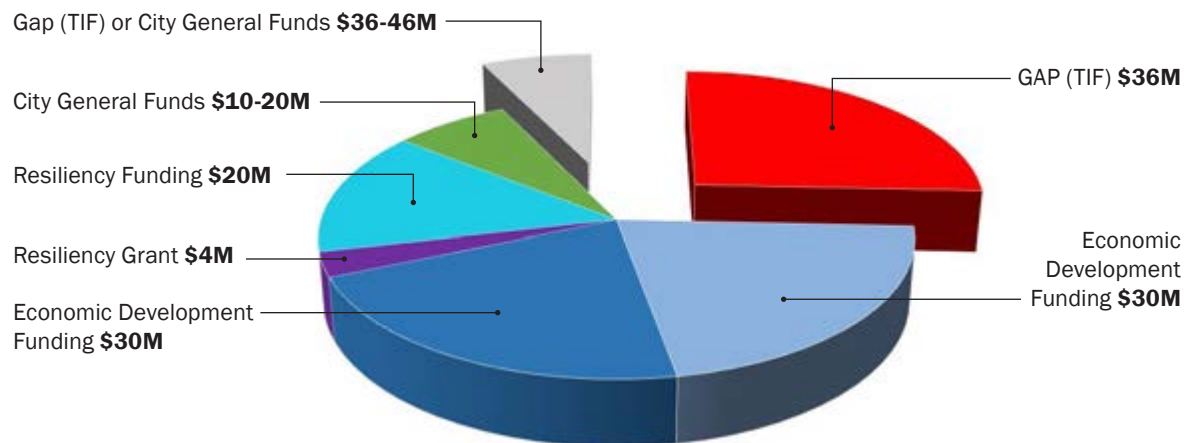


Figure 107. Summary of Costs of Enabling Projects and Sources of Public Funds



## Tax Increment Financing Analysis

Tax exempt TIF bonds are a financing vehicle that uses the incremental increase in real estate taxes generated by the new development benefitting from public improvements to pay the debt service. While there may be some exceptions, based on our understanding of current State laws, only the incremental real estate tax resulting from new development or renovations in the Long Wharf Study Area would be eligible sources of funds for payment of debt service on TIF bonds.

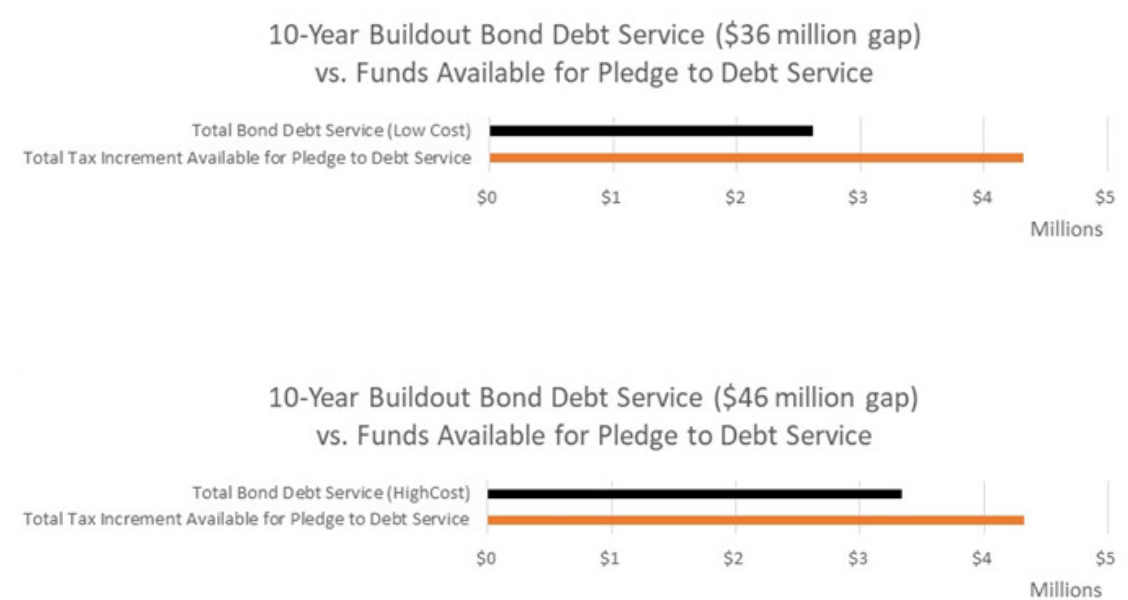
Assuming that the entire \$36 to \$46 million gap is financed by a TIF Bond with a 30-year term and 6% annual interest, debt service payments on the bond would range from approximately \$2.6 million to \$3.3 million per year.

