

UNION STATION CORRIDOR
PLANNING AND DESIGN CHARRETTE



JANUARY 4 - 5, 2019

A WORKSHOP WITH COMMUNITY AND DESIGN & PLANNING PROFESSIONALS
TO EXAMINE THE FUTURE OF THE UNION STATION CORRIDOR

NEW HAVEN
URBAN
DESIGN
LEAGUE

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Union Station Corridor, study area for “Flash Charrette”
-- site of proposed Connecticut Department of
Transportation parking garage, outlined in orange.

Cover: View of new plaza in front of Union Station. Plan
by George Knight, watercolor by Wladyslaw Prosol,
from the 2011 Community Charrette on Route 34 and
the Union Station, organized by the New Haven Urban
Design League and volunteers.

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Section I: Introduction & Project Purpose

The Connecticut Department of Transportation proposal for an additional parking garage at New Haven’s Union Station has been controversial since the first plans, and the Environmental Impact Evaluation, were made public in 2016. Community concerns about the State garage project focused on the impact of increased traffic on congestion, air quality, public safety, the deleterious effect of a single-use parking facility on the neighborhood, and the profoundly incongruous design the State offered. In the fall of 2018, the State advanced a new design, which did not address community concerns. This prompted the New Haven Urban Design League to bring planners, engineers, architects and urban development experts together in a “Flash Charrette” to look at alternatives to the garage — alternatives that would create greater public benefits. The “Flash Charrette” teams examined current conditions in the Station’s urban setting, the condition of Union Avenue, and the characteristics and potential of the particular parcel of land the State proposes to use for the additional garage.

This report describes the work of community participants and a team of planning professionals, done during a 24-hour period, on January 4 and 5, 2019. The time available our work was limited by the State’s deadline for public comment on the project (which was extended). Even with these constraints, the “Flash Charrette” project has created compelling ideas for how to use this key parcel. We can change Union Avenue from being, in planner’s parlance, an undervalued “sacrifice zone” — where giant facilities and infrastructure can be dropped with minimal consideration of the thousands of people who live and work in the area — to becoming instead a great and prosperous urban place.



Connecticut Department of Transportation proposal for an additional parking garage at Union Station, CHA Consulting, 2018, view West towards existing garage and train station, above; bird’s eye view of combined garages below.



Union Station, the City Beautiful Movement, and our opportunities today

When our city's magnificent Union Station, designed by Cass Gilbert, was built in 1918, it was a central part of the New Haven Civic Improvement Committee's work to create a master plan for the city and to foster key public projects of high distinction. Union Station, the Ives Memorial Library, the New Haven County Courthouse, the Federal Courthouse and New Haven's emerald necklace of parks were all part of this effort, inspired by the City Beautiful Movement and the effervescence in architectural thinking coming out of the Chicago World's Fair of 1893.

New Haven's great projects of this era were beautiful, substantial, magnanimous and useful. Together, they showed New Haven to be a place of cultural consequence and economic competence. Union Station was almost destroyed during the Redevelopment Era. Fortunately, Union still stands today, a warm presence in the light of day, and shining like a giant lantern at night — a welcome sight from the street or from across the tracks. New Haven Union Station stands as one of the state's most beautiful and cosmopolitan train stations. We are fortunate, now that transportation planning is rediscovering the value of rail, to have retained this resource and the opportunity, one hundred years after the Station was built, to fulfill its promise. Union Station still has the potential to be the heart of our new economy, and the foundation of sustainable and humane urban development.

1875 map of New Haven, showing trolley lines and Union Station (lower center). The hospital is on the left centered in a large open space. A trolley line runs from the Green around two sides of the city hospital. At that time the hospital was a local institution, so unlike today, no direct transit link was needed to the train station.



Union Station New Haven, 1918, Cass Gilbert. (Wikipedia photograph), is considered one of the "great railroad stations" in the U.S. and is listed on the National Register of Historic Places.



In 1918, the rail system, combined with the port, were the foundation of a booming industrial economy. Much of the urbanism which people think of as most characteristic of our city, and most beloved, derived from forms and scale most suitable to a city served by trains and streetcars.

State and Federal governments are both reinvesting in rail — commuter-rail and high-speed rail — in order to rebuild cities and towns and reduce highway congestion and air pollution. Transit Oriented Development (TOD) has been a central goal for the State for at least 20 years now. During this time, the definition and understanding of TOD has evolved. Early on, many projects, though adjacent to train stations, were not intrinsic to their function, nor were these projects designed to make the highest and best use of this valuable urban land.

The current Connecticut DOT proposal for an additional parking garage to be build at Union Station came out of this early period, when the reflexive thought was to maximize the amount of commuter parking. Since the new State garage was proposed, studies by transportation experts have shown that building a garage has the same result as building new highway lanes — both induce more demand, and the congestion and parking supply problems are amplified.



Norman Garrick et al., University of Connecticut Transportation Institute, map of surface parking in New Haven, 1951

The solution to congestion and parking supply problems is to build all manner of alternatives — walkable streets, mixed-use developments near stations, improved public transit, and safe bike lanes. These investments in “alternative” transportation modes are key to unlocking the enormous value of land around train stations.



Norman Garrick et. al., University of Connecticut Transportation Institute, map of surface parking (red) and structured parking (orange) in New Haven, 2008, a 200% growth since 1951. Additional surface and structured parking lots have been built since 2008.

Furthermore, parking expansion damages the tax base and reduces jobs. Parking garages pay little in taxes and employ few people, as studies by the University of Connecticut Transportation Institute, under the direction of Dr. Norman Garrick, have shown. Total parking supply in New Haven has increased by over 200% between 1951 and 2008 (see graph page 7).

New Haven has limited land for development. It is bound by the harbor to the South, and by East and West Rock on the north. Over 50% of the city’s grand list is government or non-profit owned, and therefore exempt from property tax.

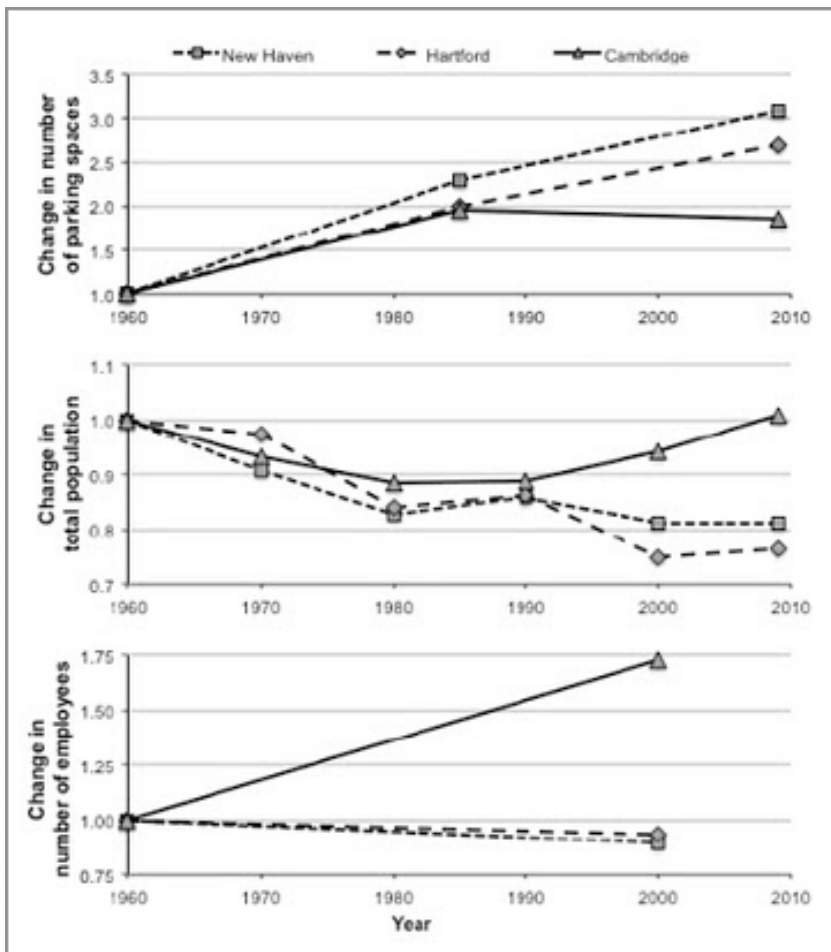
Many American cities are beginning to rediscover the value of train stations. As Robert Orr, FAIA has said:

“[There is a] trapped geyser of value in the land directly around train stations...The first development in Europe after WWII was around train stations. The highest return on investment is around train stations. The largest municipal tax revenue is around train

stations. The most desirable and sustainable place to live and work is around train stations.

