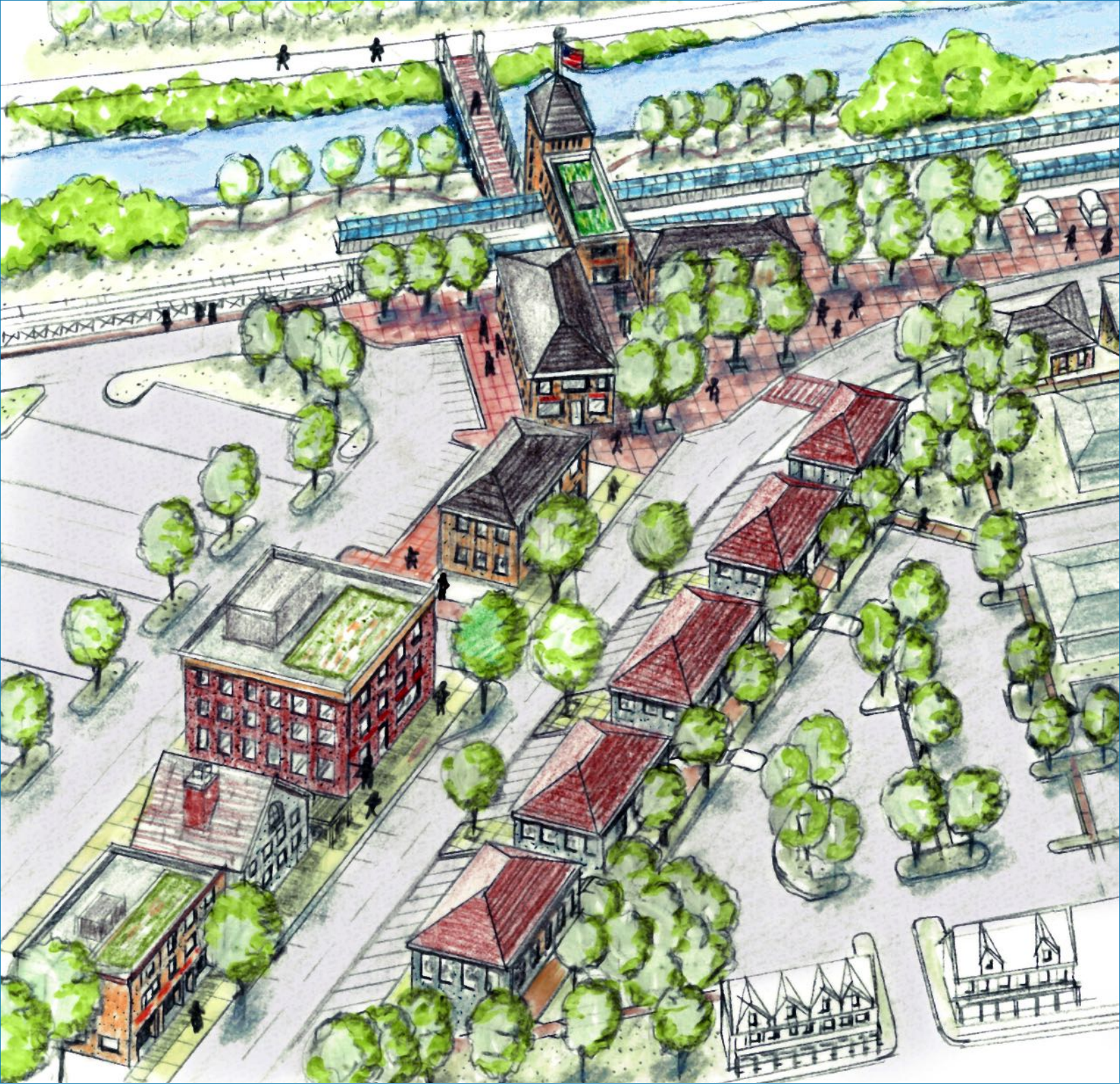

Windsor Locks:
ONCE AND FUTURE

Transit-Oriented Development Study

Volume 1 - Recommendations

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Executive Summary

Future Rendering of Downtown Windsor Locks

Study Background

Using transit centers as economic development catalysts is an increasingly popular tool for cities and towns across the nation to combat sprawl, create or re-create "place", and enliven downtowns and neighborhood centers. It is this logic that encouraged CRCOG to apply for and receive a grant from the U.S. Department of Housing and Urban Development (HUD) Sustainable Communities Regional Planning Grant Program on behalf of the Knowledge Corridor Consortium. Specifically, grant funds have been used to study the transit-oriented development (TOD) opportunities arising from increased train service on the New Haven-Hartford-Springfield (NHHS) line and include Windsor Locks as one of the key stops on the line.

The purpose of this particular study is to identify opportunities to revitalize downtown Windsor Locks in a manner consistent with TOD principals and assist the town with the identification of the necessary steps toward implementation. The potential revitalization will be substantially enhanced by the relocation of the existing train station from its current location in the south end of town to the downtown area.

As the primary hub for Bradley International Airport and thereby a gateway to southern New England for air travelers, the Windsor Locks train station is already an important stop along the NHHS line. However, with the relocation, the train station will soon be directly accessible to regional walking and biking trails and provide real potential for the resurrection and resurgence of a once thriving mixed use downtown. The station relocation initiative is an ongoing process coordinated with ConnDOT, the Town of Windsor Locks, CRCOG, and Amtrak. The relocation site is the subject of this TOD Study, along with the surrounding downtown area as there should be a symbiotic fiscal investment and land use relationship for true success. This document is the culmination of the study and contains detailed implementation recommendations to ensure the established vision comes to fruition.

In short, the purpose of this study is to:

1. Identify and define opportunities associated with the passenger rail station's downtown location.
2. Position the town and identify properties for shovel ready market-based implementation.
3. Position the town for coordinated and controlled growth into the future.

Process and Guiding Principles

In order to help guide the planning process, a steering

committee was comprised of a diverse cross section of the town's government and special interests. These include, but are not limited to: planning and zoning, real-estate, economic development, business community, ConnDOT and key politicians. The consultant team meetings with this committee were frequent and productive.

The first phase of the master planning process, Fall 2012, was dedicated to analyzing the study area and listening to stakeholders. The planning team collected both hard data and soft data. Hard data consists of mapping, photography and analysis of the physical conditions of the community. Soft data consists of the stories, the culture and the aspirations of the stakeholders.

As a result of intensive stakeholder involvement, the team and steering committee developed the following guiding principles, or goals, for the project as the work progressed into design and detailing:

1. Rediscover a sense of community pride.
2. Create a vibrant walkable mixed use downtown community.
3. Capitalize on current and future reinvestment opportunities.
4. Institute a community of landscaped open spaces to extend and reknit the downtown.
5. Improve the perception and access to downtown through identity and signage.

Vision / Design Interventions

The team then moved into the visioning process. Based on market studies, input from stakeholders, the capacity of the study TOD area, urban design, and recommendations contained herein; full build-out plans were developed to assist in the visualization of the opportunities inherent in the new downtown area. Build-out of the downtown will take many years and will start with a couple of key catalyst sites, namely the redevelopment of the Montgomery Mill into residential mixed use and the development of the railroad station site as a mixed use community with future integration of the Windsor Locks Commons. The result is a plan that recommends how and where development could and should occur, where public investment for road and utility improvements should be made, and where new parks and other public facilities should be placed. The plan sets policy and provides direction and context for public and private investment within Windsor Locks over the next 20 years.

Generally, the TOD area has been defined as the area from Two North Main Street and along Main Street to approximately the Public Library site and westerly to

Design Interventions Key Plan

Center Street, encompassing the Town Hall, Middle School and "Mill Village." The site selected for the relocation of the station is in the general vicinity of its original historic downtown location—at a focal point bounded by Main Street, the Windsor Locks Canal and canal trail to the east, and the Windsor Locks Commons commercial center to the west. The station site will be the hub of activity within the downtown area, and it is expected economic development and housing opportunities will become available within close proximity to this area. Station area planning should be oriented toward the future but based in reality and financial feasibility and be consistent with the town wide goals and established vision.

1. The station site must contain a mix of uses.
2. Relocate Amtrak siding and staging area to the existing train station site south of downtown.
3. Accommodate airport shuttle service vehicles to the rear of Windsor Locks Commons.
4. Share a common entrance to the site with Windsor Locks Commons.
5. All parking to be located to the rear of the site with mixed use buildings along Main Street and integrated with station functions.
6. Allow for shared parking opportunities with Windsor Locks Commons.
7. Provide multi-modal bike and pedestrian connections.
8. Accommodate future redevelopment of the Windsor Locks Commons site with all parcels sharing parking and connections.
9. Provide access over the existing canal for connections to the regional Windsor Locks Canal Trail and potential residential development to the east between the canal and the Connecticut River.
10. Provide bicycle facilities and storage.
11. Design for an activated Main Street with station-related uses on the ground floor.
12. Develop a primary mid-block crossing to access parking and Main Street uses on the west side of Main Street.

These planning and design principles for the development of the station site will help maximize economic development opportunities, provide for higher density development at the station site and help activate this section of the Main Street downtown.

Market Recommendations

All redevelopment options, particularly in the short term, must be grounded in market reality. This study recommends a substantial increase in housing in the downtown area and within a ten to fifteen minute walk to the station site. The increasing market interest in urban neighborhoods—walkable, with a mix of uses and a variety of housing types and land uses—is the result of dramatic changes in American household composition, the growing cost of commuting by private automobile, and the profound impact of the Great Recession—which began in 2007—on both households and builder/developers.

The housing analysis shows that an annual average of up to 675 households represents the potential target markets for new multi-family and single-family attached housing units in the Downtown Study Area each year over the next five years. The degree to which Windsor Locks is capable of capturing substantial portions of this market in the downtown areas is predicated on many factors, not the least of which is the availability of appropriate housing stock. As derived from the tenure and housing preferences of these target households, the distribution of higher-density rental and for-sale housing types is as follows:

Multi-Family *(lofts/apartments, leaseholder)*	For-Rent	340	50.4%
Multi-Family *(lofts/apartments, condo/co-op ownership)*	For-Sale	155	23.0%
Single-Family Attached *(townhouses/ live-work, fee-simple, condominium ownership)*	For-Sale	180	26.6%
Total		675	100.0%

The town must identify and aggressively seek development partners for the Montgomery Mill site as a substantial residential or mixed use community with direct connectivity to the new station. This site has been identified as a catalyst site in Windsor Locks' rebirth. The market area around Windsor Locks' Central Business District is projected to grow. New households will create demand for additional

professional and personal services. With the train station downtown, Windsor Locks' Central Business District will solidify its role as business and service center.

The train station should also enhance Windsor Locks' competitive position in the office market. Because Windsor Locks' market is growing and the current office supply is old and fully occupied, we conclude that there is the opportunity for new office investment in the Central Business District. For planning purposes, W-ZHA considered it reasonable to assume that the market has the potential to absorb an additional 20,000 to 40,000 square feet of office space within 10 years of the train station's re-location to the Central Business District.

Likewise, it is reasonable to assume that Windsor Locks' downtown can compete for additional neighborhood shopping and eating and drinking spending from a trade area within a 7 minute drive time ("Trade Area") of the train station. There is the potential for a small grocery of 10,000 to 20,000 square feet in the Windsor Locks Commons shopping center. Such a market would likely follow significant improvement in train frequency and residential development downtown. In addition to retail and services, there is potential for additional eating and drinking space of which downtown should be able to capture at least 15 percent of the Trade Area's eating and drinking expenditure potential. By 2022, the downtown could support 8,000 square feet of additional eating and drinking space, much of which will be located on Main Street.

Retail Area Potential

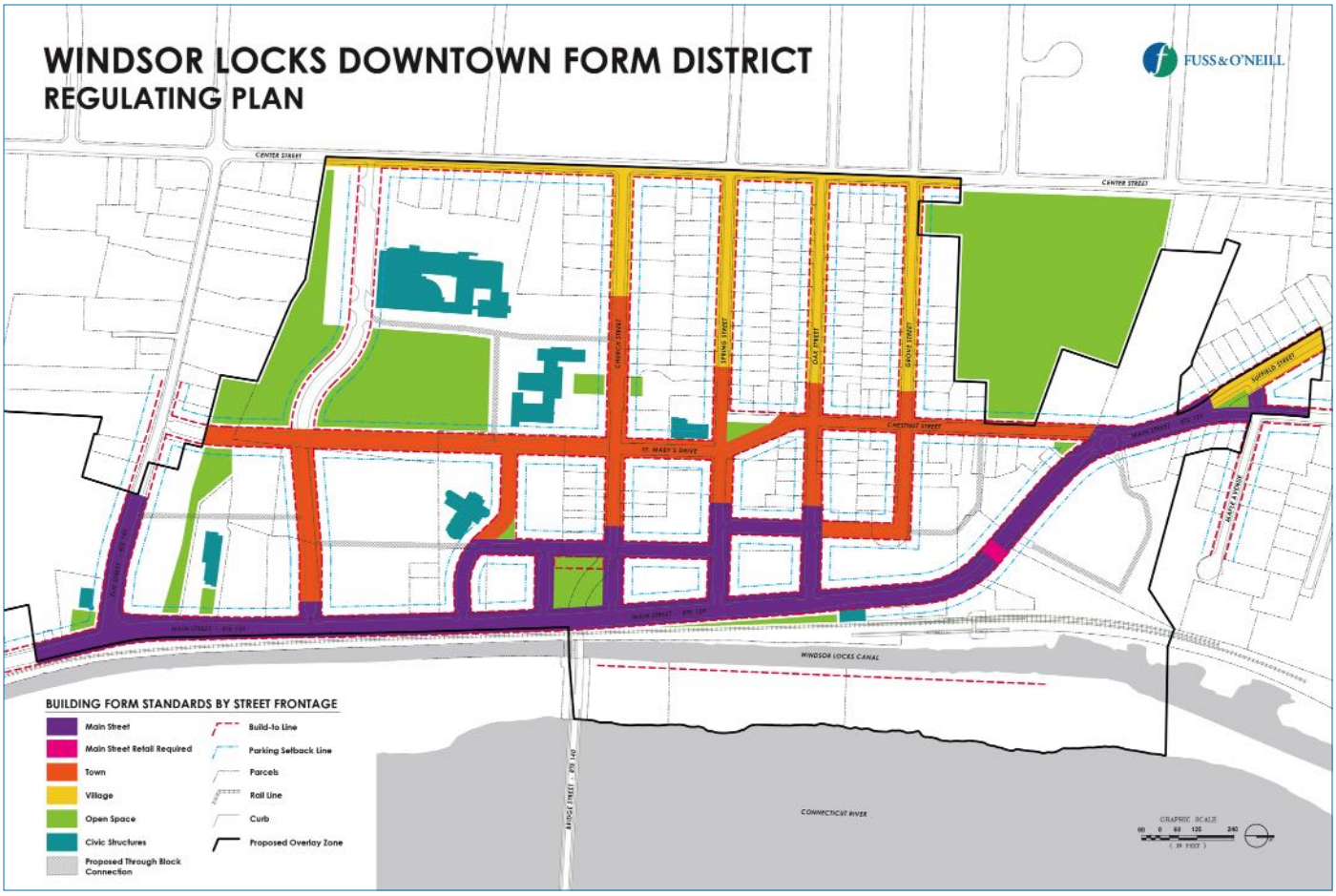
- Office Space:
  20,000 sf - 40,000 sf
- Retail Space:
  30,000 sf - 40,000 sf
- Eating/Drinking Space:
  8,000 sf - 8,000 sf
- Total Retail Space:
  8,000 sf - 88,000 sf

Mobility Initiatives

A substantive component of this effort was assisting the town with the identification of steps and specific action items in order to implement the town's vision. A number of these resulting steps include the "public realm" and circulation systems in and around the downtown area. Proposed modifications to roadways are intended to increase the livability of the facilities and ensure that the roadways accommodate all modes of travel. Furthermore, enhanced public realm plazas, open spaces and streetscapes will contribute to creating a sense of place consistent with the desired walkable TOD character of downtown Windsor Locks. The recommendations consist of not only retrofits to existing facilities, but also new connections intended to serve mobility needs as the TOD builds out. Pedestrian and bicycle facilities are also included as part of the overall mobility recommendations. Some of these recommendations include:

- Main/Bridge intersection reconfiguration
- Bridge Street lane diets and cycle track
- Construction of a separated facility in the form of a pedestrian/bike bridge next to the existing canal bridge
- Main Street lane diets
- Lane reduction and on-street parking along Main Street from the Spring Street intersection to the western curve
- New widened sidewalk and multi-use path along Main Street to afford continuous bicycle access from Bridge Street to the relocated train station.
- Construction of a roundabout at Main/ Chestnut intersection.
- Construction of a roundabout east of the river in East Windsor.