Therefore, the incremental new real estate taxes by the Vision Plan are estimated to be sufficient to cover debt service payments.

The analysis illustrates that with all incremental real estate taxes pledged to repay the TIF bond, at the 10- year Buildout, there would be a revenue surplus of between \$0.95 million and \$1.7 million. At full Buildout, there would be a revenue surplus of between \$11.6 million and

\$12.3 million.

If these surpluses are combined with the other non-real estate tax revenue generated by the Vision Plan, they total between \$14.2 million and \$14.9 million at full buildout.



Full Buildout Bond Debt Service (\$36 million gap)  
vs. Funds Available for Pledge to Debt Service



Full Buildout Bond Debt Service (\$46 million gap)  
vs. Funds Available for Pledge to Debt Service



While the tables above indicate that at both the 10-year and 20-year buildouts, revenue is more than adequate to cover debt service payments on the TIF bond, one of the greatest challenges of the TIF structure will be funding debt service payments in the early years, prior to significant development in the Long Wharf District. Therefore, funding of these payments, prior to the point in time when incremental new taxes are sufficient to fully fund debt service, will

require alternative approaches to structuring the bond issue, all of which will impact the cost and amount of bond required. Potential structures may include:

- Adding capitalized interest payments to the bond amount for the identified time period (this is especially challenging because the time period before payments are fully fundable is not clearly defined)
- Structuring the bond so that interest-only payments can be made until such time when funds are sufficient to fund both principal and interest
- Funding the payment shortfall through other sources, such as special assessments, public benefit payments or other forms of credit enhancement



### **Risks of Not Implementing the Vision Plan**

- Existing businesses could decide to leave over time due to:
  - » Lack of amenities for employees
  - » More competitive locations
  - » Additional costs associated with required disaster recovery investments by property owners
- Potential for storm surge impacts as shown in the Disaster Resiliency Study if no public improvements
- Lack of storm surge protection could impact functioning of rail

### **What is NOT Included in the Analysis?**

- Does not include an analysis of an actual bond structure
- Does not include any analysis of potential revenue sources to the City or State based on a water plan for New Haven Harbor
- Does not include costs (if any are necessary) to acquire private land for public use. The estimate of such costs and analysis of possible approaches funding them may be approached at a later date

# Next Steps for Implementation

## Putting the Plan in Place

- Initiate and complete the process to adopt a master plan for the Long Wharf District to establish as the basis for zoning and development guidelines.
- Initiate and complete the process for designating the District as a Redevelopment Area to become eligible for use of TIF, obtaining all necessary zoning, and other public and community approvals
- Create a new organization or assign implementation, management and marketing responsibilities to an existing organization to act as a “one stop shop” to market the District and work with the multiple property owners to expedite development in accordance with the plan, kick starting early-on public projects such as the Public Market.
  - » The organization could act as the point of contact for implementing the Long Wharf District development
- » Work with existing and new property owners on implementing enabling project improvements
- » Help developers expedite planning/zoning approvals of specific projects
- » Create a “brand” and marketing campaign to bring recognition to the Long Wharf development to attract developers, investors, tenants and customers
- » Provide public incentives or partnerships that may be needed early on to attract developers
- » Manage, operate and maintain the new park system including events/concessions, or activities that may generate public revenues
- Create a detailed plan for the water and waterfront, including operations, activities, and uses that may provide potential revenue sources to the City or State
- Develop a parking plan for the public parking garages and determine the most logical phasing, ownership, construction, financing and management plan. Public parking garages would be sized and funded when private developers have commitments for new construction based on the certainty that private funds cannot support these garages, and evidence that market demand for those garages exist. An ownership, financing and management structure for these public garages should be developed as the Long Wharf plan is implemented over time
- Develop and plan for the Public Market which would be constructed as a public-private project depending upon the availability of the property in the Market District, the interest of the new land owner, and the timing of development to support the project. Despite these hurdles, the Public Market represents an important catalyst for development elsewhere in the District.