“Most cities across the country are in a panic trying to attract train stations for developers to build around. My guess is that more than half of Stamford’s property tax revenue comes from properties in a small radius around their train station. A quick investigation of Stamford during the “Flash Charrette” and found that the properties just at the corners of the station yield \$10 million in property tax. No doubt that [value] goes up exponentially as one includes everything crowding in to be near the train station.”

Understood in this context, the Connecticut Department of Transportation proposal to locate a single-use facility to serve 1,000 cars at a cost of 60 million dollars is poor stewardship of a public resource. The project, while having little impact on improving access to Union Station or reducing highway congestion, would snarl major city streets. Ultimately, the proposed garage fails even as a transportation project. The garage would employ few people and pay no taxes. The City needs projects that will expand its tax base, and the State has a responsibility to all taxpayers in Connecticut to foster growth and fiscal stability.



Parking growth is correlated with population reduction and job losses. New Haven and Hartford continued to expand parking through the late 20th century, and both saw reductions in jobs and populations. In 1981, Cambridge changed zoning regulations to limit parking growth, and saw dramatic job growth. Norman Garrick et al., University of Connecticut Transportation Institute.

Section II: Method for the Union Station “Flash Charrette”

The purpose of the “Flash Charrette” was to look at other potential uses for the site where the State of Connecticut has proposed building a 1,000+ car parking garage.

Although time available for the charrette was limited, we looked to build in two “feedback loops” for public comment. The event opened on Friday, January 4, 2019, with a two-hour session where the public could look at current plans for the area and share ideas with the Charrette Team. Plans developed by the State of Connecticut, the City of New Haven (including projects from Departments of Economic Development; City Plan; Livable City Initiative; Transportation, Traffic and Parking; Park New Haven), SITE Projects, and various private developers were available for review.



Public input session on Friday January 4, 2019. Members of the public review plans for the area and share ideas with City Officials and “Flash Charrette” team leaders.

On Saturday, January 5, 2019, the Charrette Team started working together.

The Team discussed planning priorities and challenges, and determined that the work should be focused on three planning levels — Macro-Planning for the district, planning for Union Avenue, and studies for the specific parcel of State-owned land where the garage is proposed.

Wladyslaw Prosol, architect and illustrator, worked with the Teams, creating sketches during the day of their ideas for street design and buildings. In the week after the charrette, Mr. Prosol used these sketches to create watercolors of two design concepts for Union Avenue — a medium-scale project by Robert Orr, and a large-scale project by Fereshteh Bekhrad and Richard Wies. Both watercolors incorporate elements of the street design created by the Union Avenue Team.

Christopher “Kip” Bergstrom offered expertise on development design, financial performance, the context of regional rail planning, and connecting proposed uses for the site to the growing innovation economy in Connecticut and New Haven.



Jonathan Hopkins (right), charrette facilitator, discusses Union Avenue design with Ryan O'Hara



Ben Ledbetter, Gioia Connell, Monica Perez del Rio and Douglas Hausladen discuss macro-planning concepts.

The professional Charrette Team also organized their thoughts in written lists, compiled by Monica Perez del Rio, regarding: 1) Arguments Against the Garage Proposal; and 2) Alternatives to the Garage Proposal (see pages 31 -33).

The public returned at the end of the day on Saturday to review what the Charrette Team created and to offer further comment. This report summarizes the event's work.



Above, architects Richard Wies and Fereshteh Bekhrad still at work on their massing and development plan when the public begins to arrive for the second review on Saturday, January 5, 2019; below, attendees hear the team's presentations.



Section III: Public Comment and Information Session

Public Comment Question A: What Would You Like To See Developed On Union Avenue?

- Protected bike routes that are safe for all users, including children and the elderly
- For safety, cars parked on street-side of bike lane, rather than sidewalk side
- Real great retail
- Amusement park
- Buildings and amenities for people, not cars
- Some place to sit and drink coffee while you wait for your train, like they do in Europe, why not here?
- Open space to hang out in
- Interesting, non-generic architecture
- Trees, color, welcoming feeling, and retail
- Not a parking garage!
- Better, nicer connection to Downtown
- Move food trucks to Union Avenue
- Baseball stadium for minor league team
- Open space, gardens, trees, pedestrian walkways, and bike paths
- 2011 Route 34 Community Charrette plan much better than Northland plans
- Public art everywhere!
- Micro grid and utility coordination to support more renewables and lower costs to operate busses and give tax shelter options to Downtown / Hill / others investing in TOD [Transit Oriented Development] center
- More street life: awnings, color, and sidewalk life near the Station, as seen in the 2011 Community Charrette concept



The public information session “favorite,” a view of new plaza in front of Union Station. Plan by George Knight, watercolor by Wladyslaw Prosol, from the 2011 Community Charrette on Route 34 and the Union Station, organized by the New Haven Urban Design League and volunteers.

- A genuine gateway to the city that is vital because it is cared for. Residential, commercial walkable / bike ability, connected, trees, art, mixed-income development
- Yes! All of these qualities [above] contribute to vital community life. Consider the traveler together with the local neighborhood population...the transient* population as with those who live* and work* in proximity and use these transportation facilities
 - *Safety, scale, hospitality / welcome, etc.
- Encourage retail -- attractive shopping as at Grand Central Station NYC. Open indoor market year-round
- Avoid [do not build] tunnel to L.I. Sound [side of railroad tracks]. Consider sea level rise, potential of storm surges, [while still finding ways to] encourage access to open areas and to L.I. Sound and adjacent parkland
- Consider water transportation access connecting to rail and bus transit
- Retain and expand current transportation hub of rail and bus
- Consider a garage that can be repurposed when we move off SOVs [Single Occupancy Vehicles]

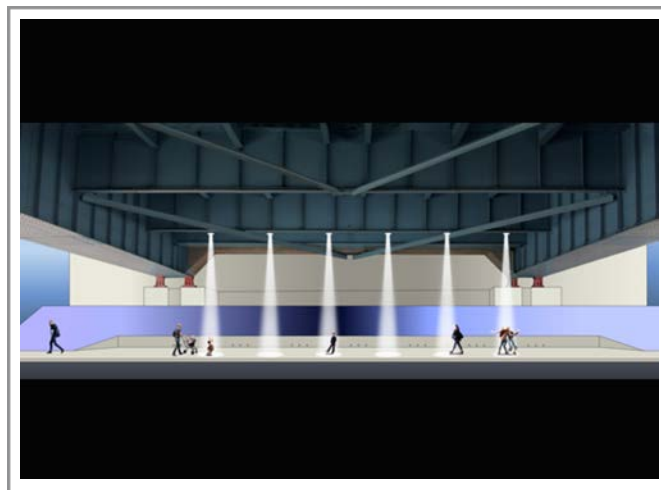
Public Comment Question B: What Do You Think is the Most Important Transportation Investment for New Haven and the Region?