Downtown parking was studied relative to the impacts of a full future build out and positive town building principals. Parallel and angled on-street parking along the road-dieted segment of Main Street will supplement the parking provided at the proposed train station site. The on-site parking for new or redeveloped buildings on Main Street will be shared parking lots located at the rear of the buildings, allowing the buildings to be set closer to the street. "Kiss and ride" spaces along Main Street provide



Regulating Plan

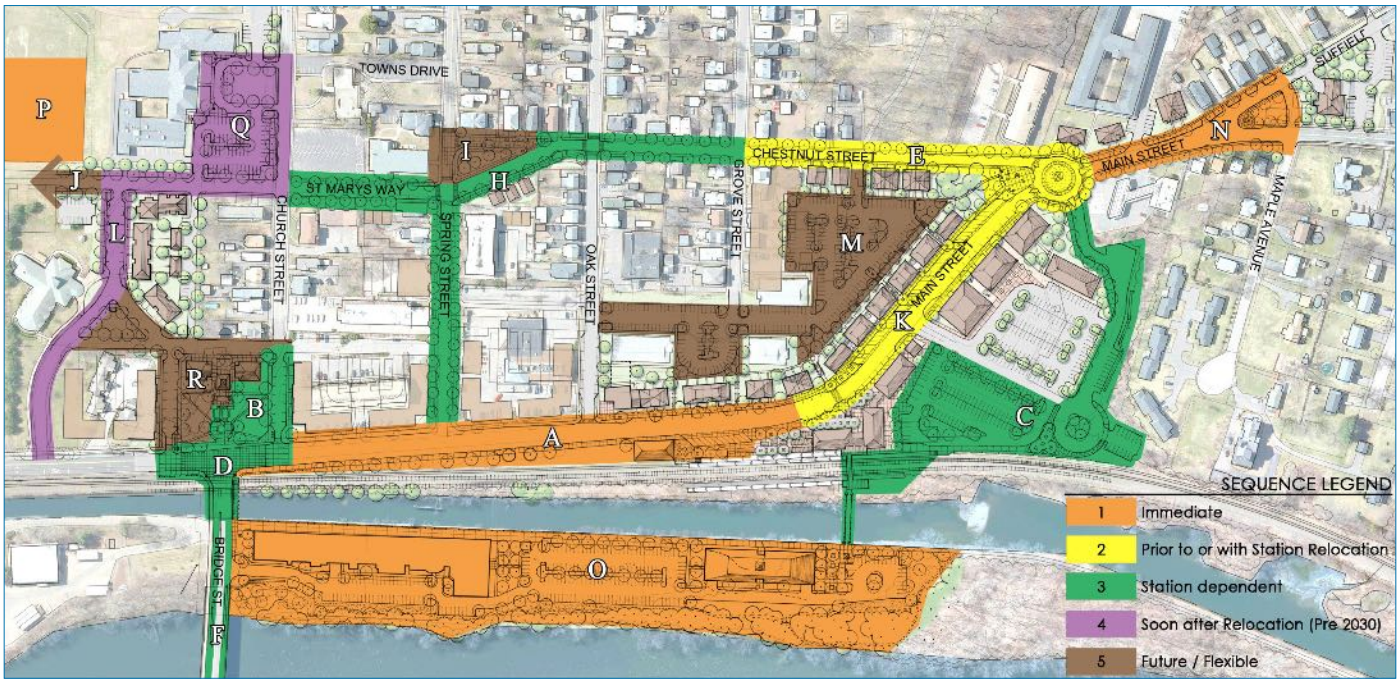
short-term parking for commuters to be dropped off in front of the train station. Parking for the Montgomery Mill redevelopment will be provided on-site, with enhanced bicycle and pedestrian connections to Main Street and the train station provided by a connection across the Bridge Street canal bridge and construction of a multi-use path along the east side of Main Street.

Land Use Regulations

Overall land use recommendations and the regulation thereof are addressed through a form- based coding system. The model code contained in this report is the codification of the town's future vision. "Form-based codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. They are regulations, not mere guidelines, adopted into city or county law. Form-based codes offer a powerful alternative to conventional zoning. [They] address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form-based codes are presented in both words and clearly drawn diagrams and other visuals. They are keyed to a regulating plan that designates the appropriate form and scale (and therefore, character) of development, rather than only distinctions in land-use types" (from *Form-Based Codes Institute, www.formbasedcodes.org*).

Success of this strategy will hinge on the ability of the town to integrate these model regulations into the existing zoning ordinances for downtown. The summary recommendation is for the town to adopt the draft Main Street Overlay Zone (MSOZ) into an opt-in overlay form-based code for downtown Windsor Locks, namely Main Street and the Station Area. Provided herein are beginning versions of the Regulating Plan, Building Form Standards, Urban Space Standards and Architectural Standards to assist in this effort. These standards for the Main Street Form-Based Code are based on the existing town fabric and building character, the TOD Study vision plan, and built on the local ordinance legal structure.

Property Development Sequencing



Public Infrastructure Capital Improvements Sequencing

Development Strategies / Sequencing

Implementation strategies reflect the findings of the market analyses and the public's input and are directly related to the mission and vision of the plan. Like most small downtown areas, Windsor Locks is a complex place. Disinvestment, past urban renewal efforts, the relocation of the train station and a lack of general activity has helped to create a sterile and unappealing environment. The downtown is in a state of crises.

The master planning process thus far has looked at the potential opportunities for the downtown's revitalization predicated on the relocation of the station, thus creating the opportunities for transit oriented development and overall town building or rebuilding. The likelihood of all of these opportunities coming to fruition in the short term is negligible; therefore, we must look at the likely potential of the sequence of actions and how each of these proposed actions may build upon earlier actions to begin the transformation process. This is often referred to as development sequencing.

The understanding of this sequencing process allows the town to begin to target likely sites or improvements, therefore helping to pave the way for sequential implementation. These improvements often begin as small efforts which improve visibility, aesthetics, connectivity etc. As success builds, so does community pride, downtown use and real-estate values once again paving the way for future success. This model is no different in Windsor Locks.

One of the most difficult components of sequencing is the first action. It must be a bold action grounded in market and physical feasibility, profitable to the town or development entity and consist with the established downtown vision. This is referred to as the "catalyst site," and in Windsor Locks, that site is the Montgomery Mill property. In this report, development sequencing is illustrated in two charts; physical building redevelopment and public infrastructure improvements. In general, development opportunities are prioritized in phases based on the timing of the relocation, availability of land and life cycle condition of effected properties. Public investment recommendations are prioritized based on the preparation of areas for redevelopment, place making, aesthetic improvements and traffic and multimodal transportation recommendations, all of which are predicated on the station relocation and anticipated sequential development. Overcoming the inertia of the onset of redevelopment often takes time. In the shorter term, municipalities often begin to prepare their downtown areas to make redevelopment opportunities more attractive and to begin to create the sense of place needed. It is important to illustrate progress and this study identifies many inexpensive initiatives that the town should immediately prioritize and implement. More substantive incremental step initiatives may include the following:

1. Pedestrian/Bicycle Connections
2. Streetscape Improvements
3. Enhanced connectivity, access and safety of Canal Trail
4. Expanded Middle School field civic uses
5. Other aesthetic enhancements recommended in the previous FHA master plan.

Financing

In order to provide the town a starting point in acquiring necessary funding to begin the public improvements recommendations as contained herein, conceptual order of magnitude costs for short term improvements have been prepared. A broad program to provide incentives and financing tools to spur priorities such as workforce housing and mixed-use development, save endangered buildings and increase downtown's environmental friendliness, could be funded in a variety of ways. In general and with some exceptions, financing for public improvements will be from state and federal assistance programs supplemented with municipal funds and include infrastructure, transportation, recreation and aesthetic improvements. Private development will be implemented through public-private partnerships (PPP's) or fully privately funded. In the short and mid-term, private investment in the PPP should be used to leverage public funding, and public infrastructure and streetscape improvements should be geared toward incentivizing development and creating a sense of place in the downtown area.

As mentioned above, public land holdings within the TOD and downtown area offer tremendous opportunities, however, there are areas where consolidation or the use of private properties will be critical to the success of coordinated redevelopment. The primary areas include the existing commercial properties across the street from Windsor Locks Commons and the ability to provide roadway connections between Bickford Health Care

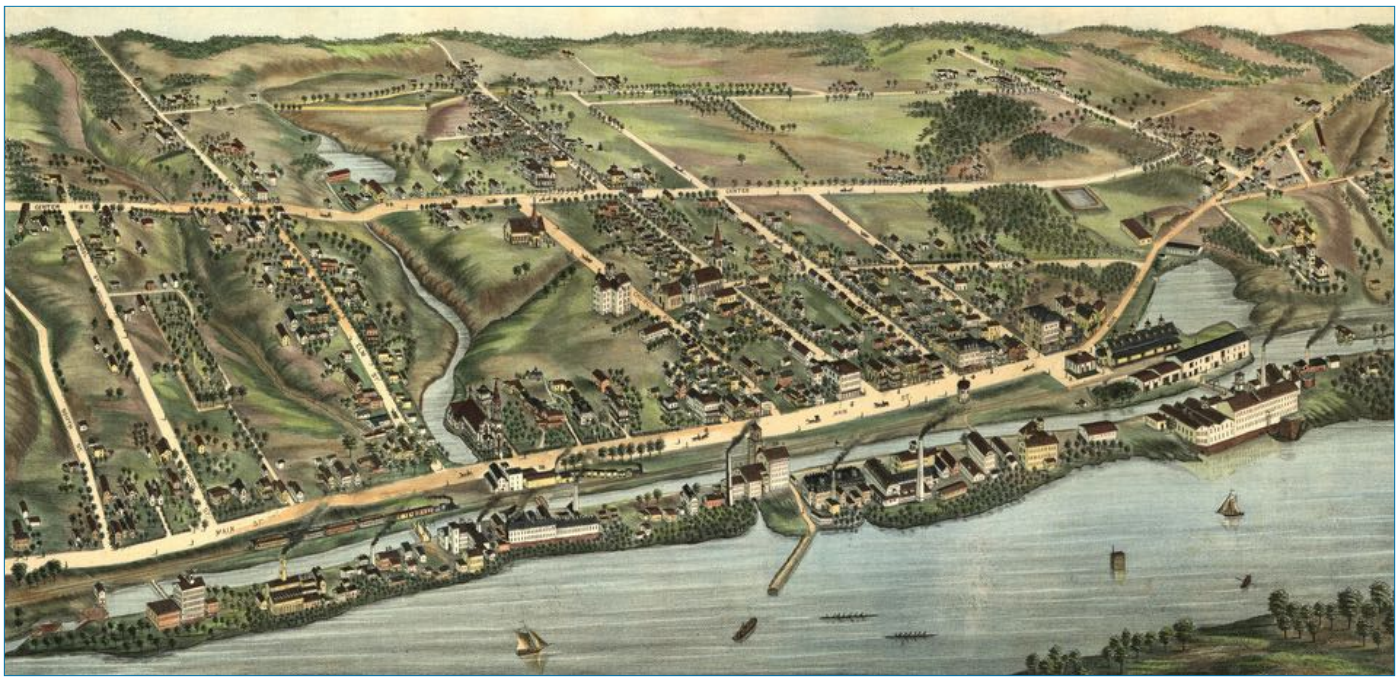
Center and Dexter Plaza. Leveraging financing to gain public control of these potential assets will be necessary to implement important recommendations. Acquisition will result in disposition of the property to a redevelopment entity.

Conclusion

The Town of Windsor Locks has a tremendous opportunity to revitalize its downtown. This document identifies these opportunities and provides the town with necessary tools to make positive strides towards the established vision. The relocation of the Amtrak station is the catalyst for providing economic growth and development downtown. The town must continue to aggressively coordinate implementation efforts with its municipal agencies, state government and CRCOG in order to secure necessary approvals and funding moving forward. Short term recommendations will become the baseline upon which longer term initiatives are revealed. Its downtown has the potential of becoming a thriving center as it historically once was. The future of Windsor Locks is bright.

Chapter 1:
Introduction

Introduction



Bird's Eye Lithograph of Windsor Locks in 1877 [1]

The Hartford region's sustainability, quality of life and environment are being threatened by a continued sprawling pattern of growth. Windsor Locks has not been immune to the sprawling patterns. Despite the country being in a financial recession over the past few years, the Ella Grasso Turnpike (Route 75) next to Bradley International Airport has seen some development but all in auto-oriented suburban commercial forms. Meanwhile the downtown, despite some unique features, has been largely ignored. This is a typical tale for many Connecticut small towns; however, Windsor Locks is now in a prime position to make positive strides forward.

An innovative, regional and intergovernmental approach to planning is desirable and necessary to create more sustainable and livable communities. A regional approach will benefit individual communities, including Windsor Locks, and the region as a whole through enhanced economic development opportunities. Implementing smarter equitable growth and development patterns will create more affordable housing, more efficient and sustainable transportation infrastructure and revitalized urban centers. A compact, connected and complete urban design approach provides inherent sustainability and other benefits including the protection of environmental quality, improved access to healthy foods, reduced energy consumption and greenhouse gas emissions, and a higher quality of life overall.

These issues are being considered by the efforts of Capitol Region Council of Governments (CRCOG) and the Knowledge Corridor Consortium in light of the Connecticut Department of Transportation (ConnDOT) passenger rail initiative along the I-91 corridor from Springfield, MA to New Haven, CT.

"In 1824, a group of prominent Hartford businessmen formed the Connecticut River Company to construct a canal that would bypass the treacherous rapids of Enfield Falls and extend navigation along the Connecticut River. Soon boats were a frequent sight in the village of Windsor Locks, named after the locks of the canal that ran alongside Main Street. Mills also sprang up in the area, utilizing the canal's water to power their manufacturing operations."