## Financing the Public Infrastructure/ Enabling Projects

- Work with the State, Federal and other funding sources to obtain grants and/or loans for the public improvements to offset the amount needed for a TIF.
- Evaluate use of a financial structure (such as a General Obligation (“GO”) bond or other Tax Increment Financing (“TIF”) mechanism) to fund the balance of the enabling projects not funded by other public sources.
- Work with State agencies and legislature to create district boundaries, obtain approvals for site eligibility for use of TIF structure, obtain/seek approvals for multi-tax TIF.
- Determine the feasibility of funding a TIF for Long Wharf to vet the high-level analysis completed for this report. Approaches to fund the repayment of a TIF bond could include utilizing tax increments, benefit assessments or other means of providing credit enhancement to secure bond repayment and reduce the interest rate. The City needs to:
  - » Determine the most viable financial structure for a TIF or other mechanism, given the multiple land owners versus one land owner, and the unpredictability of timing, type of development and amount of incremental taxes over the term of the financing;
  - » Work with a tax increment financing expert/attorney in Connecticut that understands and has worked with State laws and regulations
  - » Identify the least costly approach to utilize private land for the public park and storm water improvements that will increase the value of property the landowners including use of an easement which creates public benefits for the landowners versus a “taking” requiring a payment, which could be quite costly
  - » Consider other public forms of credit enhancement to reduce risk to the City (i.e. State or City guarantees) as well as the cost of the financing
  - » Determine the potential to use not only incremental real estate taxes but other state taxes as well
  - » If possible, obtain local community approval
- Seek investor interest in use of investments in the recently federally approved Opportunity Zone for the Long Wharf District, providing investment incentives in real estate projects.
- Determine the potential to use Green Bonds for complementing other sources of funds.
- Identify Social Investment or Enterprise funds interested in lending capital at lower interest rates and returns.
- Private and/or foundation capital
- Work with the State to examine the potential for creating new tax incentives to attract businesses and new development, similar to those used in Rhode Island and New Jersey, which provide sellable tax credits for new construction.

## Equity and Sustainability – Values & Implementation Goals

The implementation of the Long Wharf Sustainable Growth Plan is an opportunity to promote sustainable and equitable solutions to increase our City's resiliency and create long-standing benefits for New Haven residents.

To this end, the New Haven Climate and Sustainability Framework, as well as other widely recognized benchmark frameworks such as the UN Sustainable Development Goals for Cities, LEED for Cities, SITES, and Living Communities Challenge, are useful tools for further consideration in setting sustainability and equitable development goals for Long Wharf.

### SUSTAINABILITY

#### Energy

Thirty-three percent of New Haven's greenhouse gas emissions come from electricity generation. The Long Wharf Plan is an opportunity to employ innovative solutions to meet New Haven's energy reduction goals. Opportunities include:

- Creating an Energy Improvement District
- Evaluating the use of micro grids to increase resiliency
- Incentivizing solar energy production in both residential and commercial buildings
- Setting a high benchmark for energy efficiency in new developments in Long Wharf



*Figure 108. IKEA, which features the largest solar array in the State of Connecticut offers an example of how Long Wharf is already off to a robust start in taking advantage of these opportunities*





Figure 109. Green Roofs over Industrial Buildings

## Water

Large impervious surfaces and outdated drainage infrastructure have exacerbated flooding in the Long Wharf area. In anticipation of an increased incidence of heavy precipitation, the City recognizes the need to integrate green infrastructure into the public realm. The Long Wharf Plan is driven by a green infrastructure approach that also integrates public amenities in recreation spaces and alternative transportation routes. Additional opportunities for sustainable water practices include:

- Limiting impervious surfaces
- Creating incentives for individual property owners to install green roofs and water-saving measures such as grey water recycling and rain water harvesting
- Implementing a district-wide water banking system
- Creating a closed loop water system to supply all of the area's water through captured precipitation or recycling of water

## Materials Management

Connecticut's trash incineration rate is the highest in the country, contributing to air pollution in our communities. In its new sustainability framework, the City of New Haven embraces a zero-waste approach to materials management, aiming to view by-products of production and consumption not as waste, but as valuable resources to be conserved. Waste reduction must be approached through a multitude of methods—reducing the production of waste, as well as increasing opportunities for recycling and composting. The implementation of the Long Wharf Plan can include multiple waste reduction methods, such as:

- Exploring creative district-wide waste management solutions, including the potential of a community-level composting program
- Providing recycling bins in community and green spaces in the Long Wharf Area
- Exploring creative opportunities to reduce food waste, including expanding food waste reduction programs



Figure 110. Urban composting

- Developing a program to ensure high recyclable capture rates in Long Wharf area restaurants, workplaces, and residences
- Encouraging businesses, particularly in retail, to reduce single-use packaging
- Aiming for the ultimate goal of achieving net-positive waste, with all waste captured and reused on site





Figure 111. Proposed Bike Lanes along the Greenway

### Transportation

A sustainable transportation network supports the mobility needs of current and future generations while doing the least damage to the environment. While many users will need or choose to access Long Wharf by car, it is important to provide accessible opportunities to travel to and within the Long Wharf area by public transportation and by walking and bicycling.