- High speed rail to N.Y. and Boston
- More rail service of all kinds
- Bikeways (dedicated, protected), safe for elderly and children
- Rail to NYC
- Education about transportation options
- Bike infrastructure that is cohesive, connected, protected
- Safe streets, good bus system
- Yes to all of the above. I think it is important to think comprehensively (consciously) about the larger scope of transportation whys and needs in the near future...i.e. tweed airport, water transportation via the harbor + the Sound for both access to the Station, central New Haven + Yale, etc.
- Easy, frequent access to small electric buses like Yale's and SCSU's [Southern Connecticut State University] to get around more easily from the RR to central New Haven + the adjacent neighborhoods
- Yes! [to previous comment] A complete rethinking of the local public transportation system; easy frequent (or at least reliable!) transport to all parts of the city (and region)
- Bike facilities — high return on investment

- Public bicycle counting signs with digital displays showing how many more people bike everyday than park in a \$60 M parking garage
- Ban cars from the city core: no off-highway autonomous vehicles, dedicated autonomous vehicle lanes only on highways
- Less parking and more frequent rail and bus service
- Overhead tram connecting Union Station with Downtown

Public Comment Question C: What Barriers Do You Experience to Connectivity Between Union Station and Where You Work and Live?

- Lack of bicycling infrastructure
- Automobiles and dangerous traffic lanes
- Dark deserted surroundings at night
- Fast traffic!
- Need electric bicycle rental (Jump), better lighting, and greenery.
- Underpass and huge parking lots
- Streets are difficult to cross
- Priority of cars over all else
- Too many cars, too much parking
- Grey, unwelcoming, nothing to make you want to walk, linger
- Highway underpasses along the entire route: State Street, Upper State Street, Union Avenue, Sargent Drive, Long Wharf Drive
- Lighting, arts and activity needed
- Need electric charging stations
- Need coworker spaces for local businesses and incoming workers along the Metro North MTA line [commuter rail network]
- Random design thoughts: please consider the use of large marquees an buildings for rain cover and shade to ease pedestrian access in lots of different kinds of weather. Consider distance and various handicapped accessibility issues in addition to scale and open-space.



"Lighting Your Way" -- the SITE projects design for improving the passageway under the Route 34 bridge, will be built as part of the next phase of Downtown Crossing.

Section IV: Macro-Planning for District

Leaders:

Jonathan Cook, Pickard Chilton Architects

Gioia Connell, Yale School of Architecture

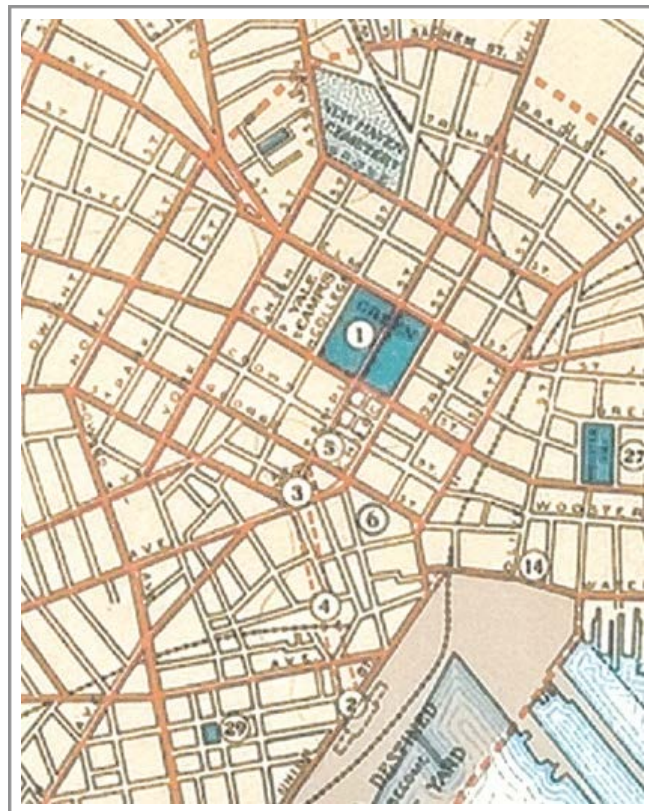
Ben Ledbetter, Yale School of Architecture

The Macro-Planning team worked to evaluate the large scale urban context of the site where the Connecticut Department of Transportation has proposed building a second parking garage. The site has the potential, if built out properly, to have a positive impact and solve key urban planning challenges in the area.

Traffic congestion and snarled streets were major planning challenges even in 1918 when Union Station was first built. The New Haven Civic Improvement Committee laid out new and improved avenues, including a grand, tree-lined boulevard to connect Union Station to the Green.

Not only did these plans not come fruition, but the physical structure of this area was destroyed by “Urban Renewal” projects. Over 60% of our Downtown was demolished. The Route 34 Connector was built over much of this giant swath of demolition. The new Oak Street Connector sundered the relationship between Union Station, Downtown and the West side of the city.

Redevelopment era projects came to dominate the area — the Police station, Church Street South, Tower One and Tower East. All of these were important projects serving essential uses, but they shared the faults typical of developments of their era: they were conceived as individual projects, unrelated to each other or the city as a whole. Over time, this lack of holistic attention has made the area look and function as an urban “sacrifice zone” i.e., a place that is beyond repair, where uses with deleterious impacts, such as a giant parking garage, are thought to be appropriate.



Follow the dotted lines: In 1909, the New Haven Civic Improvement Committee proposed a major new boulevard to be established between Union Station (no.2 on the map) and the Green (no.1).

Today, the city is making enormous efforts to reconnect the two parts of the city's core in its Downtown Crossing plans, and in plans for State Street and major parcels in the area. The effort to rebuild the city's core is possible because, although much was destroyed during Redevelopment, key places such as Union Station remain. Rebuilding the area requires that we look for the highest and best use for every major parcel in the vicinity of Union Station.

The proposed garage would undermine the effort to reconnect the city and the massive investment of millions in Federal TIGER funds, and undermine the effort to build new complete streets across the Connector by creating a new barrier between Downtown and the train station. The City of New Haven, supported by a major 1.3 million dollar grant from the Department of Housing and Urban Development, has established a new, award-winning, conceptual plan for the area — the "Hill-to-Downtown Plan."



Concept for reconnecting the Hill neighborhoods, Downtown and the Medical District, City of New Haven, TIGER grant proposal, 2011. Union Station is in foreground across from Church Street South (grey-shaded triangle). Union Station stands as a substantial civic monument, but it is in an area hobbled by a degraded street grid.

The street grid is difficult to navigate, causes traffic congestion and danger, and inhibits movement across the southern regions of the city. The illustration reveals the contrast between the intact urban fabric of many areas of the Hill and Downtown and the large areas of land that are under-utilized and fail to fit the urban setting. Many of these parcels are Redevelopment Era "super-blocks" which lack intersection density and degrade the street grid. Rebuilding the street grid to support walkability, transit routes, and buildable lots would be a public investment of universal value.

The Macro Planning team studied this and other plans for the area, and offers these observations and suggestions:

A. Use land along this transit corridor to stitch together different districts in the city. Key intersections and streets need improvements to meet this goal.

Union Avenue at Water Street

The long and continuous route formed by State Street and Union Avenue is important to establishing the Northeast to Southeast axis across the city through Downtown. This axis is marred and jumbled where Union Avenue, State Street, Water Street, and the Rev. Martin Luther King Jr. Boulevard intersect at the Route 34 connector underpass. This key node needs to be re-engineered. It creates danger and confusion for people walking, biking and driving. The City of New Haven Transit Oriented Development study for Wooster Square offers a solution for repairing this intersection -- a solution which would also establish a better conditions for the development of Union Avenue in the train station area. Building a 1,000-car garage on a 300-car parking lot dramatically increases the car counts at this troublesome intersection. If a garage is needed, it should not go in a place that would amplify existing traffic problems.



The macro-planning team analyzed the primary and secondary streets, and local streets of the zone. A primary street system challenge at Union Avenue and Water Street is marked by a circle.

Design improvements are needed for the East side of the Route 34 underpass. A beautiful and well-conceived art installation by SITE Projects (a public art organization) will be constructed on the West side of Union Avenue at the Route 34 underpass. The project, called "Lighting Your Way," by Sheila Levrant de Bretteville. By adding light and color, "Lighting Your Way" will help mitigate the dark and dangerous feeling of the site.