From: Windsor Locks Canal (CT) (Images of America) by Maria Giannuzzi, Arcadia Publishing (May 21, 2007)

The purpose of the U.S. Department of Housing and Urban Development (HUD) Sustainable Communities Regional Planning Grant Program is to support metropolitan and multi-jurisdictional planning efforts that integrate housing, land use, economic and work force development, transportation and infrastructure investments. CRCOG applied for the grant, on behalf of the Knowledge Corridor Consortium, to study the transit-oriented development (TOD) opportunities arising from increased train service on the New Haven-Hartford-Springfield (NHHS) line. So, when funding was received in 2010 from the CRCOG, the Town of Windsor Locks was well prepared to look forward to the revitalization of its downtown. The potential revitalization will be substantially enhanced by the relocation of the existing train station from its current location in the south end of town, at the I-91 interchange, to the downtown area.

Using transit centers as economic development catalysts is an increasingly popular tool for cities and towns across the nation to combat sprawl, create or re-create "place", and enliven downtowns and neighborhood centers. TOD helps in the following ways:

- Encourages transit supportive uses such as residential, retail, schools offices and discourages non-transit supportive uses such as automotive sales, large format food stores, drive through services, industrial or warehouse uses, low density single family residential, etc.
- Promotes higher densities in concentrated areas with a particular emphasis on a one quarter to one half mile walk from the station site.
- Provides convenient pedestrian connections with short walking distances to transit options. Carefully separates vehicular and pedestrian functions for safety.
- Develops opportunities for various forms of transportation regionally and locally such as direct local pedestrian connectivity and regional and local bicycle connectivity and facilities.
- Ensures good urban design through the creation of high quality multi-modal streets, (Complete Streets), architectural variety with ground floors relating to the pedestrian and limit surface parking along streetscapes.
- Makes the station a "place": Makes buildings landmarks to create notable places which will include way-finding and make a memorable place.
- Leaves enough room to grow, after initial densification, so the area around a station can further intensify over time.
- Manages parking: Provide enough but not too much. Locate parking to the rear and sides of buildings with building entrances focused on the street.
- Incorporates bicycle parking/storage facilities.

Main Street in 1960 [2]

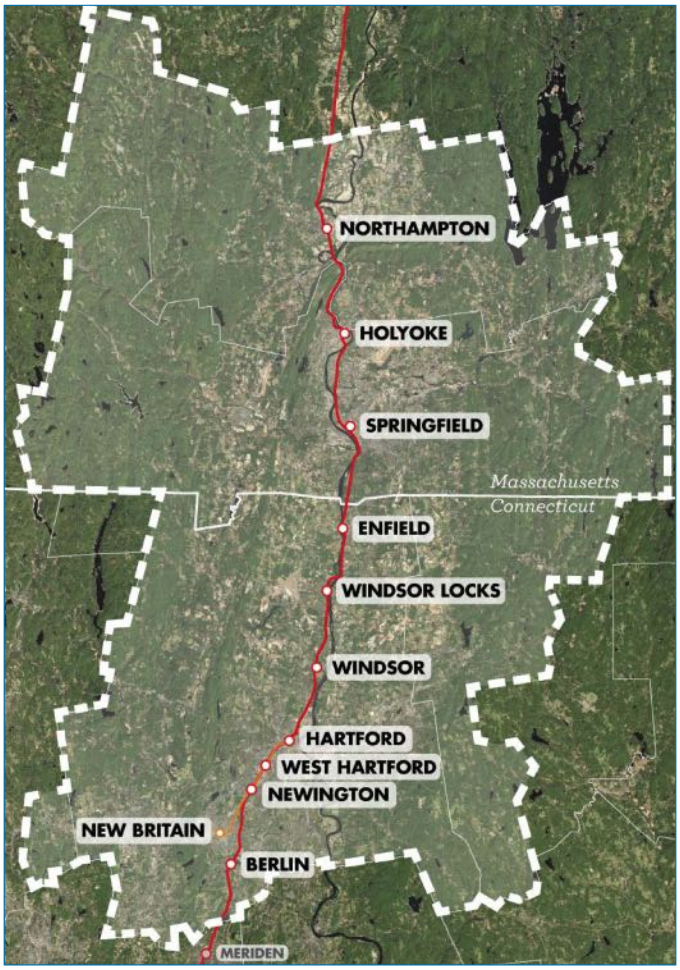
Looking North on Main Street in 1915 [3]

The purpose is to identify opportunities to revitalize downtown Windsor Locks in a manner consistent with TOD principals and assist the town with identification of necessary steps toward implementation. The NHHS project, providing added passenger rail service between New Haven, CT and Springfield, MA, will have far reaching regional economic development benefits and will have the opportunity to substantively and positively affect the region's transportation alternatives. Train stations along the route will experience significant ridership increases and result in increased exposure to adjacent downtown areas. Windsor Locks is an important stop as it is the primary hub for Bradley International Airport, and is directly accessible to regional walking and biking trails (at the downtown location). The station is potentially the gateway to southern New England for air travelers.

Based on the recommendations of the 2008 Ferrero Hixon Associates master plan, the town is in the process of relocating the station back to its historic downtown location. The historic station was once the hub of downtown activity. Mixed use buildings lined Main Street and thrived on local and ridership patronage. Powered partly by the Windsor Locks Canal, active factory buildings occupied the area between Main Street and the Connecticut River. Industries were major employers in town and one, the Ahlstrom Corporation (established in 1767 as C.H. Dexter and Sons) is still thriving. Also still present is the wonderful scale of the mill village to the west of Main Street. The historic pattern of development has resulted in one of the state's few "one sided downtowns".

In the 1960's and 1970's urban renewal took its toll on the town center. All of the multi-story mixed use buildings were razed and replaced with single use, single story suburban-style sprawl, effectively eliminating pedestrian activity and healthy mix of uses and, thereby, discouraging the town's sense of place.

The station relocation initiative, an ongoing process coordinated with ConnDOT, the Town, CRCOG, and Amtrak, provides real potential for assuring resurgence, healing a once thriving mixed use downtown. There should be a symbiotic fiscal investment and land use relationship for true success. This document is the culmination of the TOD study and details recommendations to ensure the community vision comes into reality.



CRCOG 's Knowledge Corridor [4]

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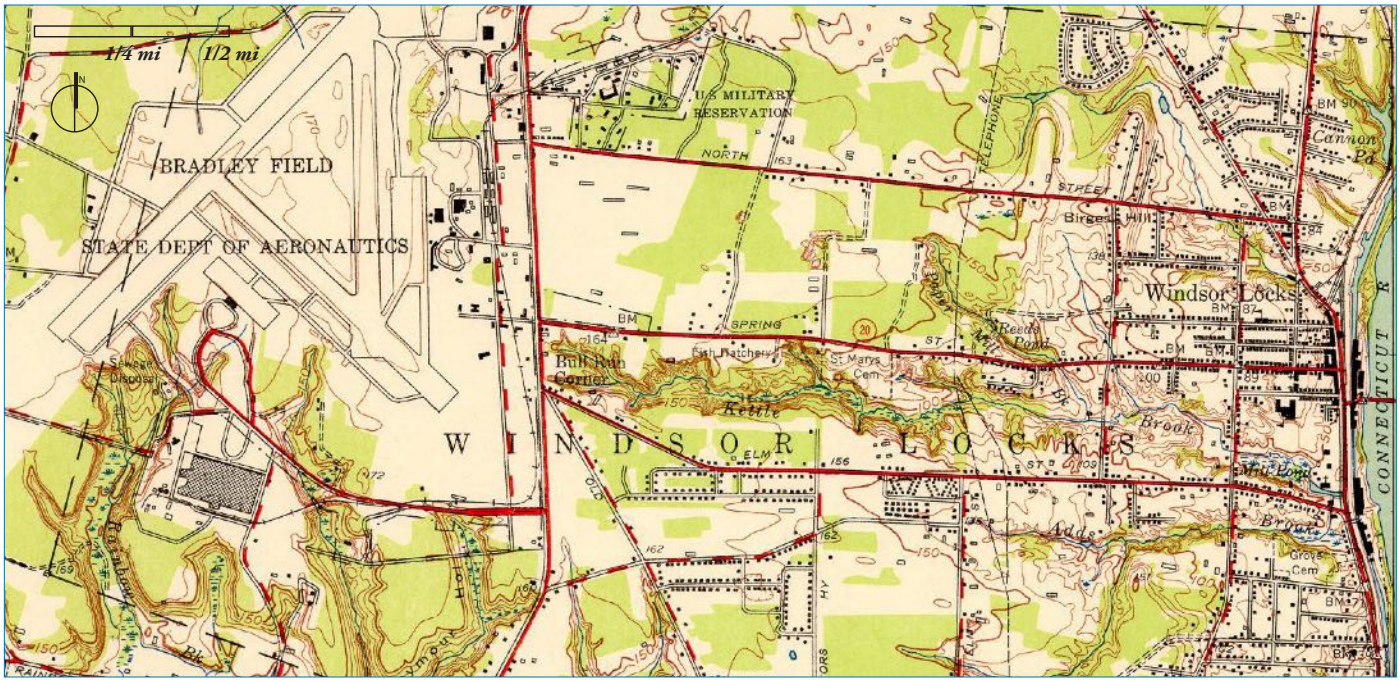
Chapter 2:
Background

Background



Windsor Locks in 1953 [1]

Several earlier plans and studies were used as a starting point. This study develops these concepts into a finer grained implementation plan that is intended to be understandable to the town as well as private and institutional development entities and to be realized in a coordinated, phased fashion. The study is to:

1. Identify and define opportunities associated with the rail station's renewed downtown location.
2. Characterize the town and its best properties for shovel ready market-based implementation.
3. Ready the town for coordinated and well-managed growth into the future.

History

To understand a place, it is important to learn a little history. Windsor Locks is located where it is because of Enfield Falls. The falls were the east/west connection for trade across the Connecticut River and where north/south trans-shipment happened. The combination of the shipping movements made a logical reason to locate downtown just north of the crossing. The key component was the fact that the River was crossed by most traffic in the downtown, rather than outside, keeping a good level of commerce and activity.

The Enfield Falls (Windsor Locks) Canal was built, beginning in 1827, to circumvent the shallows at Enfield Falls. It is situated along the west side of the river, adjacent to the towns of Suffield and Windsor Locks and was opened on November 11, 1829. As the flow of water in the canal was controlled through the lock system, larger mills could be located slightly to the south at Kettle Brook to use both water sources. Flanking and paralleling Kettle Brook, Elm and Spring Streets run straight out west to what historically was a large flat agricultural area. The agriculture-related business, added to the employment generated by the mills, made for an economically varied compact central village, supported by multiple types of transportation.

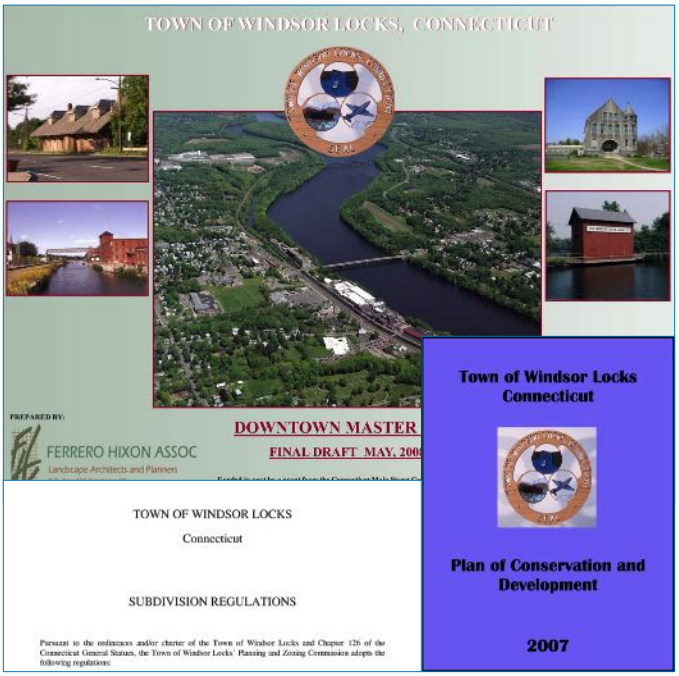
Beginning in 1844, the railroad replaced the canal, but continued to sustain the economic growth of the town. Rail traffic steadily increased, and in 1875 the historic station was built (by the New York, New Haven & Hartford Rail Road) to more adequately accommodate travelers on the Hartford—Springfield line. The railroad had a major impact on small town life - not only did it provide communication and opportunities for personal mobility, but it also encouraged economic growth. For many people it symbolized progress, prosperity and the benefits of technology. Up until World War II the station served a steady flow of passengers and that location eventually closed in 1971.

In the 1950's the agricultural land was transformed into Bradley International Airport. The airport not only removed the tobacco, vegetable, and dairy farming, but did not directly connect to downtown until Route 20 (Bradley Connector) was built in 1961. Another factor contributing to the decline of downtown was the diversion of most wheeled transportation onto I-91, opened in 1959. The mills and factories in the area with less circuitous access were more successful than those located in downtown Windsor Locks.

Most of downtown that is still seen today was developed in the 1960's and 1970's as an effort at urban renewal. The only original building to remain is the historic train station after the multi-story mixed-use buildings were torn down and replaced with mostly one-story single use buildings and surface parking lots.

Planning Efforts

In 2007 and 2008 a very broad based downtown master plan was developed. The team used the master plan as a jumping off point for the development of this study. The primary recommendation of the plan was relocation of the train station back to downtown, a recommendation being realized today. The master plan was also evaluated to determine if its assumptions and now current conditions are still accurate and represent economic, physical and political conditions. The team collaboratively reviewed physical conditions, analyzed technical data to determine feasible options, and further refined the town's vision and goals with the Steering Committee. It was important to discover and define what has been done and what is currently being done, and how those efforts support both immediate and mid-range physical development activity. By defining primary issues, opportunities, and constraints, the group arrived at an understanding of what information is most important for the development community and the town to achieve common goals. Only from in-depth evaluation of current reality can the team develop the necessary strategies, methodologies, techniques and recommendations. The ultimate goal is to establish the regulatory environment, the physical, social and financial framework from which development could occur, and quantify the relationship between potential public and private investments which supports Windsor Locks vision, economic development reality, and physical feasibility.



Previous Planning Efforts

A number of steps recommended in the 2008 Downtown Master Plan have been completed or are in process. The most significant is the station relocation project, which includes streetscapes and way-finding improvements as well as stabilization of the historic train station. Writing of a new zoning overlay district for downtown is also well underway, and being managed by town staff.

While some of the basic facts remain the same as in 2008, such as there was no cohesive downtown, or the lack of programs and regulations in place to encourage development, many facts have changed. Despite the difficult economy of the last few years, Windsor Locks has seen more auto-oriented development along Route 75, and the downtown shopping center of Windsor Locks Commons is currently fully leased.

The other aspect that is different is the regional perspective. Windsor Locks must understand its position within the Hartford area in order to maximize funding possibilities and coordinate investments, especially in transportation. The town is generally ready for change and optimistic about future potential.

Current Initiatives

There are a number of external initiatives and studies, the conclusions of which will have a profound effect on Windsor Locks. As these efforts proceeded on similar timelines, every effort was made to coordinate with the consultants and agencies for each project. The TOD Study completed as many tangential tasks as possible within the schedule and in close coordination with CRCOG and its consultants.