The five districts in the Long Wharf Plan are walkable in scale and connected by the Greenway and a network of Complete Streets and linear parks. Green infrastructure and public gathering spaces will ensure that these multimodal corridors feel vibrant and attractive to pedestrians and cyclists. Protected bike lanes are proposed for roads expected to carry high traffic volumes. Proximity to Union Station allows users to arrive by train, and the Plan proposes a tunnel connection to facilitate access to the Long Wharf Area from the train station. To maximize the accessibility of the Long Wharf Area through multiple modes, further attention should be given during the implementation to:

- Working with CT Transit to ensure that Long

Wharf is accessible by bus from all of New Haven's neighborhoods

- Creating safe and pleasant routes for pedestrians and cyclists to access Long Wharf from the adjacent neighborhoods of the Hill, City Point, and Wooster Square

### Human Health

Implementation of the Long Wharf Plan will have positive effects on human health for those who work, live, and play in the area. The extensive network of parks and plantings will serve to mitigate the noise and air impacts of the adjacent highway. The Greenway and other green spaces will provide opportunities for active and passive recreation, serving to promote exercise and wellness. These parks and green infrastructure also result in a biophilic environment that will have positive impacts for mental health.

Additional thought should be given during implementation to reducing any health impacts of construction, and to ensuring that Long Wharf's greenway and open spaces are accessible to all residents of New Haven.

## EQUITABLE DEVELOPMENT

Equity is commonly defined as the guarantee of fair treatment, access, opportunity, and advancement for all people, while striving to identify and eliminate barriers that have prevented the full participation of some groups. With the scale of investment and growth opportunities included in the Long Wharf Plan, it is important that equity be a guiding principle of the implementation process, to ensure that these investments help meet the needs of all of New Haven's residents.

### Process

In the creation of any plan, it is vital that community engagement be inclusive, accessible, and authentic. The community outreach that started with the development of this plan must continue into the implementation process. Those communities which will be most impacted by changes at Long Wharf must be actively engaged, with special attention given to address any barriers to participation in the engagement process. There must be active and ongoing accountability.



*Figure 112. Proposed Public Spaces: Designed in such a way that is welcoming and safe for all visitors, regardless of race, gender, class, sexual orientation, disability status, or immigration status.*

### Access

While implementing the Long Wharf Plan, we must make sure that all of New Haven's residents have access to the district's community spaces, parks, and other amenities. Public spaces should

be designed in such a way that is welcoming and safe for all visitors, regardless of race, gender, class, sexual orientation, disability status, or immigration status. This can be ensured through active engagement of these communities through multiple stages of the implementation process.





Figure 113. Proposed Public Spaces: An opportunity for public art and cultural event programming to be included in public spaces to include diverse communities.

Attention should also be given to ensure that the area is accessible by public transportation from all of New Haven's neighborhoods, and that there are walkable and bicycle connections to adjacent neighborhoods. Additionally, there is an opportunity for public art and cultural event programming to be included in public spaces to include diverse communities.

### Housing

At community workshops about the Long Wharf Plan, community members expressed that affordable housing is a strong priority for the area. In implementation, it should be ensured that new residential development at Long Wharf adds a mix of housing options for low, middle,

and high-income residents. Currently, the New Haven Zoning Ordinance does not permit residential uses in most of the Long Wharf area; in the re-zoning process for the Districts, creative strategies should be utilized to ensure this mix of housing options. Affordable housing can also be promoted through incentives for developers, or by setting a district-wide standard.

### Economic & Educational Opportunities

The build-out of the Long Wharf Plan will create thousands of jobs in a variety of sectors, including construction, retail, restaurants, hotels, healthcare, technology, and professional services. During implementation, it should be ensured that these jobs are made accessible to New Haven residents, such as through contracts with New Haven Works, a local non-profit that connects qualified New Haven residents to employers for job placement. New Haven Works already has contracts with several employers in the Long Wharf Area, such as Yale-New Haven Hospital, Ikea, and Jordan's Furniture. The Long Wharf Plan also provides a rich ground for innovation and collaboration. Local educational institutions, community organizations, and entrepreneurs can take advantage of the growth of these new districts to enact creative partnerships, businesses, and programs.