The opposite side of the underpass is used now as a Connecticut DOT lay-down zone. This area will also need special design treatment to function well as part of this busy urban street, and complete the work started by "Lighting Your Way." The underpass is high enough to either build retail or provide space for pop-up retail along the sidewalk, while still allowing (and concealing) a lay-down zone in the rear.

Area-wide street grid

The entire street grid lying between Church Street South and Long Wharf Drive also needs to be restructured in order to strengthen the city's East to West links. The grid needs high intersection density to promote walkability, traffic flow, and buildable lots. To enable building to the higher densities desirable in the area, traffic management is key both to make the area attractive and to create a strong and functional East - West connection across the city.

Walking and transit routes to the Medical District and Yale New Haven Hospital (the State's largest employer) need to be created. The analysis of the area-wide street grid indicates two main routes for pedestrian travel: Union Avenue and Church Street. These need to provide a continuous, safe and enjoyable experience in order to create the synergy between the transit hub of Union Station, and the economic hubs of downtown and the Medical Area.

B. The Union Station area is both a neighborhood and a regional transportation system gateway. Plans need to work at both these scales.

While the exact plans and locations for high-speed rail stops are not yet known, New Haven is under consideration for this benefit. We need to ensure that current designs both allow and prepare for this opportunity, if we hope to have the benefits of high-speed rail -- including business expansion, job growth and tax base enhancement. Building a high-quality, safe, functional, and attractive environment is essential to being part of and benefiting from the regional high-speed rail system.

Managing parking demand is central to remaining competitive for high-speed rail development. Short-term, this means finding ways to manage current parking demand without sacrificing the future use of land for high value development. On the supply side, a robotic / automatic parking installation, perhaps on the Long Wharf side of the tracks, would offer greater unit volume density of vehicle storage and also greater flexibility for future removal as storage demand and land values change.



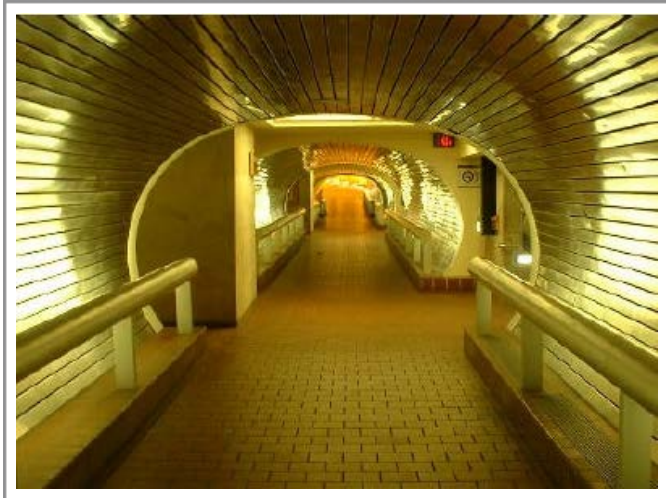
A plan developed by the City of New Haven for State Street between Water Street and Grand Avenue (Wooster Square TOD Study, 2016) narrows the roadbed to create parcels with sufficient depth along the East side of the street to allow new developments

The team further recommends that market research be conducted, with outreach to various populations, to determine what they would find attractive, and what would motivate them to live and work in this area. The survey should include current residents of Hill South, Church Street south, New Haven Housing Authority, employees at Connecticut DOT, Metro North, Yale New Haven Hospital, Yale Medical School, Gateway Community College, Knights of Columbus, and others.

C. Use pedestrian tunnels under the railroad tracks or green elevated walkways to improve connectivity and walkability.

Connecting Union Station to Long Wharf district could be accomplished by extending the current underground tunnel currently serving the train platforms all the way through to the Long Wharf side. This would support the City’s plans for redevelopment in the district, and improve access to the train station without adding traffic to Union Avenue. Unlike a bridge over the tracks, the tunnel would be able to serve all platforms, being an extension of the existing tunnel.

A tunnel to the Long Wharf side of the tracks would also facilitate any parking needed by Metro North and other rail system employees to be located where their new offices and repair sheds are now located. The Macro-planning team concludes that there is not a strong argument to put the garage where Connecticut DOT has proposed it. It is most urgent that the State address the problems in the area rather than adding to them. Rather than “solving” the self-created problem of parking demand, a better approach would be to focus on a holistic project that serves economic development, neighborhood revitalization, and environmental improvement.



The pedestrian tunnel serving the train platforms at Union Station could be extended to the Long Wharf side of the tracks to improve access to Union Station from the South side of the City, and reduce traffic demand on Union Avenue.

Section V: Making Union Avenue a Complete Street and a Safe Street

Leaders:

Ryan O'Hara, Transportation Engineer

Neil Olinski, Transportation Engineer

Union Avenue is one of the busiest streets in New Haven. The street accommodates people traveling on foot, bike, bus, shuttle, taxis, and by car. Union Avenue connects the Hill neighborhoods, Yale New Haven Hospital, Long Wharf and Downtown, and serves the Police Department, the Board of Education, the apartments at the Robert Wolf Tower and Tower One and Tower East, and will soon serve the thousands of new residents and businesses to be located on the rebuilt Church Street South development site.

Union Avenue is currently a designated State Highway (U.S. Route 1). The design of the Avenue's cross-streets, which intersect the roadway at irregular intervals and at odd angles, makes the street difficult for all users to navigate. Another serious design challenge is that the area is subject to flooding. The section of Union Avenue in front of Union Station is one of New Haven's most prominent gateways, which will become even more prominent after the new Church Street South development is built, and when the establishment of high-speed rail and the expansion of commuter rail increase the intensity of the area's use. Many buildings in the area, such as the police station, are uninviting, and illegible particularly for those unfamiliar with the City of New Haven, or who are using the station for the first time.

The team studied various past plans for the area, including the Community Route 34 Charrette (2011), the Hill-to-Downtown Plan (2014), and the Union Station Access Workshop report (2015), and various multi-modal transportation studies and maps included in New Haven's Comprehensive Plan of Development, and plans for the redevelopment of Church Street South. All of these plans look at different ways to make Union Avenue safer and more attractive for all people, but these existing plans provide no final solution to the area's infrastructure failures.

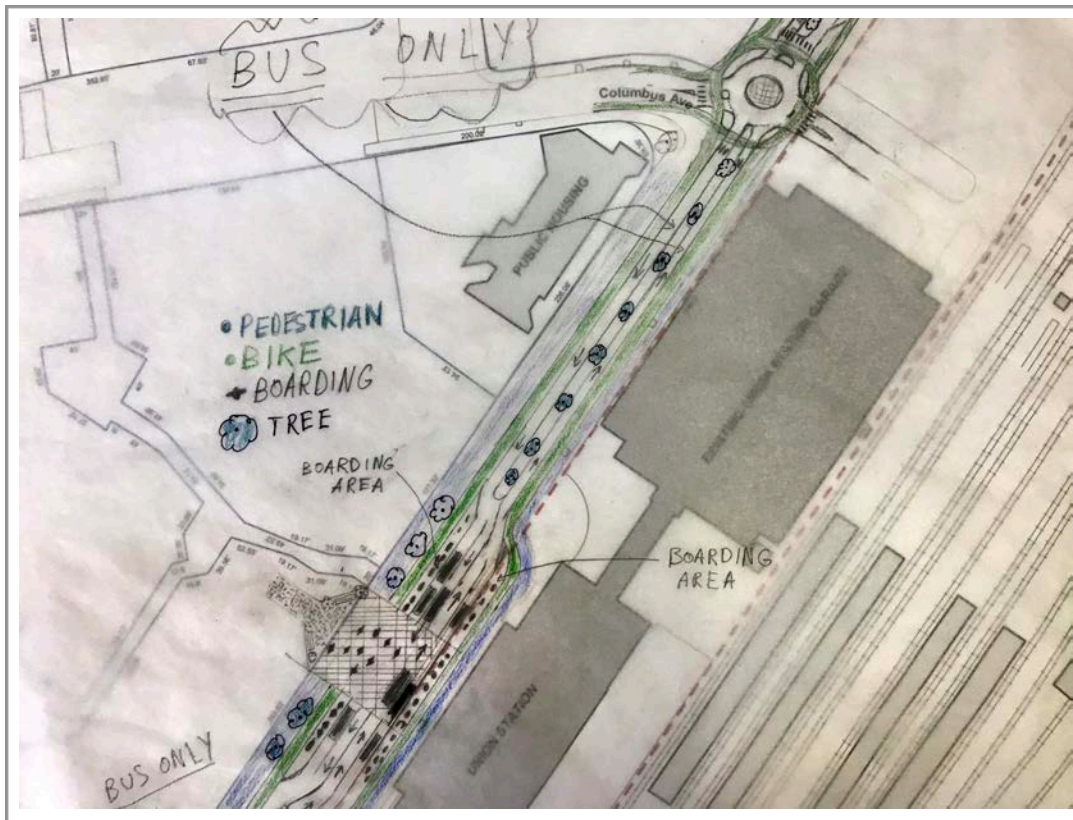
The team developed various ideas at the "Flash Charrette" including:

- Reduce and slow down vehicular traffic;
- Increase the tree canopy both to provide comfort to pedestrians and to calm traffic;
- Improve sidewalks and crosswalks, and shorten crossing distances, for pedestrian safety;
- Give people attractive destinations to walk to, such as restaurants and stores;
- Increase public transit and prioritize the movement of buses and bus stops;
- Improve safety for bicyclists through separated, comfortable, and protected lanes;
- Reduce the number of driveways, curb-cuts and vehicle-pedestrian/bicyclist conflict points, and increase the number of buildings facing the street;

- Convert the section of roadway in front of Union Station to be a “shared space” i.e., a walking and transportation plaza raised to curb level.

Two conceptual roadway plans were developed at the “Flash Charrette.”

The first concept is a road-diet for Union Avenue (4-lane to 3-lane conversion), which in fact aligns with an improvement recommendation for this street from the recently released CTDOT Connecticut Active Transportation Plan (http://www.ctbikepedplan.org/documents/CTActiveTransPlan_01-09-2019.pdf).

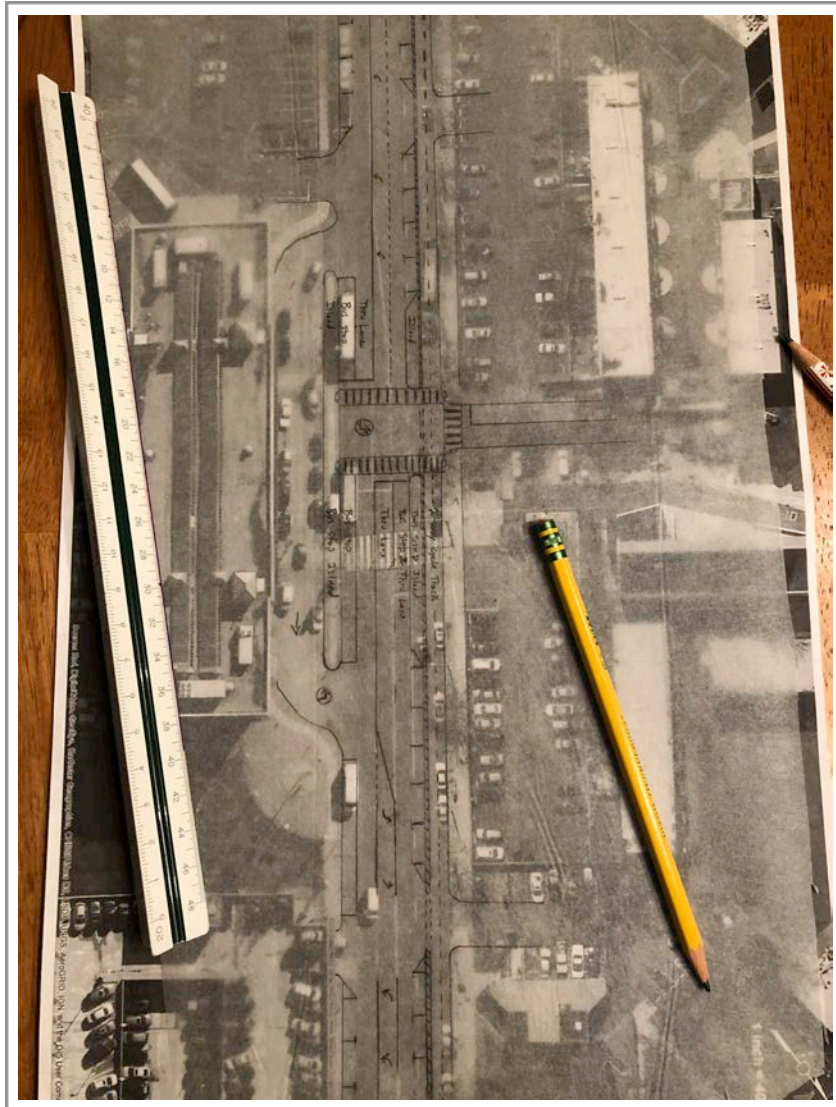


A two-lane shared-street concept showing Union Avenue converted to a transit-only street in the area adjacent to Union Station. Design elements include a landscaped median, bike lanes, enhanced bus boarding areas, a traffic circle at the intersection of Union and Columbus Avenues, and shared-street.

The second concept is for Union Avenue in front of Union Station to be converted to a two-lane street (with bus stop and boarding platform areas) that would service buses, pedestrians, bicyclists, and perhaps ride-share / taxi vehicles. The second concept would function as a low-speed Shared Street.

It should be noted that a road-diet is feasible for both conceptual roadway plans based on current daily traffic volumes, and will be even more feasible in the future because through-traffic will reroute when Columbus Avenue is extended east-west to Union Avenue at Orange Street South and Meadow Street to the east of Union Station. This extension of Columbus Avenue, which will reintroduce the street network that historically existed, will allow for any automobile through-traffic on U.S. Route 1 that is not specifically going to Union Station to reroute more directly around much of Union Avenue.

The team recommends that an in-depth charrette be held in the near-future, before plans are finished for Church Street South and other nearby developments, to establish a final plan for Union Avenue. An in-depth charrette should also consider further analysis of the demand side of parking and trip generation, and evaluate how shared mobility and the related possibility of multiple drop-off points around the station, would affect mobility patterns.



A road diet concept showing a change from the four-lane to a three-lane road for Union Avenue, with addition of a two-way cycle-track and enhanced bus boarding areas.

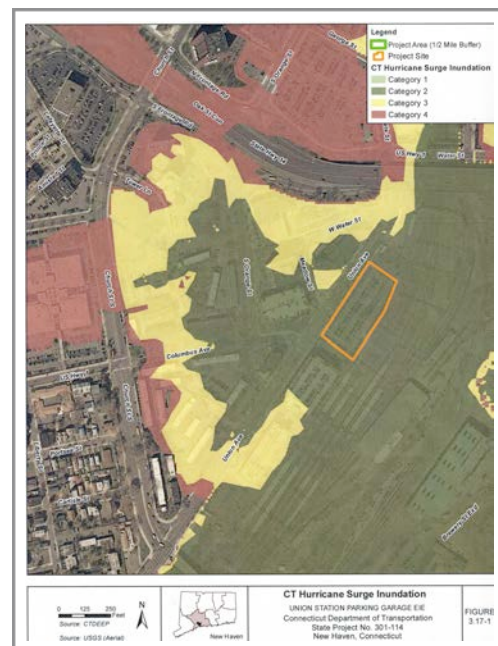
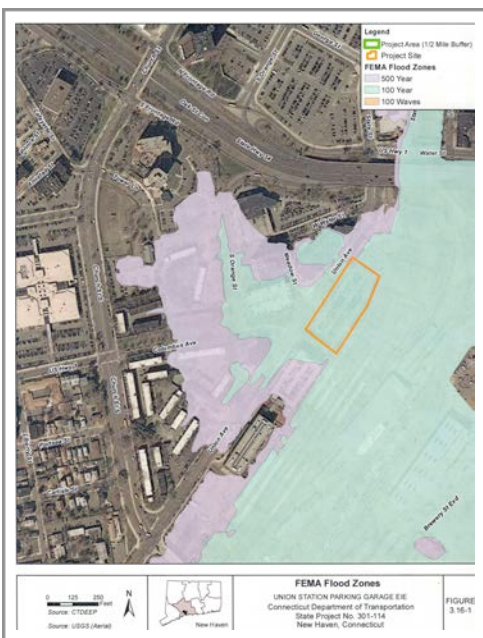
Section VI: Massing Studies for Union Station parking lot site