CRCOG's Sustainable Land Use Code Development

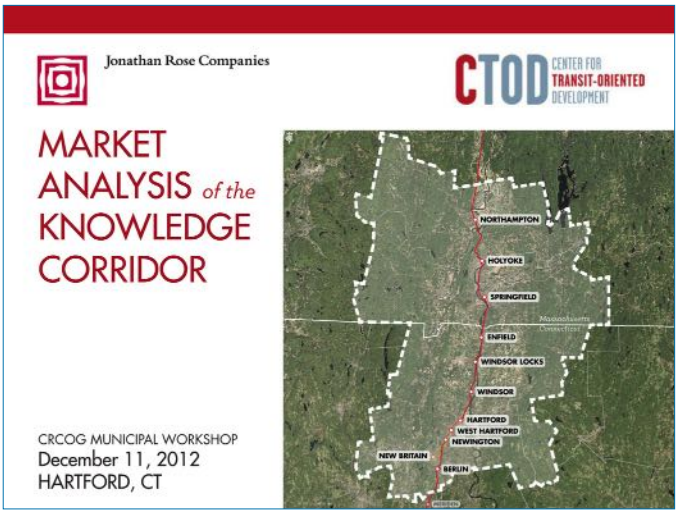
The project will assist a group of Capitol Region communities with analysis of existing regulatory frameworks and creation of model sustainable land use codes, regulations, municipal policies and/or ordinances. The recommendations will integrate and incorporate the CRCOG/EPA Smart Growth Guidelines for Sustainable Design and Development (2009), and address not only the needs and characteristics of each community, but also the role each community plays in the larger regional context and systems (i.e. transit corridors, auto corridors, rail corridors, active transportation trails, village centers and development nodes). In keeping with the broad, national applicability of the CRCOG/EPA Sustainable Development Guidelines, it is also hoped that the model codes to be created will be able to serve as solid examples for other communities throughout the Knowledge Corridor region, and even beyond.

Objectives are to:

- Identify gaps in and barriers to sustainable development in existing municipal codes
- Establish model land use codes, regulations, municipal policies and/or ordinances
- Conduct public education and outreach to define communities' vision for implementing sustainable and livable community techniques, thereby minimizing barriers to implementation

CRCOG's Market Analysis of Bus Rapid Transit and Rail Corridors for TOD

The task will assess and provide realistic expectations of what level and type of development may be supported near bus rapid transit and passenger rail stations in the Knowledge Corridor. The broad goal is to improve understanding of



Parallel CRCOG Study [2]

individual transit-oriented development opportunities, and how they may best fit into the regional economic context. This task will generate recommendations regarding the mix of uses appropriate to individual station locations.

For the purposes of this effort, transit-oriented development is defined to include these key characteristics: compact development, mixed use, high quality pedestrian environments, public space, effective bicycle and pedestrian linkages, and parking management.

ConnDOT's NHHS Environmental Assessment/ Environmental Impact Evaluation (EA/EIE)

ConnDOT's study involves analysis of station locations at both the southern end of town and in downtown areas. It also addresses traffic mitigation initiatives for relocating the train station downtown. Some initiatives are not solely connected to the station relocation, but would improve operation and safety of intersection conditions at Bridge and Main Streets. These mitigations are discussed later in this report. There is now (March 2013) a commitment by the state to relocate the station in the near term.

Historic Station Rehabilitation

The town is about to gain property control of the historic station site from Amtrak. It has been awarded a grant and station rehabilitation design and engineering has commenced. It is anticipated that additional grants will be secured in the near term to carry out rehabilitation recommendations and stabilize the structure.

The Steering Committee and Public Engagement

In order to help guide the process, a steering committee was established comprised of a diverse cross section of the town public and private interests, including but not limited to planning and zoning, real-estate, economic development, business community, ConnDOT, and key politicians. The consultant team meetings with this committee were frequent and productive. As with the previous downtown master plan, many additional stakeholders and interests were consulted throughout the process, including:

- Connecticut Department of Transportation
- Windsor Locks Library
- Windsor Locks Board of Education
- Windsor Locks Housing Authority
- Windsor Locks Department of Public Works
- Windsor Locks Emergency Services
- Windsor Locks Planning & Zoning Commissioners
- Business Owners
- Town of East Windsor

A series of focused and thought-provoking working sessions pertaining to the progress, recommendations and issues throughout the project resulted in insightful and constructive discussions. Some of the questions asked and issues discussed included: What land uses will be provided within the TOD area? At what density? How will traffic and parking changes be handled? Will a safe walking environment be provided? What are the property effects? Many of these issues have been publicly debated in Windsor Locks during the downtown master planning process and more recently during public information sessions relating to the initiative to bring the station back downtown.

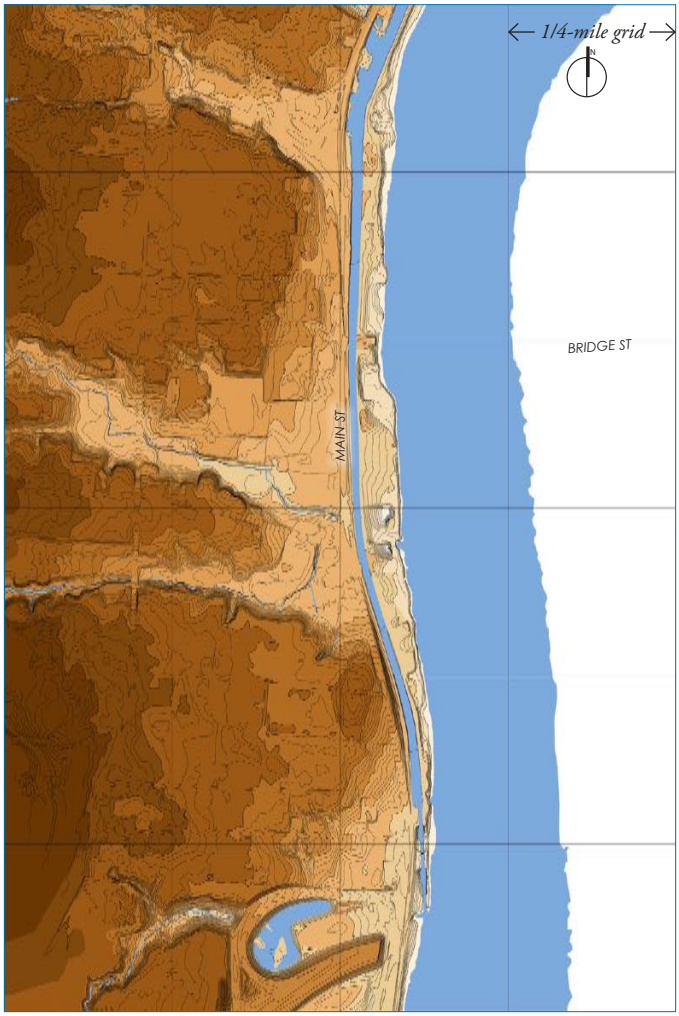
Steering Committee Meeting

Site Analysis

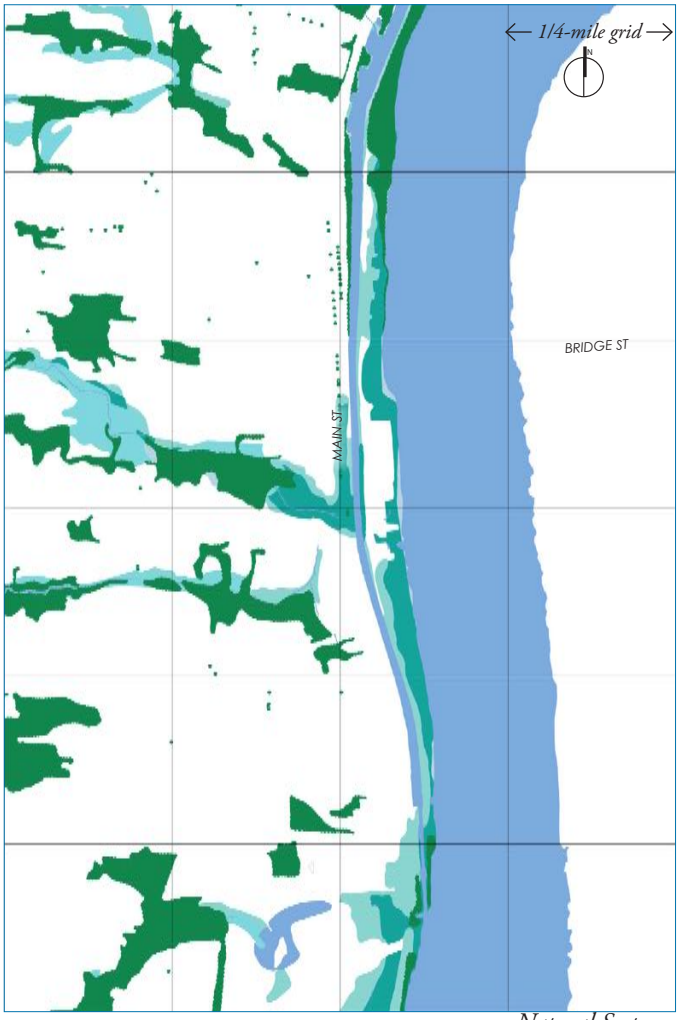
The first phase of the master planning process, from Spring 2012 to Fall 2012, was dedicated to analyzing the study area and listening to stakeholders. The planning team collected both hard data and soft data. Hard data consists of mapping, photography, and analysis of the physical conditions of the community. Soft data consists of the stories, the culture, and the aspirations of the stakeholders.

Existing Conditions

The team came to realize that much of downtown is under-utilized, consisting of undeveloped parcels or surface parking lots. The town is now also visually and physically separated from the original reason for existence. The natural systems provide important connections throughout the town, and these could become an amenity and useful to promoting other sorts of desirable connections.



Topography



Natural Systems

Existing Infrastructure:

Any master plan or vision study should take into account existing infrastructure, determining if systems have the capacity required by potential new development. The team contacted relevant providers within the study area including;

Connecticut Light & Power,

Yankee Gas Services Company of Northeast Utilities,

Tennessee Gas Pipeline Company,

Connecticut Water Company,

Water Pollution Control of Windsor Locks,

Fibertech Networks, and

Windsor Locks Town Engineer.

A preliminary assessment of utility infrastructure revealed that the system has capacity to handle any new development that may occur in downtown. (More detailed information may be found in the Appendix to this report.)

Impervious Surfaces

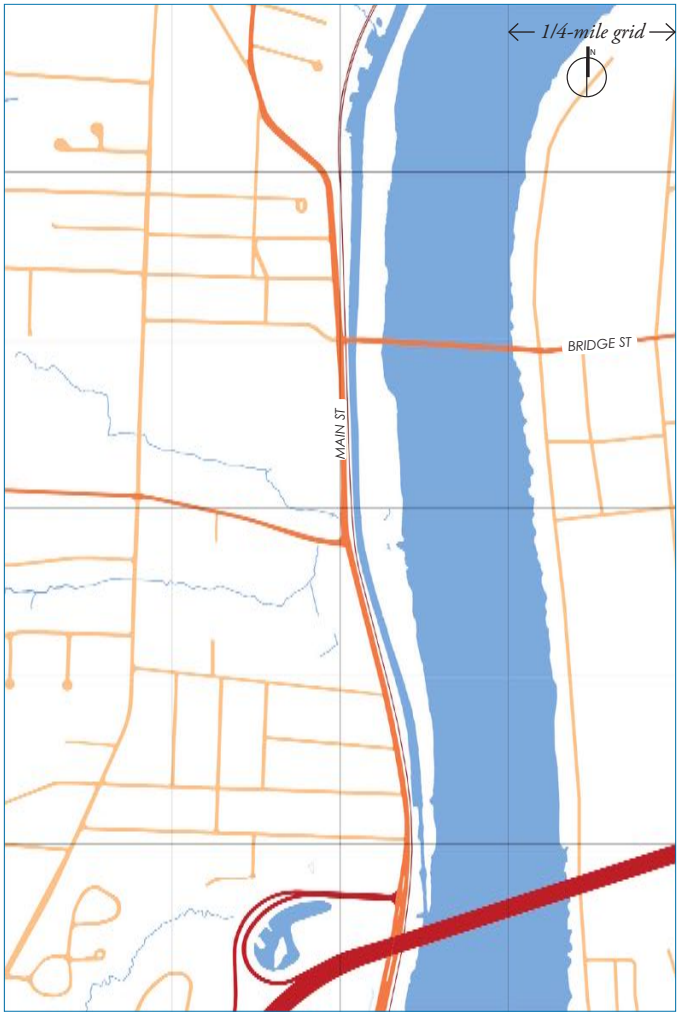
Figure Ground (Building Footprints)

Existing Roadway Network

Windsor Locks is uniquely positioned in the region, and is well connected to regional activity centers via regional highways and arterials, as well as by rail and bus transit. ConnDOT has done significant analysis work related to relocating the Amtrak station in Downtown Windsor Locks. Relocation of the station brings many opportunities, including Downtown's becoming a hub for commuter travel along the New Haven-Hartford-Springfield line (planned to begin operations in approximately 2015), as well as its possible transit shuttle connection to Bradley Airport. With the opportunity come a number of challenges related to access, circulation, and parking. The station will require commuter parking, and will need to be easily accessible by buses, vehicles, bicycles, and pedestrians. This section of the report documents the existing conditions of the mobility network, outlines the mitigation proposed by ConnDOT to facilitate movement of the train station into Downtown, and develops a recommended program of mobility enhancements to foster the redevelopment of Downtown Windsor Locks. The town can be not only a commuter rail station, but truly transit-oriented in its general uses and life.

Main Street (Route 159) is an "urban minor arterial" with a posted speed limit of 30 miles per hour. Running parallel to the Amtrak rail line for much of its length, Main Street begins just south of Interstate 91, south of the current train station site, and continues north into the town of Suffield. Access to the regional transportation network is provided via the Interstate 91 Exit 42 interchange and the existing Amtrak rail station.

South of Bridge Street, the overall roadway width of Main Street is 43 feet, providing a single southbound lane, a northbound through lane and a northbound right turn lane. North of Bridge Street, Main Street has a 48-foot



Existing Street Network

Main Street (Looking North)

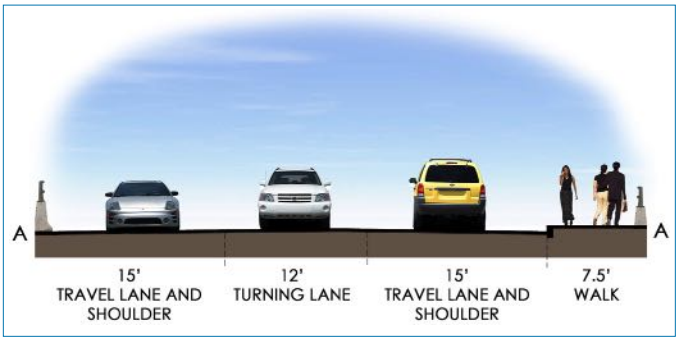
wide cross section consisting of two northbound travel lanes, a southbound through lane and a southbound left turn lane. The daily traffic volumes on Main Street are 12,500 vehicles per day south of Bridge Street and 13,600 vehicles per day north of Bridge Street.

Further north, just south of Chestnut Street, Main Street narrows to a single travel lane in each direction with on-street parking on both sides of the 48-foot wide pavement section. The daily traffic volume on Main Street is 10,500 vehicles per day just south of Chestnut Street. A sidewalk extends only along the west side of Main Street.