Site Characteristics and Key Planning Considerations

Located just East of the Union Station Area Parking Garage, the site is about 1.6 acres; its dimensions are approximately 400 feet x 180 feet x 150 feet. Two teams worked on concepts for buildings on the parcel where the State proposes the additional 1,000 space parking garage. The goal was to demonstrate the site’s potential to support high-quality urban fabric that would further key planning goals for the area:

- Reclaiming undervalued land with mixed-use, mixed income development
- Ensuring the quality and expansion of commuter and high speed rail service
- Transit oriented development and parking demand management
- Flood and storm surge mitigation and environmental improvements
- Compliance with Connecticut policies on conservation and development, Transit Oriented Development, and Smart Growth

The entire site (outlined in orange in the maps below) is in a FEMA Flood zone and in a Hurricane Surge Inundation area. For this reason, all habitable structures proposed for the area need to be built above the flood line, which requires at least a four-foot elevation above the current street level. Both massing proposals created in the “Flash Charette” are raised, *along with their sidewalks*, on platforms 4 feet above the current street level. (The proposed State parking garage raised the building above the flood line, but left the sidewalk at its current, low level.) Union Station has the potential to be at the heart of economic development and job growth for the city and region.



FEMA Flood zone and in a Hurricane Surge Inundation area maps. The entire development site, outlined in orange in the maps above, is within these zones, and requires mitigating design features, such as elevated buildings and sidewalks.

The nexus of rail systems converging in New Haven makes the land around Union Station enormously valuable, and worth the cost of infrastructure investments for flood and storm water control. As our highways have become highly congested, renewed attention is being given not only to high-speed rail, but also to in-State commuter rail.

High-speed rail, which could make it possible to travel to New York City in less than an hour, would be a great benefit to people and businesses located in the region. Failure to enhance rail service would leave the City and region competitively disadvantaged.

Since the adoption of the Connecticut's current Conservation and Development Plan in 2013, State policies have articulated the importance of appropriate of the land around transportation corridors and hubs. The 2013 plan (<https://portal.ct.gov/-/media/OPM/IGP/ORG/cdupdate/20132018FINALCDPLANrevJune2017pdf.pdf?la=en>) includes three related frameworks for evaluating appropriate development at transit centers. "Growth Management principle #3" articulates the ways and means of development, including:

P R O M O T E compact, pedestrian-oriented, mixed use development patterns around existing and planned public transportation stations and other viable locations within transportation corridors and village centers;
E N C O U R A G E a network of pedestrian and bicycle paths and greenways that provide convenient inter- and intra-town access, including access to the regional public transportation network;
E N S U R E that the planning, design, construction, and operation of state and local highways accommodates municipal plans and the needs of all users, to the extent possible.

Connecticut's "Principles for Smart Growth," included as Attachment "F" in the Conservation and Development Plan outlines these standards:

- (A) integrated planning or investment that coordinates tax, transportation, housing, environmental and economic development policies at the state, regional and local level, [continue to "D"]
- (D) transportation choices that provide alternatives to automobiles, including rail, public transit, bikeways and walking, while reducing energy consumption,
- (E) the development or preservation of housing affordable to households of varying income in locations proximate to transportation or employment centers or locations compatible with smart growth,
- (F) concentrated, mixed-use, mixed income development proximate to transit nodes and civic, employment or cultural centers

The State's current plan for an additional parking garage runs counter to its own excellent development principles. The development alternatives developed by the "Flash Charrette" teams do fulfill the Connecticut's (and New Haven's) comprehensive plans for development. The development concepts created at the "Flash Charrette" meet these goals, and could act as pace-setters for the entire district.

Team A - Mixed-use buildings, high-rise and mid-scale, on plazas

Leaders:

Fereshteh Bekhrad, Architect and Planner

Richard N. Wies, AIA, Principal, Gregg, Wies & Gardner Architects LLC

Wladyslaw Prosol, Architect and Illustrator

In this development proposal, the site would be excavated six feet down, creating a single, lower level-parking area with its entrance next to the existing Union Station Garage. This parking area would have a nine to ten foot ceiling height and provide 180 parking spaces. Loading and unloading for the retail and business uses would also be included in this area.

All construction can take place outside the railroad line of force zone on the South side of the parcel. The site plan allows for a pedestrian bridge with touchdown access to the train platforms.

On the street level, a raised pedestrian plaza will create access to all commercial and retail venues. The sidewalk will be raised four to five feet above the street level and will be 10 feet wide surrounding the retail level, which will facilitate pedestrian access to all four sides of retail, and commercial level.

In the twin tower building on the West end of the site, there are two sections of retail/ commercial space totaling 50,000 square feet. Above the retail floor, are two towers, each with ten floors, with terraces for the first floor units. Each floor would be comprised of eight one bedroom and eight two bedroom units, which average about 750 square feet. All units would have open views, with light and sun, and upper stories would have citywide views including views of the harbor and downtown.



Sketch by Fereshteh Bekhrad and Richard Wies for a mixed-use, mixed income development at Union Station

On the East side of the site, are a set of low-rise buildings, each with two floors of residential and office, which could be set up as artist lofts above the retail floor. Above this second level, which has an additional ten-foot pedestrian setback, two groups of three-story residential blocks will be placed. Each block will have four residential units per floor, with a combination of one- and two-bedrooms units.



View West towards Union Station of development concept by Fereshteh Bekhrad and Richard Wies, illustration by Wladyslaw Prosol

Description of project by Fereshteh Bekhrad and Richard Wies, for mixed-use buildings, both high-rise and mid-scale, on plazas

A. Platform

The platform serves to raise all new construction above the flood zone. It will house a single level of parking under the whole site, 6 feet below street level. It will accommodate 180 total parking spaces, in addition to loading docks for retail tenants and trash management facilities. **50,000square feet.**

B. West Section of Site - Twin Tower Complex

First level: full floor of retail facing the elevated public sidewalk/pedestrian plaza. **32,000 square feet**

Second level through eleventh floor: 2 towers, each 10 stories tall, each tower will have a footprint of 60 x 100 feet, with 8 residential units per floor (80 residential units per building), totaling 60,000 square feet per tower. **120,000 square feet**

C. East Section of Site, Lower Rise Buildings

First level: One full floor of retail facing the elevated public sidewalk and pedestrian plaza. **18,000 square feet**

Second and third levels: Two levels of residential/loft/office units (live-work units), 36 units. **36,000 square feet**

Forth - Sixth levels: 2 rows of townhouses facing private green-space, 24 units total (12 units in each row). **24,000 square feet**

Summary

Total development	280,000 square feet
Anticipated annual real estate tax revenue to the city	\$1,820,000
Total development cost, the land excluded (preliminary estimate)	\$50,000,000
Anticipated gross annual revenue	\$7,200,000