North Main Street has a posted speed limit of 25 miles per hour and is classified as an urban minor arterial. It provides a single travel lane with shoulder in each direction, and sidewalks extend along both sides of North Main Street. The daily traffic volume on North Main Street is 5,900 vehicles per day just north of Suffield Street.

The character of Main Street is auto-oriented. The majority of the buildings are one story and are located at the rear of the properties with surface parking lots addressing the streets of downtown. In conditions where the buildings are two-story, the siting is angled so the buildings are not even parallel to any of the streets.

Bridge Street (Route 140) is classified as an urban minor arterial and has a posted speed limit of 30 miles per hour. Spanning the Connecticut River between East Windsor and Windsor Locks, Bridge Street begins at Route 5 (Prospect Avenue) in East Windsor and continues west, terminating at Main Street in Windsor Locks. A single travel lane with a shoulder is provided in each direction between East Windsor and the Montgomery Mills. As it crosses over the Windsor Locks Canal, Bridge Street comprises a 40 foot wide section with a through lane in each direction and a westbound auxiliary left turn lane.



Existing Bridge Street Section at Canal Bridge

The Amtrak railroad tracks intersect Bridge Street just east of Main Street. As trains travel through the area, gates extend across Bridge Street. There are two signals controlling this intersection, one at the intersection itself and one to the east of the Ahlstrom and Montgomery Mills driveways.

Church Street is an east-west oriented local road and has a posted speed limit of 25 miles per hour. The 30-foot wide roadway provides a single travel lane in each direction with sidewalks extending along both sides of Church Street. While it does have sidewalks, Church Street is only two blocks long and primarily flanked by single family residential. With the notable exception of Town Hall, there is very little traffic, vehicular or pedestrian.

Spring Street has a posted speed limit of 25 miles per hour, although traffic often travels above the posted speed, and is classified as an urban collector roadway carrying 3,700 vehicles per day. Beginning just west of Route 75 (Ella Grasso Turnpike) near Bradley International Airport, Spring Street continues east to Main Street, where it terminates. A single travel lane in each direction is provided in the 29 foot wide roadway section and sidewalks extend along both sides. Primarily a fairly low density residential street between the commercial uses at Route 75 and Main Street, Spring Street is a secondary entrance to downtown with a visual terminus of the Montgomery Mill.

Chestnut Street is a narrow, 22 foot wide local road with a speed limit of 25 miles per hour. It begins at Spring Street, extending north where it intersects with Main Street. Chestnut Street provides a single travel lane in each direction between St. Mary's Drive and Grove Street. North of Grove Street, Chestnut Street is one-way northbound. Sidewalks extend along both sides of Chestnut Street and it is a well-scaled residential street.

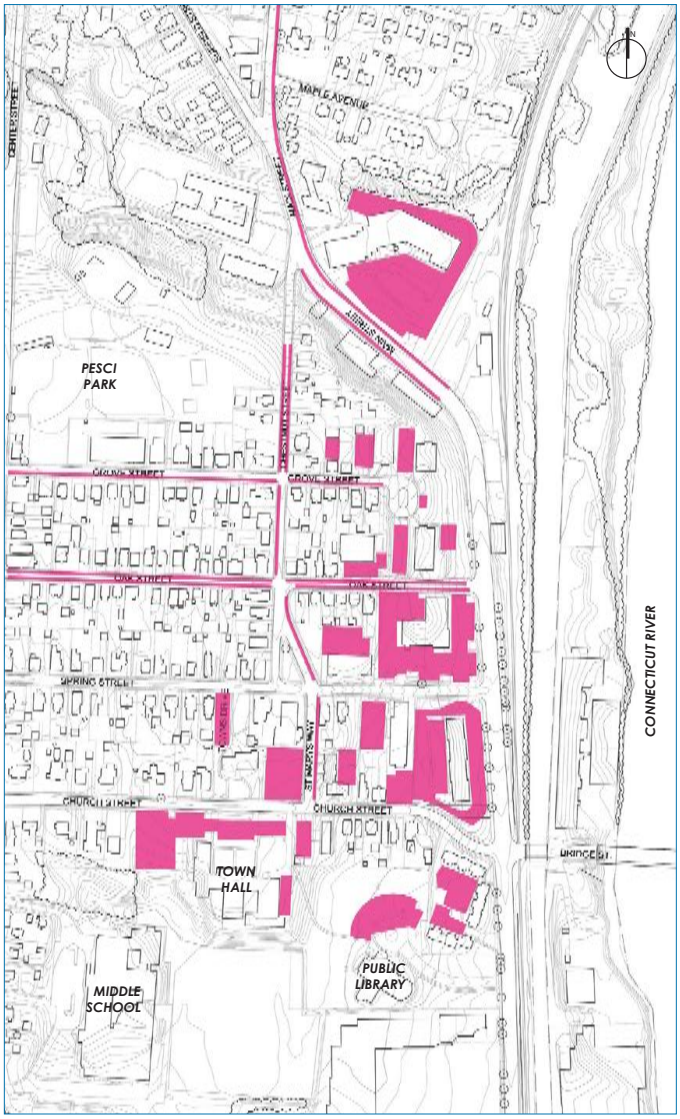
Saint Mary's Drive provides a single travel lane in each direction with parking extending along the east side of the street for the entire length between Church Street and Chestnut Street. It has a speed limit of 25 miles per hour and is classified as a local road.

Suffield Street is an urban collector which with a posted speed limit of 30 miles per hour. The daily traffic volume on Suffield Street is 5,000 vehicles per day just west of North Main Street.

Parking

Existing parallel on-street parking is provided in the following locations:

- East side of St. Mary's Drive
- North and south sides of Oak Street
- South side of Grove Street
- West side of Chestnut Street between Oak Street and Grove Street
- Both sides of Chestnut Street in the segment between Grove Street and Main Street
- Both sides of Main Street from the curve to Chestnut Street



Existing Parking Diagram

These on-street parking spaces are not striped or defined in any manner. On-street parking is prohibited in other locations either by the width of the roadway or by "No Parking" signs.

Most parking in the area surrounding the train station site is off-street in private surface lots. Much of the parking in these lots is provided to the side or rear of the buildings with the exception of CVS Pharmacy and Windsor Locks Common. Here, parking is located along Main Street's frontage. There is no structured parking available in the area surrounding the proposed train station; ConnDOT proposes to construct a 125 space lot adjacent to the proposed train station to serve commuters.

Transit Network

The CT Transit Windsor Locks-Enfield-Somers Express Route #5 bus travels along Main Street (Route 159), providing service from the existing Windsor Locks Railroad Station on South Main Street.

The existing train station in Windsor Locks is approximately one mile south of the Town's Central Business District. Windsor Locks is served by Amtrak's New Haven-Hartford-Springfield Line. Current service consists of six to eight daily round trip passenger trains. The Northeast Regional, Vermonter and New Haven-Springfield Shuttle services make stops at the existing station. A small platform with a shelter and 100 parking spaces are provided at the existing Amtrak station. As of 2010, yearly ridership on this line was 15,816 at Windsor Locks. The Windsor Locks station is the northernmost Amtrak train station in Connecticut, although an Enfield station site is currently in the planning phase. Because of the relationship to Bradley Airport, the Windsor Locks site will be one of the few stations at which all trains will stop. Initially, when new service is launched in 2016, travelers at Windsor Locks will board trains hourly during the peak morning and evening rush hours, and every 90 minutes during off-peak periods. When all the planned rail improvements are complete, trains will operate every 30 minutes during peak periods with up to 25 daily round trips per day by 2030.

The Environmental Impact Assessment for the New Haven-Hartford-Springfield line forecasts that, as a result of service improvements, boardings at Windsor Locks

will more than double to 38,166 by 2030. It projects 133 daily boardings at the Windsor Locks station by 2030. The increase will generate need for 107 additional parking spaces at the Windsor Locks station, and will be a potential catalyst for redevelopment in the proximate downtown area. Windsor Locks has made great strides with ConnDOT and Amtrak so that, at the time of this writing, they plan to relocate the station. This report is predicated on that promise.

Non-Motorized Network

The Windsor Locks Canal State Park Trail runs for 4.5 miles along the east side of the Windsor Locks Canal. The trail follows the towpath of the canal, which carried produce on barges from farms to Hartford. The trail begins at Bridge Street in Windsor Locks and continues north to Canal Street in the Town of Suffield. Given the intersection alignments and traffic volumes, the trail head is somewhat difficult to access via bicycle. ConnDOT has recently completed enhanced bicycle and pedestrian facilities on the Suffield Bridge, connecting the canal trail to points east and north on the east side of the river. No additional dedicated or formal shared bicycle facilities are present in the Downtown Windsor Locks area.

A sidewalk is provided for pedestrians on the south side of Bridge Street over the Connecticut River to East Windsor. Adequate sidewalks are generally provided along at least one side of all roads surrounding the proposed train station. The blocks are long, however, with few pedestrian connections in the north-south direction, and no crossings except at intersections. Particularly, a wall of buildings lines the portion of Main Street north of the curve (near the historic station), and that characteristic coupled with the significant grade changes hinders pedestrian access between the proposed train station and residential areas to the southwest. Significant gains in walkability of the study area should be accomplished prior to the relocation of the train station to Downtown Windsor Locks and opening of service on the commuter line.

Existing Station Location (Quarter-Mile Walk Shown)


Windsor Locks Canal State Park Trail [3]

H.U.D. Livability Principles

The Partnership for Sustainable Communities established six livability principles that will act as a foundation for interagency coordination:

1. Provide more transportation choices. Develop safe, reliable and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions and promote public health.
2. Promote equitable, affordable housing. Expand location- and energy-efficient housing choices for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing and transportation.
3. Enhance economic competitiveness. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers as well as expanded business access to markets.
4. Support existing communities. Target federal funding toward existing communities—through such strategies as transit-oriented, mixed-use development and land recycling—to increase community revitalization, improve the efficiency of public works investments, and safeguard rural landscapes.
5. Coordinate policies and leverage investment. Align federal policies and funding to remove barriers to collaboration, leverage funding and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
6. Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

http://portal.hud.gov/hudportal/HUD?src=/program_offices/sustainable_housing_communities/Six_Livability_Principles

Design Assumptions

As not all conditions are fully in place, the design team had to make some assumptions prior to beginning design work. Most importantly, this study and implementation recommendations are predicated on the train station moving. The other assumptions are not inextricably linked to the station relocation but are certainly closely related. These include; a variety of land uses will be permitted on the station site, the station will serve as a multi-modal hub for connections to Bradley International Airport, and the increased transit opportunities could spur redevelopment of adjacent parcels to higher densities and mixed-uses. Additional assumptions were provided to the design team by the town prior to beginning work, and involved the need to protect and enhance downtown employment opportunities, the desire for a lively and walkable downtown, as well as the need for increased number and variety of housing types downtown.

The work did not duplicate any work associated with ConnDOT's conclusions, the CRCOG recommendations for TOD and sustainable land use model code study or market study. Information generated from these initiatives was assumed pertinent and accurate and was used by the team to develop additional conclusions and recommendations. This work augments these studies as the information pertains directly to the Town of Windsor Locks.

ConnDOT Mitigation Study Assumptions

ConnDOT conducted a traffic analysis as part of the Environmental Assessment/Environmental Impact Evaluation (EA/EIE) for the New Haven, Hartford and Springfield High-Speed Intercity Rail Project. Traffic counts conducted as part of the study allowed a review of existing traffic operations at the intersections and at-grade crossings in the vicinity of the proposed station location. ConnDOT projected future traffic volumes using its statewide travel demand model to determine the background traffic growth anticipated in the area. ConnDOT was particularly interested in the impact that the train "dwell time" (i.e. time halted) at the station would have on Main and Bridge Street traffic. Such stop would mean a two-minute gate-down condition (stopping movements on, to, and from Bridge Street) twice during the morning and afternoon peak hour though for southbound trains only.

The intersections and crossing locations in the vicinity of the train station site operate at acceptable levels of service

(LOS) D or better under existing conditions with the exception of the eastbound approach at the intersection of Church Street and Bridge Street at Main Street which operates at LOS E. However, several intersections are anticipated to experience reductions in levels of service due to the proposed at-grade train crossing and previously-described gate down condition. They include the intersections of Main Street at Spring Street and Main Street at Church Street and Bridge Street. ConnDOT proposed measures to mitigate the impact, in keeping with a "do no harm" guiding principle related to traffic operations (insure that conditions don't worsen from an operational level of service standpoint):

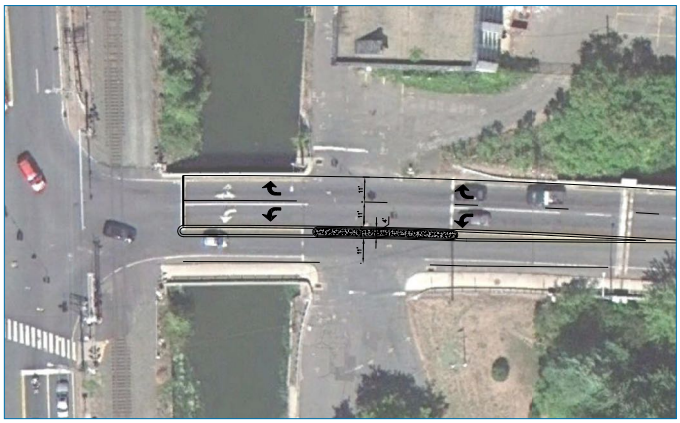
Main Street and Church Street/Bridge Street Modifications

- Prohibit eastbound Church Street through and left-turn movements and reallocate signal green time to southbound Main Street and westbound Bridge Street. Right turns will be allowed from Church Street.
- Modify the signal timing to allow the westbound Bridge Street right turn to receive green time concurrently with the protected southbound Main Street left-turn green phase.
- Modify the signal timing to allow the northbound Main Street right turn to receive green time concurrently with the protected westbound Bridge Street left-turn green phase.

Bridge Street at Ahlstrom and Montgomery Mill Driveways

- Remove the traffic signal at the driveways to the Montgomery Mill and Ahlstrom properties and reallocate green time to Main and Bridge streets. Montgomery and Ahlstrom driveway movements will be restricted to right-turn in and right-turn out operations only. Left-turns into and out of the Montgomery and Ahlstrom driveways will be prohibited.
- Install a median barrier on Bridge Street at the Montgomery and Ahlstrom driveways to physically prevent left-turn movements into and out of the driveways.

Ahlstrom Corporation currently has exiting egress onto Bridge Street at its existing driveway; with the proposed mitigation plan, their trucks would be required to turn right out of the driveway, cross the Connecticut River into East Windsor, travel along Bridge Street to I-91, then backtrack along I-91 to their current warehouse facility near Bradley Airport and the Montgomery Mill facility would be heavily affected as a result of further limiting convenient access to the site. The mitigation causes concerns for The Ahlstrom Corporation, Windsor Locks emergency services and the Town of East Windsor. To alleviate the need for such circuitous routing, a design was developed for a roundabout at the intersection of Bridge Street and Water Street in East Windsor. Such provision would allow Ahlstrom's trucks and Montgomery Mill residents or patrons to make a U-turn after crossing the Connecticut River, significantly shortening their required route and travel time. While not officially a part of the ConnDOT mitigation plan, the towns of Windsor Locks and East Windsor as well as Ahlstrom support the idea. Installation of the median barrier on Bridge Street is longer term mitigation. Predicated on regional growth rates and traffic volume, ConnDOT has established it as a 2030 year build out mitigation. In addition to the East Windsor roundabout there are a number of additional roadway connections and enhancements which may have a very positive effect on mitigating future traffic volumes at the intersection.



Possible Mitigation: Median Barrier at Ahlstrom Driveway

Market Influences

The last 20 years has seen a consistent trend towards new office park construction on the fringes of towns, leading to a weakened office market in the region's core cities. Nationally, key employment sectors that are more concentrated in transit areas include knowledge-based institutions, education/health, and government. Finance and precision manufacturing remain important to the Hartford region, although not growing in employment. This concentration is even more pronounced in the Knowledge Rail Corridor and demonstrates patterns of industry sector concentration that could form the foundation for future development.

As part of the CRCOG study, the station areas were analyzed by comparing Station Area characteristics along two axes – market indicators and urban form conditions. Windsor Locks was classified as "emerging" with "moderate TOD support" which needs to "catalyze". This was used as a starting point for the specific analyses of Windsor Locks.

The Town of Windsor Locks lost 14 percent of its jobs between 2000 and 2012 with a majority of these losses coming from two of Windsor Locks' major corporations, Alhstrom and Hamilton Sundstrand. It appears such job losses were not simply a product of the "great recession" of 2007-2009, since the Town began losing jobs in 2004. Most jobs in Windsor Locks are in transportation and warehousing (26 percent), wholesale (14 percent), food and accommodations (10 percent), and public administration (10 percent). Driving the transportation and warehousing and food and accommodation industries is Bradley International Airport, located in Windsor Locks. Bradley is Connecticut's busiest airport and the second largest in New England. Compared to Hartford County as a whole, a small share of Windsor Locks jobs are in industries that typically occupy office space. Introduction of the train station into the Central Business District and improved rail service will strengthen the Downtown's role as a community service center. More people will be coming into the Downtown each day to ride the train. To maximize visibility and convenience professional and personal service firms will likely be attracted to locations near the train station. Today, there is very little quality office space available in the Central Business District as a whole, and, particularly, near the new train station.

Retail in Windsor Locks is community-oriented, with stores mostly targeting day-to-day needs of the local population and/or airport patrons. According to CoStar there are approximately 614,000 square feet of retail space in the Town of Windsor Locks. Only 3 percent of this space is vacant and less than 10 percent is available. Most of the retail space in Windsor Locks is located on Turnpike Road. The Central Business District contains only 27 percent of the Town's retail. Fifteen percent of the retail in the Central Business District is available for rent. Most of the available space is in Dexter Plaza. The retail in downtown Windsor Locks is either convenience-oriented or discount-oriented. The store mix does not align with a Town where the median income is $62,200 per year. W-ZHA believes that Downtown Windsor Locks' retail potential has been compromised by a one-sided Main Street, a weak pedestrian environment, and topography that limits retail's ability to develop on roads perpendicular to Main Street. These factors make it difficult to develop a critical mass of retail in an attractive, walkable environment. The railroad station will have a definite, positive impact on Windsor Locks retail potential.

Windsor Locks Assets

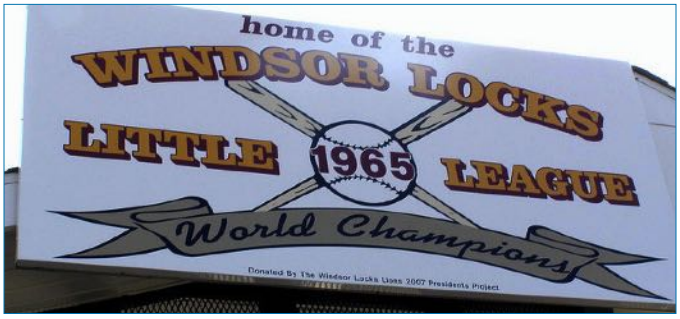
A list of assets and perceptions was developed with advice from the Steering Committee and stakeholders. It included physical amenities, but also spurred discussion of policies. Some of the policy issues or concerns, while officially outside the scope of this work (such as the non-walkable character of Route 75 or the problem of absentee landlords), helped to form the larger context for the project and provide background to the desires expressed for downtown.

Many of the desires coincided with the Design Assumptions, such as a more walkable downtown and increased housing choices, but others, new to the team, were welcome suggestions. They included:

- The potential for environmentally-oriented recreation using the river and the canal,
- The need for safer parking and access to the Canal Trail on the island, possibly using the future pedestrian up-and-over associated with the train station, and
- The possible use of the Middle School playing fields as a town park with a band shell and amphitheater.

The Assets and Desires were combined with the Design Assumptions to form a set of Guiding Principles, or goals, for the project as the work progressed into design and detailing.

Shad [4]



Little League [5]

Windsor Locks Canal [6]

Mill Village [7]

Revisiting the Goals from the Master Plan

1. Rediscover sense of community pride
2. Create vibrant walkable mixed use community
3. Bring activity/residents back to downtown
4. Stabilize/preserve and enhance
5. Investigate short term implementation strategies
6. Capitalize on current and future reinvestment opportunities

Belmont Square, Lakewood, CO [8]

Guiding Principles

Using the master plan goals as a starting point and building on the advice received, this plan proposes a series of overarching strategic directions as well as several specific recommendations. Together, these fundamental directions, accompanied by specific actions, represent a vision for the future of downtown and provide a clear set of directions to guide future public and private investment.

The plan presents five guiding principles which serve to frame the initiatives and policies to serve as touchstones by which to check decisions as the design and implementation progresses:

1) Rediscover a sense of community pride

Rediscover a sense of community pride by

- encouraging the existing employment base and redevelopment opportunities,
- preserving history and traditions through civic art and historical markers, and
- enhancing the existing residential neighborhoods.

Mixed Use Town Center, Fort Belvoir, VA [9]

Adaptive Reuse, New York City

2) Create a vibrant walkable mixed-use downtown community

Create a vibrant walkable mixed-use downtown community by

- creating a "heart of Windsor Locks" place to focus activities and programming,
- redeveloping under-utilized auto-oriented properties to a balance of walkable land uses, and
- increasing downtown living with a variety of housing choices.

3) Capitalize on current and future reinvestment opportunities

Capitalize on current and future reinvestment opportunities by

- promoting the transportation options and linkages deriving from proximity to the airport, train, and interstates,
- emphasizing historic building preservation and re-use, and
- meeting regional, state, and national needs to attract new businesses through exchange of information and strong relationships for mutually beneficial opportunities.

Park Gathering Space, Atlanta, GA [10]

Downtown Windsor Locks, CT [11]

4) Institute a community of landscaped open spaces to extend and reknit the downtown

Institute a community of landscaped open spaces to extend and reknit the downtown by

- celebrating the natural environment as a unique town feature to preserve natural habitat, improve stormwater management practices, integrate native plant material, and allow new development to integrate seamlessly with the natural environment,
- taking advantage of existing open spaces such as the Middle School Fields, St. Mary's triangle, and Pesci Park to form a network of interconnected parks and plazas that tie to the natural features along the River, and
- making "green" evident throughout town polices and activities by having stewardship of the river, canal, and old growth trees.

5) Improve the perception and access to downtown through identity and signage

Improve the perception and access to downtown through identity and signage by

- defining the downtown area with a clear understanding of the transition zones and gateways and using streetscape elements such as light poles and banners to strengthen those definitions
- utilizing land more appropriately with dense areas of sustainable buildings and open spaces that serve multiple functions but manages growth responsibly with a pedestrian priority, and
- using architectural language and materials drawn from Windsor Locks and the surrounding area.

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Chapter 3:
Visioning

Design Interventions Key Plan

An important role of a vision plan is to strive to get the most out of expenditures and to save on future planning and construction expenses. Millions of dollars will be spent by the Town of Windsor Locks and other public entities on public improvements with, or without, a plan. During the same period, private owners will spend millions of dollars improving their property. Public and private investment should contribute toward the Town's permanence, improve the quality of life for residents, and advance the vision of the Town.

A plan will furnish both a snapshot of a point in time and a vision of the future. These plans serve a number of purposes, the most important of which is guiding long-term investment, growth, and development in a locality. A plan will do this by providing a foundation for other, more detailed, land development policy and regulatory documents the locality may adopt. Although the plan does not create any laws or regulations, it identifies methods appropriate for carrying out its policy guidance.

The result is a plan that recommends how and where development should and could occur, where public investment for road and utility improvements should be made, and where new schools, parks and other public facilities should be placed. The plan sets policy, and provides direction and context for public and private investment within Windsor Locks over the next 20 years. The development of a vision plan must be grounded in the reality, of the local and regional market and Windsor Locks position within this market.

The Public Realm

Based on the market studies, input from stakeholders, the capacity of the study TOD area and urban design, transportation and town building recommendations contained herein, full build out plans have been developed to assist in the visualization of opportunities in the new downtown area. Build-out of the downtown will take years, starting with two catalyst sites. Redevelopment of the Montgomery Mill into residential mixed use, and development of the railroad station site as a mixed use community with future integration of the Windsor Locks Commons are together the key to beginning.

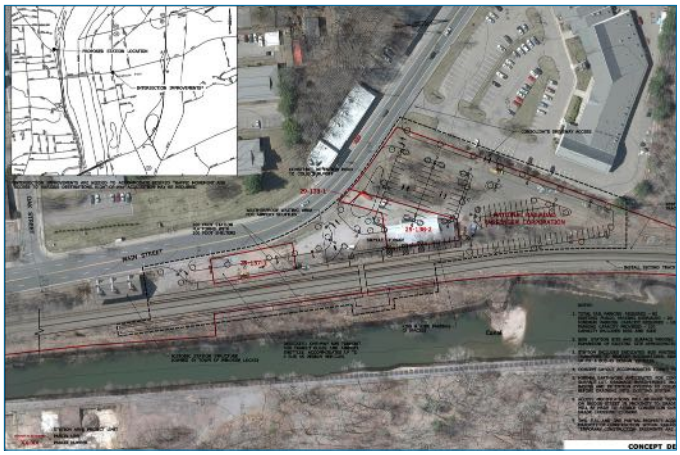
A potentially logical progression of redevelopment may occur both in terms of public infrastructure investment and private development. The sequencing and prioritization of development opportunities is laid out in further detail in the Development Sequencing section of the report. Generally the TOD area has been defined from Two North Main Street and along Main Street to approximately

the Public Library site and westerly to Center Street encompassing the Town Hall, Middle School, and the "mill village". The concentration of mixed use densities focuses on sites close to the station site and it is recommended that densities diminish moving west into the mill village area. These overall development opportunities, the build-out plan and site-specific enlargements of key areas are illustrated on the following pages.

Station Site

The site selected for the relocation of the station is near its historic location. The site is at a focal point bounded by Main Street, the Enfield Falls (Windsor Locks) Canal and canal trail to the east, and the Windsor Locks Commons commercial center to the west (labeled "J" on the Design Interventions Key Plan). Each of these locational attributes should be considered in planning and design of the station site. The majority of the site is publicly-owned including the historic station structure. (There is a small privately owned outparcel on the site which would be acquired as part of the relocation effort). Currently the site is generally undeveloped and vacant, although used by Amtrak as a staging area and rail siding.

Each station stop along the NHHS passenger rail line will be required to accommodate a specific program including, but not limited to, 500' long elevated and accessible platforms, station parking, up and over structures predicated on future double tracking, kiss and ride provisions and drop off areas. Since the Windsor Locks station also accommodates the Bradley International Airport connection, drop off areas for frequent shuttle busses and taxis will also be required.



ConnDOT's Train Site Plan [1]

The station site will be the center of activity within the downtown area, and it is expected that economic development and housing opportunities will become available within close proximity to this area. Station area planning should be oriented toward the future, based in current reality and financial feasibility, and consistent with town-wide goals and common vision. The specifics of site design focus on the unique characteristics of the site and its surroundings and the role it plays within the larger context. The following factors have informed the station site concept plan:

1. The station site must contain a mix of uses in addition to the programmatic requirements of the station function.
2. Relocate Amtrak siding and staging area to the current station site south of downtown.

Station Site

3. In the short term, accommodate airport shuttle service vehicles to the rear of Windsor Locks Commons, thereby reducing large vehicle traffic through pedestrian areas along this section of Main Street. In the longer term, the entrance would accommodate all destination traffic from the west and north, further reducing pedestrian and vehicular conflicts in this area.
4. Share a common entrance to the site with Windsor Locks Commons.
5. All parking to be located to the rear of the site with mixed use buildings along Main Street and integrated with station functions. The design goal must be to extend the pedestrian experience along the side building walls.
6. Allow for shared parking with Windsor Locks Commons.
7. Provide multi-modal bike and pedestrian connections to the historic station and beyond to the Bridge Street intersection.
8. Design should accommodate future redevelopment of the Windsor Locks Commons site with all parcels sharing parking and connections.
9. Provide access over the existing canal for connections to the regional Windsor Locks Canal Trail and potential residential development to the east between the canal and the Connecticut River.
10. Provide bicycle facilities and storage.
11. Design for an activated Main Street with station-related uses on the ground floor.
12. Develop a primary mid-block crossing to access parking and Main Street uses on the west side of Main Street.
13. Make the station/area the visual focus of the street from north and south.

These planning and design principles for the development of the station site will help maximize economic development opportunities, provide for higher density development at the station site and help activate this section of the Main Street downtown.

Middle School Meadows

The minimally used ball fields associated with the middle school provide a great opportunity for the school board and the town to joint venture on summer programming of town-wide events (labeled "A" on the Design Interventions Key Plan). With the possible addition of a future band shell at the edge, so as to not interfere with baseball and soccer play on the fields, the area could become a terrific gathering place for town events such as a concert series or annual summer picnic/fair. Use of this area as a public park would also allow some of the under-utilized land on the library property to potentially be developed as residential units (such as townhomes or a small senior living building).