Team B - Mixed-use, mid-scale buildings around two courtyards

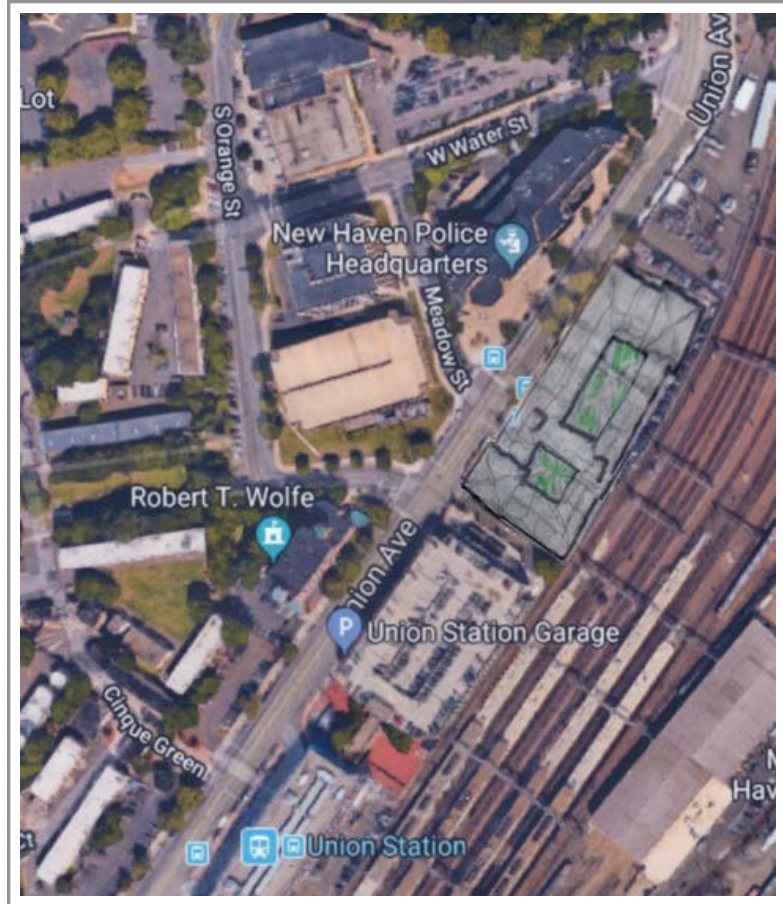
Leaders:

Robert Or, FAIA, Robert Orr and Associates Architecture and Planning
Wladyslaw Prosol, Architect and Illustrator

This mid-scale development elevates all buildings and sidewalks on a four-foot platform above the street level/flood zone. 216 parking spaces are located under the platform.

The 1.5 acre site seems small, but for a sense of scale, the entirety of Saybrook College at Yale fits snugly within the site boundaries (see illustration). Robert Orr's plan organizes mixed-use buildings around the two interior courtyards, which provide quiet green space where residents and visitors can congregate. The entire project is intended to foster a sense of neighborhood.

The buildings are designed in various styles and materials to reflect the fact they may be developed by different entities, and to provide liveliness and interest to the street. The tallest building, next to the existing parking garage, is aligned with Meadow Street to create a terminated axis that might someday become the starting point of a walkable route downtown. This building and another tall building, anchoring the western corners of the site. These tall buildings accommodate a wide variety of mixed-uses.



Robert Orr, mock-up of footprint of Saybrook College, pasted-in over Union Station development site

While the large buildings would require the services of experienced developers, the remaining buildings are purposefully smaller, perhaps on disassembled small parcels, and would allow the possibility of ownership, small incremental development by small local builders and financed by local banks. Smaller scaled buildings would provide an affordable opportunity to young innovators and entrepreneurs looking to launch new projects. The smaller scale buildings would also accommodate live-work units, as well as space for retail and small business owners — all ideal uses near the train station, as has been seen in the tremendous success of similar transit oriented developments around the country.

The authenticity of assembling a diversity of buildings, of housing a diversity of people, ages and incomes, and setting the stage for a diversity of uses promises a highly productive innovation hub, an appropriate venue for value capture of a unique location between transit and downtown.



View West towards Union Station of development concept by Robert Orr, illustration by Wladyslaw Prosol

Union Station Preliminary Draft Pro Forma

Site Data		
Site Area	1.50 Acres	65,340 SF
Town Appraisal	\$0 Town Appraisal ?	
Cost of Land	\$1,000,000 Assumed	

Building(s) Quantity and SF Data		
Average DU Size Studio/Loft (Net)	474 SF (Net/ DU)	
Average DU Size 1-Bedroom (Net)	687 SF (Net/ DU)	
Average DU Size 2-Bedroom (Net)	1,006 SF (Net/ DU)	
Average DU Size 3-Bedroom (Net)	1,334 SF (Net/ DU)	

Total DU /Site	240 Total DU /Site	
Total DU /Site (Studio/Loft)	12 /Site Studio/Loft	5%
Total DU /Site (1 Bedroom)	79 /Site 1-Bedroom	33%
Total DU /Site (2 Bedrooms)	113 /Site 2-Bedroom	47%
Total DU /Site (3 Bedrooms)	36 /Site 3-Bedroom	15%
Total SF (Net) DU /Site	221,599 Total SF (Net) Residential /Site	

Total SF (Gross) Residential /Site	Multiplier (Net to Gross) 1.15 Net to Gross Multiplier	254,839 Total SF (Gross) Residential /Site
Average Retail Shop Size (Net)	650 SF (Net/Store)	
Total Retail SF (Net) /Site	45,000 Total SF (Net) Retail /Site	
Total Office SF (Net) /Site	90,000 Total SF Office /Site	
Total SF (Net) Commercial /Site	135,000 Total SF (Net) Commercial /Site	
Total SF (Gross) Commercial /Site	Multiplier (Net to Gross) 1.05 Multiplier (Net to Gross)	141,750 Total (Gross) SF Retail and Office /Site
Total Gross SF All Buildings /Site	396,589 Total Gross SF All Buildings /Site	
Floor Area Ratio	6.07 FAR	

Parking		
Average Size of Parking Space (Includes 40% aisles)	325 SF / Car (Gross)	
Total Required SF For Parking /Site	70,200 SF	

Project Costs		
Land Cost (Assumed)	\$1,000,000 /Site	
Building Construction Cost /SF	\$150 /SF	
Underground Parking & Lndscaping Const Cost /SF	\$100 /SF	
Total Residential Const Cost for Site	\$38,225,862	57% Residential
Total Retail /Office Const Cost for Site	\$21,262,500	32% Retail /Office
Site Development Costs parking, landscaping, etc.	\$7,020,000	11% Subgrade Parking & Landscaping
Total Hard Cost Construction	\$66,508,362	
Project Soft Cost (29.2%)	\$19,420,442	29%
Total Construction Cost	\$86,928,804	100%

Net Operating Income		
Apartment Rent Studio/Loft	\$1,254 /Month/DU	
Apartment Rent 1-Bedroom	\$1,771 /Month/DU	
Apartment Rent 2-Bedroom	\$2,382 /Month/DU	
Apartment Rent 3-Bedroom	\$3,500 /Month/DU	
Average Apartment Rent	\$2,292 /Month/DU	
Average Retail Lease (Commercial)	\$37 /SF	
Average Office Lease	\$43 /SF	
Average Parking Rate	\$145 /Month/Vehicle	
Gross Potential Income (GPI) Residential Rents / Month	\$550,001	GPI Residential Rent /Month
Gross Potential Income (GPI) Retail Leases / Month	\$138,750	GPI Retail Lease /Month
Gross Potential Income (GPI) Office Leases / Month	\$322,500	GPI Office Lease /Month
Gross Potential Income (GPI) Parking Rates / Month	\$31,320	GPI Parking Rates /Month
Total Gross Potential Income	\$1,042,571	GPI Total /Month
8% Vacancy	-\$83,406 Vacancy	
Gross Operating Income / Month	\$959,165	GOI /Month
Operating Expense (35% of GOI /Month)	-\$335,708	
Net Operation Income / Month	\$623,457	NOI /Month

Annual Cash Flow Above Debt Service and Property Tax Flow		
NOI /Month	\$623,457 /Month	
NOI /Year	\$7,481,488 /Year	
CAP Rate		8.61% Unleveraged Return on Project Cost
Cash on Cash Return		26.90%

Debt Service

Project Cost	100%	\$86,928,804	
Down payment/Equity	32%	<u>\$27,817,217</u>	
	Debt	\$59,111,587	25 Years Loan Term
Payment P&I/Month		-\$380,857 /Month	6.00% Interest Rate
Annual Debt Service		-\$4,570,281.36 /Year	7.73% Loan Constant
Cash Flow After Debt Service		\$2,911,207 /Year	1.64 Debt Service Coverage Ratio

Property Tax Flow:

Mill Rate	42.98
Project Appraised Value	\$66,065,891 Appraisal
Project Assessment (70%)	<u>\$46,246,124 Assessment</u>
Total Property Tax/Year	\$1,987,658 Property Tax/Year

Total Annual Cash Flow	\$923,548 /Year W/O Subsidies, Tax Blend in, or Abatements
Annual depreciation @ 27.5 yrs assumes 75% project cost = value of improvements to land/year	\$2,370,786 NOTE: Com. SF depreciates at 39 years.