Middle School & Library

St. Mary's Triangle

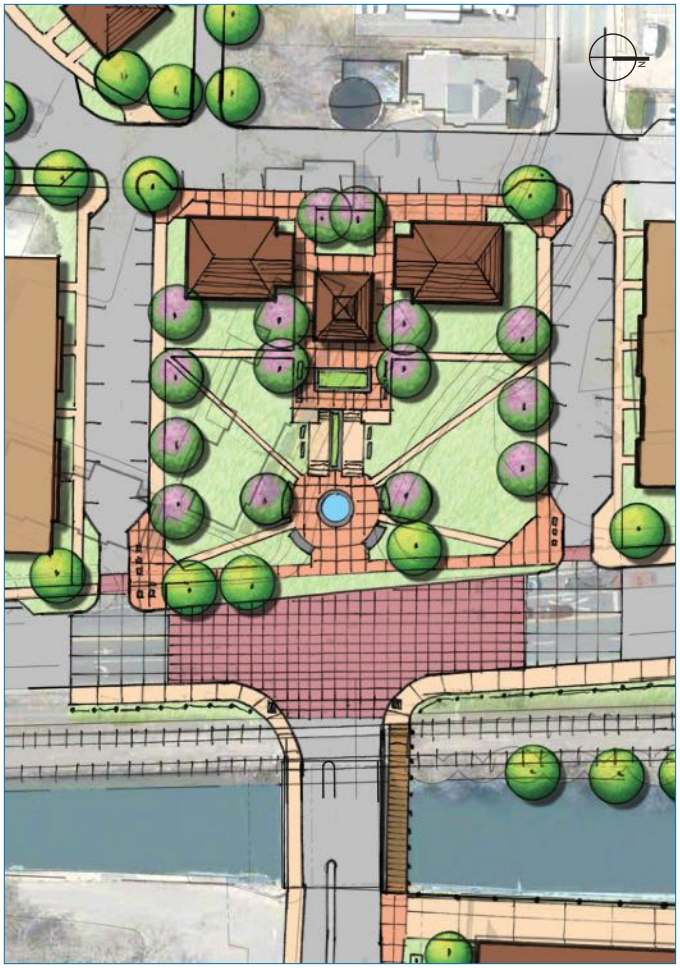
Just north of St. Mary's Church is a triangle formed by Spring Street, Chestnut Street and St. Mary's Drive (labeled "E" on the Design Interventions Key Plan). Chestnut Street is one way southbound and approximately 24 feet wide, but only serves a few residential properties, while Spring Street on the south side and St. Mary's Drive on the northeast side are two-way. This segment of Chestnut Street will be converted to a woonerf, or "living street" by raising the surface to the existing curb level, flush with the sidewalk and lawn areas, yet still accessible to vehicles for access to the residential properties. The intersections of Spring Street at Chestnut Street, Spring Street at St. Mary's Drive, and Chestnut Street at Oak Street will be reconstructed as raised intersections with textured crosswalks as a pedestrian safety enhancement and to create pedestrian-scale space. Landscaping and paving designs, along with the raised crosswalks will slow traffic and provide a new public space.

Bridge View Square

While addressing circulation problems associated with the intersection of Main and Bridge Streets, the team developed a solution with several urbanistic consequences. Bridge View Square is designed to be a phased open space intervention – a triangular public space in the short term and a full square in the ultimate build-out, reflective of traditional New England village greens.

Bounded to the east by Main Street, the north by the realigned Church Street, and the west and south by new streets, the square becomes a memorable identifying place for downtown Windsor Locks (labeled "D" on the Design Interventions Key Plan). The new streets along the west and south sides of the square will provide single lane one-way movement with parallel parking on both sides of the street matching the redesigned Church Street. These on-street spaces provide convenience parking for businesses surrounding the square, and include generous sidewalk width for possible outdoor café use. It will be a civic front porch for Windsor Locks.

St. Mary's Triangle (plan); Woonerf (insert)



Bridge View Square

Main Street (north)

As mentioned in the Mobility Recommendations, north of the curve on Main Street, two travel lanes will be provided with angled parking on the south side of the street and parallel parking on the north side to provide short-term convenience parking for commercial uses on the street level of future new buildings (labeled "H" on the Design Interventions Key Plan).

Chestnut Circle

With the conversion of Chestnut Street to two-way movement and increased bus traffic to the new station location, there is an opportunity to create a North Gateway to downtown Windsor Locks (labeled "L" on the Design Interventions Key Plan). Handling revised vehicular circulation with a roundabout provides as well a good location for an iconic public space. A fountain or statue could provide a visual marker at the northern entrance to the revitalized downtown district.

Peninsula Property (Main & Suffield Streets)

A developer is proposing a bank on the site located in the triangular area in the fork between North Main Street and Suffield Street (labeled "M" on the Design Interventions Key Plan). Locating the bank building to the north end of the site will allow the necessary parking and drive-through banking functionality while preserving the southern portion of the site as a gateway green space. Such a "public" space, visually controlled by the building, is enlightened self-interest of the sort seen in the best of small towns.

Main Street, Chestnut Circle & Peninsula Property

Transportation and Mobility

"Transportation has always played an important role in Windsor Locks, a Connecticut River town in the north central part of the state named for the canal locks built here in 1829. Expansion continued after the arrival of the railroad in the late 1860s; today, the town is an aviation center with an international airport and an important air museum."

From: Windsor Locks (CT) (Images of America) by Leslie Matthews Stansfield, Arcadia Publishing (August 25, 2003)

Great places offer visitors and residents a wealth of choices of how to move. Corridors such as Main Street and Bridge Street do a great job at moving traffic, but not nearly as good a job at moving people, often creating barriers for Windsor Locks residents, workers, and visitors unless they are in a motor vehicle. The desire of the Town is to create a more livable, walkable area, and by doing so to reap the benefits of "feet on the street" with increased activity and economic vitality within and adjacent to Downtown. This objective becomes even more important given the desire to create a TOD around the relocated train station, and to attract new businesses, residents, and visitors to Downtown Windsor Locks. To accomplish that goal, however, will require a rebalancing of the street network to afford accessibility and comfort for moving cars and people. In this way, people who live and work in Downtown will be able to reach the train station, the Canal Trail, businesses and employment centers, and other regional amenities such as East Windsor and Bradley Airport by a variety of travel modes. By building on a commitment to Complete Streets, Downtown Windsor Locks can be defined by a street network that is attractive, walkable, safe and efficient for everyone regardless of their choice of travel mode.

"Place". It is a plain word, but not a simple concept. How is it defined? Specifically, do people feel that they have arrived in Downtown Windsor Locks? Can they park once and be engaged in the commercial, historic and recreational opportunities in Downtown? Do they feel welcomed into an experience unique to Windsor Locks? And can they make a decision whether to drive, walk, bike, or take a bus or train to move from point to point within the region? Studies have shown that walkable places are the most desired and therefore the most valuable places in a community. By using the principles of Complete Streets and rebalancing the mobility network more toward walkability, away from its current auto-centric focus, Downtown Windsor Locks can become a connected, vibrant place where people move about with a choice of viable motorized and non-motorized transportation options. The mobility recommendations for Downtown were developed concurrent with and consistent with the land use and urban design planning goals of developing a TOD to insure a transportation framework that enables, rather than detracts from, the desired vision for Downtown Windsor Locks.

It is imperative that for a TOD to be successful, it must accommodate not only vehicular demand and parking, but also cater to multiple modes such as walking, using transit, and bicycling. The very nature of a TOD dictates that spin-off development such as residential and commercial uses will locate proximate to the station as those residents and businesses will want to take advantage of the proximity and convenience of the commuter rail service.

In developing the recommended mobility initiatives for Downtown Windsor Locks, several guiding principles set the framework for the overall set of mobility enhancements. These principles were geared toward providing a balanced, multi-modal, and interconnected mobility system that not only affords access for motor vehicles, but also supports transit (rail and bus), walking, and biking as viable modes of travel choices for both all users. The principles adhered to are summarized as follows:

- Provide roadway facilities that are consistent with Complete Streets principles – ensuring improvements which accommodate all modes of travel;
- Provide redundant, interconnected road and pathway network within Downtown Windsor Locks;
- Enhance the walkability (friendliness to walkers) of Downtown;
- Provide definitive bicycle connections through Downtown to connect to the Canal Trail; and East Windsor; and

- Enhance transit connectivity between Downtown and other area destinations such as Bradley Airport.

Using these principles as a guiding framework, the following recommendations were formed. Recommendations were developed for roadway, transit, and non-motorized elements as well as for parking. All initiatives are consistent with the recommendations developed by ConnDOT for the proposed station relocation and the findings and vision established in this document.

Connectivity: New Network

New rear lanes paralleling Main Street will provide connections between streets, providing additional pedestrian route choices and removing some of the vehicular traffic from Main Street. Additional roads will be created around the new square south of Church Street, allowing for redevelopment in this area. Additionally, an extension of St. Mary's Way to Elm Street is proposed as a local roadway, to afford residents and visitors an alternate to Main Street to access Elm Street and the areas proximate to Bradley Airport. In the shorter term, the Library driveway and site may be used to provide the same north/south connection options.

What are "Complete Streets"?

"Complete Streets are streets for everyone. They are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a complete street. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations."

From: http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals3

New Roadway Connections

Connectivity: Non-Motorized

Bicycle and pedestrian connectivity will be accomplished via the use of dedicated and shared bike facilities and sidewalks on the roadway network. Specific initiatives include the following:

- Construct a multi-use trail along the east side of Main Street to connect Bridge Street to the train station;
- Reallocate pavement on Bridge Street via lane diets to provide a one-way cycle lane across the Connecticut River to connect Windsor Locks to East Windsor and the Canal Trail;
- Construct sidewalks in conjunction with redevelopment on new Downtown streets to afford safe and convenient pedestrian access;
- Connect the island with Montgomery Mill to the train station via an "up and over" pedestrian bridge crossing the Canal and rail lines;
- Construct connection parallel to the Canal Trail to afford access along the east side of the island and Montgomery Mill; and
- Use sharrows to articulate the presence of bicycles on Town roadways.

The proposed cycle lane along Bridge Street will provide an additional means of travel for commuters from East Windsor to the train station in Windsor Locks. With the redevelopment of the Montgomery Mill site, a pedestrian bridge to the train station, as well as one along the north side of Bridge Street, will provide pedestrian connections from the housing at Montgomery Mill to the commercial area surrounding the train station.

Cycle Track

The area around the proposed train station has a network of sidewalks along most of the streets, which the town will seek to enhance and expand upon. Paths and sidewalks between buildings and along parking areas provide more connectivity. Installing trees and furniture along the streets and infilling with buildings of sufficient height will provide a comfortable pedestrian environment. Pedestrian cut-throughs from Main Street to the shared parking behind buildings will shorten walking distances and extend the reach of those traveling by foot. Crosswalks will be visually enhanced using textured and/or colored pavement at key locations to make them more noticeable to drivers. Bulb-outs at these locations will reduce crosswalk widths and make crossing pedestrians more visible to drivers.

Market Projections and Recommendations

Residential Target Market

This study recommends a substantial increase in housing in the downtown area and within a ten to fifteen minute walk to the station site. The increasing market interest in urban neighborhoods—walkable, with a mix of uses and a variety of housing types and land uses—is the result of dramatic changes in American household composition, the growing cost of commuting by private automobile, and the profound impact of the Great Recession—which began in 2007—on both households and builder/developers. The changing composition of American households may have the most lasting influence, however, because of the changing housing preferences of the two largest generations in the history of America: the Baby Boomers (currently estimated at 77 million), born between 1946 and 1964, and the estimated 78 million Millennials, who were born from 1977 to 1996 and, in 2010, surpassed the Boomers in population. In 1970, 81% of households were families and those households were 3.6 persons and only 10% of population was over 65. Today: 66% of households are families at an average size of 2.6 persons, 27% of households are single persons, and the aging population is predicted to be 20% of the population by 2030. In the next 10 years, housing demand in the Hartford region will mirror national trends of young "Echo Boomers" entering the housing market and retiring/aging Baby Boomers seeking new types of housing. However, there exists a mismatch between where growth is happening demographically and what the market is supplying in terms of housing units. Multifamily housing has primarily been in the Hartford region, while single-family housing (typical detached homes) has occurred around the region's fringes and at the end of the line in Springfield.

The housing analysis shows that an annual average of up to 675 households represent the potential target markets for new multi-family and single-family attached housing units in the Downtown Study Area each year over the next five years. The degree to which Windsor Locks is capable of capturing substantial portions of the growth, marketing the downtown areas is predicated on many factors, not the least of which is the availability of appropriate housing types. As determined by the target market analysis, and reflecting the trends, the annual potential market—represented by lifestage—for new housing units in the Downtown Study Area can be characterized by general household type as follows:

- Younger singles and childless couples—including, among others, office workers, junior executives, artists or artisans, and retail and service employees (76 percent);
- Empty nesters and retirees, 35 percent of whom would be moving from elsewhere in the town (16 percent); and
- A range of urban families (8 percent).

As derived from the tenure and housing preferences of these target households, the distribution of higher-density rental and for-sale housing types is as follows:

Multi-Family *(lofts/apartments, leaseholder)*	For-Rent	340	50.4%
Multi-Family *(lofts/apartments, condo/co-op ownership)*	For-Sale	155	23.0%
Single-Family Attached *(townhouses/ live-work, fee-simple, condominium ownership)*	For-Sale	180	26.6%
Total		675	100.0%

Although there is often the perception that multi-family rentals reduce the value of nearby ownership housing units, this is not the case with appropriate site planning. In fact, there is growing academic evidence that new apartment developments may actually increase values of nearby single-family houses by adding choice to an area that is made more attractive through planning and design.

Montgomery Mill

The market potential delineated by tenure (rental vs. for-sale) and housing type represents a long-term sustainable mix for the Downtown Study Area. The first Downtown projects, however, should be biased significantly to rental housing due to higher rental absorption paces, the long-term lack of any investment-grade multi-family development in the neighborhood, and the greater willingness of renters to move to an emerging neighborhood. The town must identify and aggressively seek development partners for the Montgomery Mill site as a substantial residential or mixed use community with direct connectivity to the new station. This site has been identified as a catalyst site in Windsor Locks' rebirth. Additional market information specific to the Montgomery Mill buildings may be found in the appendix.

Commercial Market

The market area around Windsor Locks' Central Business District is projected to grow. New households will create demand for additional professional and personal services. With the train station Downtown, Windsor Locks' Central Business District will solidify its role as business and service center. The train station should enhance Windsor Locks' competitive position in the office market. Because Windsor Locks' market is growing and the current office supply is old and fully occupied, W-ZHA concludes that there is the opportunity for new office investment in the Central Business District. For planning purposes, W-ZHA considers is reasonable to assume that the market has the potential to absorb an additional 20,000 to 40,000 square feet of office space within 10 years of the train station's

re-location to the Central Business District. Part of this potential could be from existing Downtown tenants looking to expand.

A significant share of this space will likely be condominium office as target tenants will be businesses serving the local market. These types of tenants (doctor's offices, lawyers, etc.) do not need to move around, so they typically prefer to own. Buildings will likely be less than 15,000 square feet in size. Even with the train station, office space will likely require three to four parking spaces per 1,000 square feet and potentially more with medical office space (5 parking spaces per 1,000 square feet). Key locations for office will be in the immediate vicinity of the new train station on Main Street.

Retail Market

With the rail station, Downtown Windsor Locks will now be a permanent asset in the larger community's economy. Today Downtown Windsor Locks plays a minimal role in the larger community's economy and this impacts its retail development potential. Without the train station, prospective tenants have to wonder about Downtown's viability in the future. However, with the train station, enhanced rail service, and the connection to Bradley Airport, Windsor Locks is an important community anchor. The train station should be treated as an anchor that generates pedestrian activity. This activity coupled with strong urban design and residential investment may create enough "buzz" to change Windsor Locks' market competitiveness. It is important to note that retail potential is driven by Windsor Locks' new market position. Retailers will be interested in Windsor Locks if it is positioned as a community "hub". The train riders (133 per day by 2030), themselves, are a very small market with the potential to support only a minimal amount of retail.

It is reasonable to assume that Windsor Locks' Downtown can compete for additional neighborhood shopping and eating and drinking spending from a trade area within a 7 minute drive time (the "Trade Area"). There are 10,158 households within this Trade Area with a median income of $63,500. The Trade Area is projected to grow by approximately 360 households over the next 10 years. With the train station and a pedestrian-oriented environment at and around the station, there is sufficient market to support additional retail and eating and drinking establishments in Windsor Locks.