Land Sales Version From Disassembly of Large Lot to Small Lots:

Land	\$1,000,000	
Plots/Site (Approximately)	50 Approximate Plots	
Selling Price/Plot	\$75,000 Sale Price/Unimproved Plot	
Income from Salable Plots	\$3,750,000	
Margin/Profit Purchase/Sales	\$2,750,000	Profit on Land w/o Buildings

Robert Orr & Associates LLC ©

Section VI: Professional teams' summary notes regarding garage proposed by the Connecticut Department of Transportation

Reasons not to build the State's proposed garage

- More cars is not the future we want
- Changes in vehicle technology could make the parking garage obsolete in a few years
- A new parking garage would exacerbate the traffic congestion in the area, particularly at the Route 34 underpass, where the road system is poorly designed
- Data used to determine the need for this project may not be accurate anymore — transportation is evolving rapidly, we should acknowledge transportation changes
- There are other better uses for this State money
- We can produce more money from this site with another type of project
- The State's proposed new parking garage would further deaden visitor experiences of Union Station
- The proposed parking structure would not be used or occupied at night — safety issue
- The street needs a pulse, this land should be used to make the area vital
- Public infrastructure should be a catalyst for private development
- We want healthy people — walking and biking, and breathing clean air
- Union Avenue is a key street for the success of the neighborhood

Alternatives to the proposed garage

- Investing money in infrastructure — rebuilding streets and intersections to function better, storm water and flood control
- Invest in renovations to support developing retail uses at Union Station
- Build to enhance tax base
- Restore street as urban boulevard, rather than a degraded conduit to parking facilities
- Enhance Union Avenue streetscape with trees, seating, lighting
- Improve connection to Downtown and surrounding neighborhoods

- Provide an engaging, pedestrian friendly street and sidewalk
- Build mixed-use, mixed income development — residential and commercial
- Improve the intersections at Route 34 underpass
- Locate surface and structured parking in less valuable areas, and areas not already overburdened by parking
- Box park idea from London - consider using shipping containers to build a quick mixed-use development in the area to last until longer-term plans are developed, Engage millennials in the development of the area
- Invest in flood prevention / control
- Invest in transit and other measures such as bicycle facilities to reduce Single Occupancy Vehicle travel to the Station / promote alternative ways of transportation
- Develop prosperity and businesses here - Remember! Stamford receives \$10 million in property tax revenue for buildings adjacent to its train station.



Shipping containers were used in this project in London to create a fast and inexpensive development. Shipping containers have been used for permanent and short-term projects. These could be used on the South side of Union Avenue area under the Route 34 overpass (opposite the SITE Project installation) to create stores and restaurants to activate the street and make it safer. Photo by Christopher Bergstrom.

Section VII: Conclusion and Recommendations

The function of New Haven’s train station is evolving. In past years, the station was less a place of destination than it was a place of origination. New Haven’s development as an innovation center and technology hub, and the continued growth of Yale New Haven Hospital as a regional employer and treatment center, all contribute to this beneficial change. We now have the opportunity to build a true Transit Oriented Development - that is, mixed-use development founded on location efficiency and walkability.

The State’s investment to expand commuter rail provides an effective tool to reduce parking demand at Union Station. Parking demand can be reduced in many other ways as well — such as improving bus service, bike facilities and locating new uses within walking distance. As Norman Garrick for the University of Connecticut Transportation Institute has said, the best transportation system is the one you don’t need.

Land around the train station is a valuable and limited commodity. Land values generally drop as distance from transit hubs increases. We need to create sufficient value here to support rebuilding streets and intersections to gain safety and logical way-finding. The routes to the Hill neighborhoods, the Medical District, and Downtown all need careful attention.

The “Flash Charrette” team recommends that:

1. The State set aside the plan to build a second garage at Union Station;
2. The State and City partner with the New Haven community to hold an in-depth, professionally lead charrette before plans are finished or approved for Church Street South and other nearby developments;
3. The charrette should establish an improved street grid and complete streets plan for the area to support walkability and rational bus routes, a final for Union Avenue;
4. The charrette should evaluate the use of the land at Union Station’s west side. Expansion of rail service (regional, commuter and high-speed) may require additional waiting areas, retail, and support space which could be built here;
5. The charrette should evaluate the mixture of uses needed in the Union Station area as a whole, and how this area relates to and can support surrounding neighborhoods;
6. Various draft plans for a bus depot / transit center in the area should be tabled until 1) a bus study with new routes and sub-hubs is completed; and 2) implementation funds are available to create the plan.

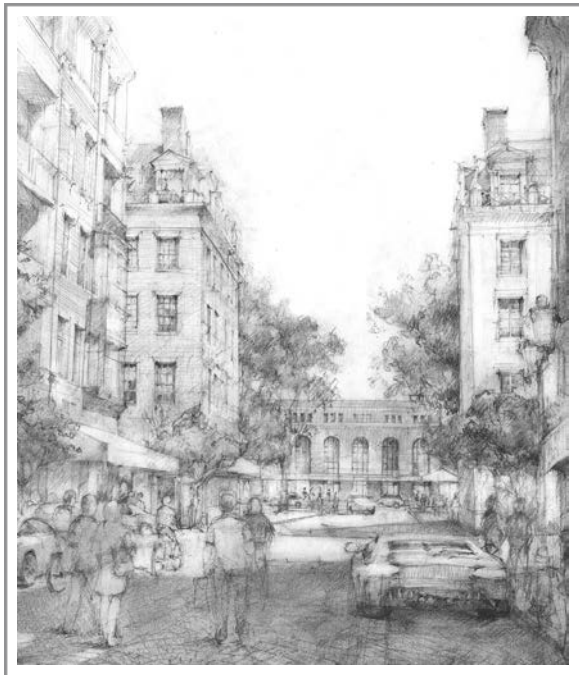


Concept for new street alignments and public places at Union Station, George Knight and Wladyslaw Prosol. From the 2011 Community Charrette on Route 34 and Union Station.

As we think about the future of the Union Avenue Corridor, development concepts need to be evaluated by what creates and captures value, using the “triple bottom line” of social, economic and environmental values -- values which are implicit in the State’s Smart Growth policy.

Acknowledgements

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Robert Orr and Wladyslaw Prosol. concept for pedestrian plaza at across from Union Station, 2011 Community Charrette on Route 34 and Union Station. Detail of drawing by Wladyslaw Prosol.

New Haven Urban Design League

Statement of Belief

The New Haven Urban Design League believes the quality of the built environment is critical to human happiness and a civil society.

Mission

The New Haven Urban Design League was founded by citizens devoted to protecting and enhancing New Haven's natural assets and urban design through research, education, and advocacy. The League works to improve the quality of life in New Haven by supporting projects that sustain the culture, beauty, utility, and economic health of the city -- both in its neighborhoods and in its region. The League seeks to strengthen the civic culture that is the foundation for good government, good planning, and good development.

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