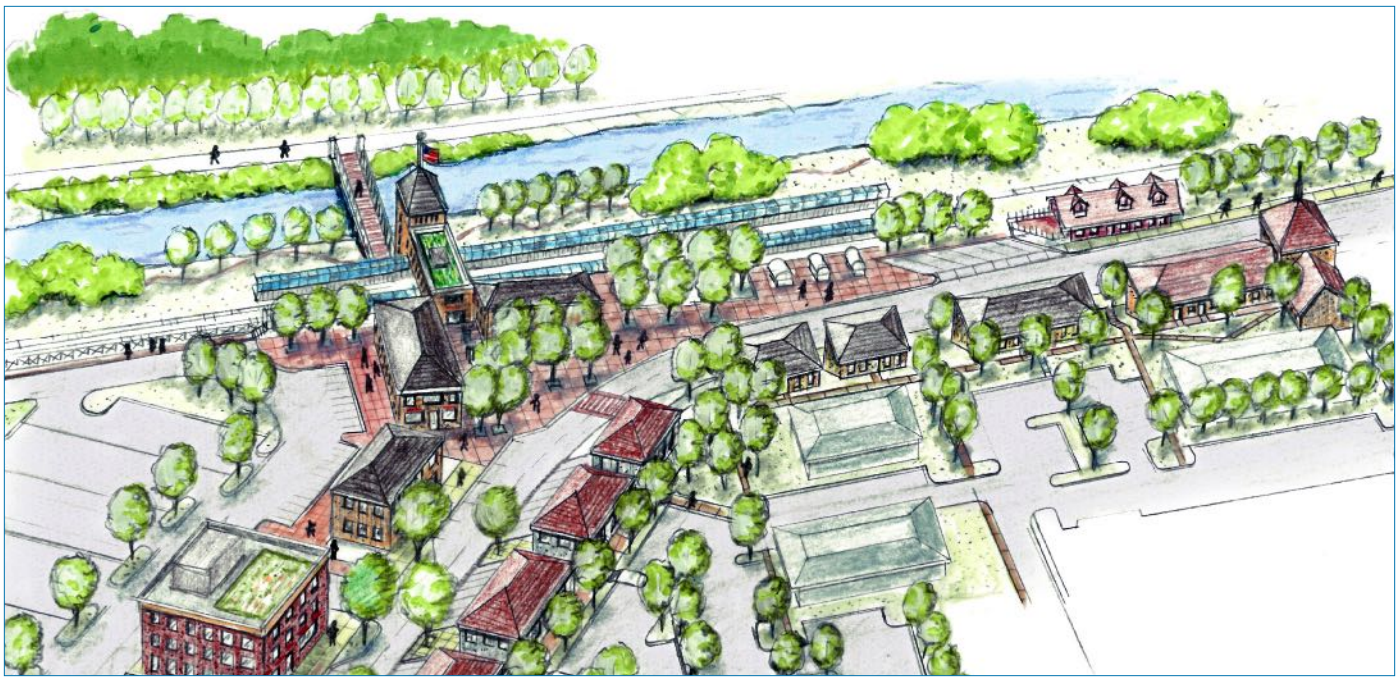
There is the potential for a small grocery of 10,000 to 20,000 square feet in the Windsor Locks Commons shopping center. Such a market would likely follow significant improvement in train frequency and residential development Downtown. In addition to retail and services, there is potential for additional eating and drinking space. Based on the existing restaurants in Downtown and assumptions about their average sales, W-ZHA estimates that the Downtown currently captures approximately 7 percent of the Trade Area's eating and drinking potential. With the train station anchor and a walkable pedestrian environment, Downtown Windsor Locks should be able to capture at least 15 percent of the Trade Area's eating and drinking expenditure potential. By 2022, the Downtown could support 8,000 square feet of additional eating and drinking space. Eating and drinking establishments will seek locations on Main Street.

Bradley Airport [2]

Retail Area Potential

- Office Space:
  20,000 sf - 40,000 sf
- Retail Space:
  30,000 sf - 40,000 sf
- Eating/Drinking Space:
  8,000 sf - 8,000 sf
- Total Retail Space:
  8,000 sf - 88,000 sf

Chapter 4:
Implementing the Vision



Bird's Eye Rendering of North Main Street at the Station and the Canal

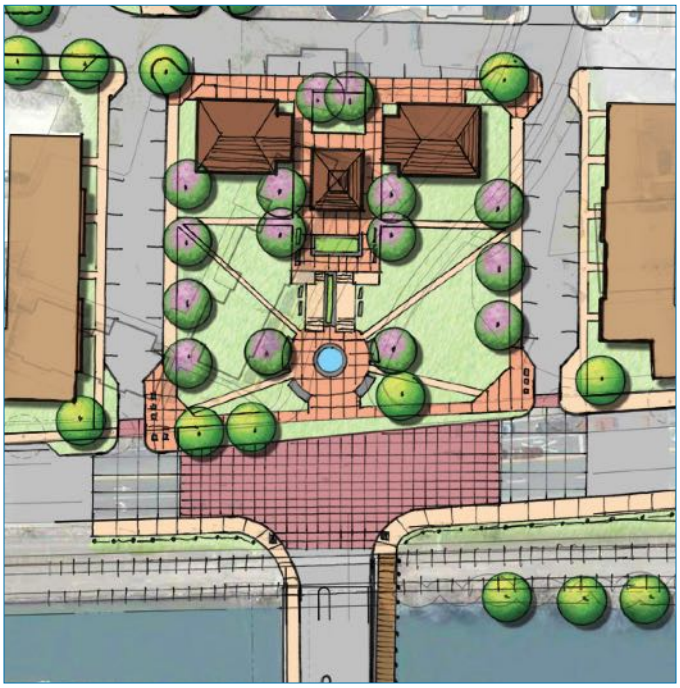
A realistic phased approach to implementation is required in order for the vision elements and design inventions to become more than just proposals. While market demands will dictate much of the schedule for private investment, public infrastructure improvements may be started almost immediately, as funding is available. The intent of this chapter is to provide options, tools, and techniques along with information references and possible funding sources to assist in bringing the community's vision to fruition.

Specific Mobility Recommendations

Proposed modifications to roadways are intended to increase livability of facilities to which they have access and ensure that roadways accommodate all travel modes. Furthermore, enhanced streetscapes will contribute to creating a sense of place consistent with the desired walkable TOD character of Downtown Windsor Locks. Finally, the recommendations consist of not only retrofits to existing facilities, but also new connections intended to serve mobility needs as the TOD becomes real. Pedestrian and bicycle facilities are also included as part of the overall mobility recommendations. (Additional information may be found in the descriptions of the Public Realm Design Interventions described in the next section.)

Main/Bridge Intersection Reconfiguration

The intersection of Main Street at Bridge Street will become a "T" intersection. Church Street will be realigned and provide a single lane one-way westbound with parallel on-street parking on both sides of the street. Only right turns onto Church Street will be allowed from Main Street in accordance with CTDOT mitigation recommendations. In the longer term, the realigned one way Church Street may operate in a one way east bound direction with only right



Bridge View Square Plan

turns onto the southbound lane of Main Street. In concert with the two way conversion of Chestnut Street, this will provide southbound local traffic the option of avoiding longer queues traveling southbound at the Main and Bridge Street intersection.

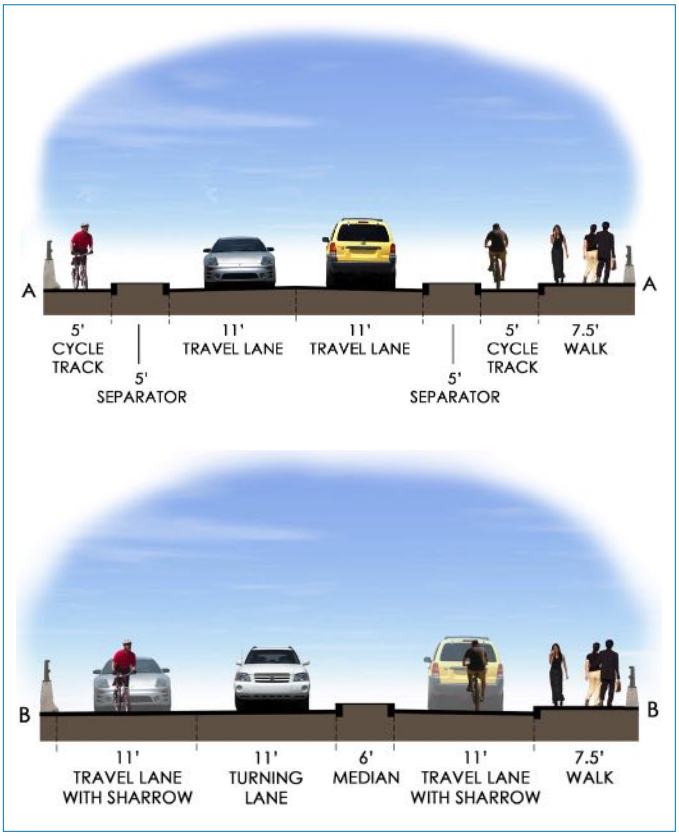
The stop bars at the Main Street approaches to the intersection of Main Street at Bridge Street will be pulled back north of Church Street and south of the new street along the south side of the square. A new wide, raised intersection with Brick pavers and textured crosswalks will create a pedestrian environment to allow for safe crossing at this key location.

Bridge Street Lane Diets and Cycle Track

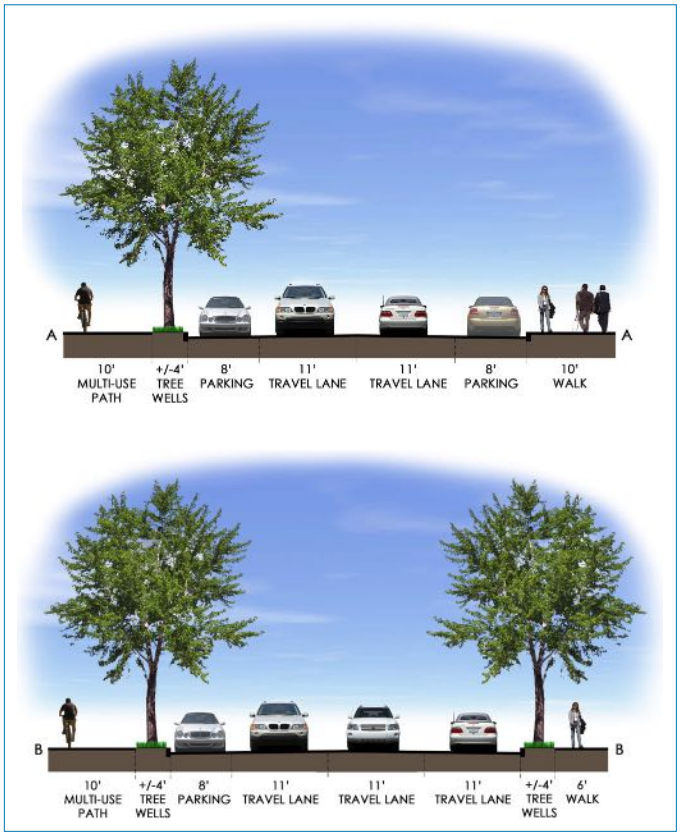
A road diet will allow Bridge Street to provide additional pedestrian and bicycle amenities. The existing section provides wide, 15' travel lanes, a 12' turning lane and a 7.5' sidewalk. Space will be reallocated to provide 13.5' travel lanes with "sharrows" labelled for bicyclists, an 11' turning lane and a 4' median from Main Street to the canal. East of the canal, Bridge Street will provide 5' wide cycle tracks, separated from the two 11' travel lanes by a five-foot raised separator. The 7.5' sidewalk will be maintained along the entire length of Bridge Street. The section width of the road reduces to 39' over the canal bridge, and sharrows are proposed, as opposed to cycle tracks, to carry bicycle traffic to the connector with the Main Street multi-use trail at the intersection with Main Street. An alternate to continue the cycle track would require construction of a separated facility in the form of a pedestrian/bike bridge next to the existing canal bridge, connecting the cycle track to the proposed multi-use trail along the east side of Main Street.

Main Street Lane Diets

From Spring Street to the point where Main Street curves to the west, Main Street will be reduced from four lanes to three, with eight foot parking lanes on both sides of the street. A 10' sidewalk will extend along the west side of the street, while a 10' multi-use path will be provided along the east side of the street to afford continuous bicycle access from Bridge Street to the relocated train station. This will also afford much better and safer connectivity to the Canal Trail. North of the curve on Main Street, two travel lanes will be provided with angled parking on the south side of the street and parallel parking on the north side.



Proposed Bridge Street Sections



Proposed Main Street Sections

Main/Chestnut Roundabout

A roundabout installed at the Main Street at Chestnut Street intersection provides a visual gateway into the commercial and residential areas around the train station. The roundabout geometry will reduce vehicular speeds and calm traffic, as well as normalizing the less-than ideal intersection angle between Main Street and Chestnut Street. Splitter islands provide pedestrian refuge and narrow the crossing width, enhancing pedestrian safety. The roundabout also affords bus access into the rear of the train station, to be used by buses shuttling rail passengers to Bradley Airport and therefore reducing vehicle pedestrian conflicts in the commercial portion of the new Downtown.

Chestnut Circle

Main/Suffield Streets

A developer is proposing a bank on the site located in the triangular area in the fork between North Main Street and Suffield Street. Shifting the bank to the north end of the site will allow the necessary parking and drive-through banking functionality while preserving the southern portion of the site as a gateway green space.

North Gateway Triangle

East Windsor Roundabout

With the elimination of the traffic signal at the intersection of Bridge Street at the Ahlstrom and Montgomery Mill driveways, a splitter island will restrict left-turning movements from the driveways in accordance with the 2030 full build out based on CTDOT recommendations. Other alternatives are proposed in this report which may eliminate the need for the splitter island. A new roundabout in East Windsor at the intersection of Bridge Street at Water Street will provide a turnaround for trucks exiting the Ahlstrom site wishing to travel west to the intersection of Bridge Street at Main Street. The roundabout also simultaneously creates a gateway to East Windsor while providing a tangible gateway for the train station on the east side of the Connecticut River.

East Windsor Roundabout

Parking Initiatives

Parallel and angled on-street parking along the road-dieted segment of Main Street will supplement the parking provided at the proposed train station lot. The on-site parking for new or redeveloped buildings on Main Street will be shared parking lots located at the rear of the buildings, allowing the buildings to be set closer to the street. "Kiss and ride" spaces along Main Street provide short-term parking for commuters to be dropped off in front of the train station. Parking for the Montgomery Mill redevelopment will be provided on-site, with enhanced bicycle and pedestrian connections to Main Street and the train station provided by a connection across the Bridge Street canal bridge and construction of a multi-use path along the east side of Main Street. As redevelopment occurs within the Downtown area, provision of onsite parking should be "right-sized" commensurate with the policy recommendations cited below to insure that enough parking is provided, but that too much surface parking is avoided.

From a parking policy standpoint, the Town should review its parking requirements for development and redevelopment to insure that a proper amount of parking is required for the walkable, TOD-specific area. Walkable, mixed use communities create a "park-once" environment, where visitors can walk among various uses, and where residents have viable, non-motorized alternates to getting into their car to travel places within the Downtown area. In addition to the provision of new on-street parking spaces afforded by the aforementioned street types, additional parking strategies are to be considered.

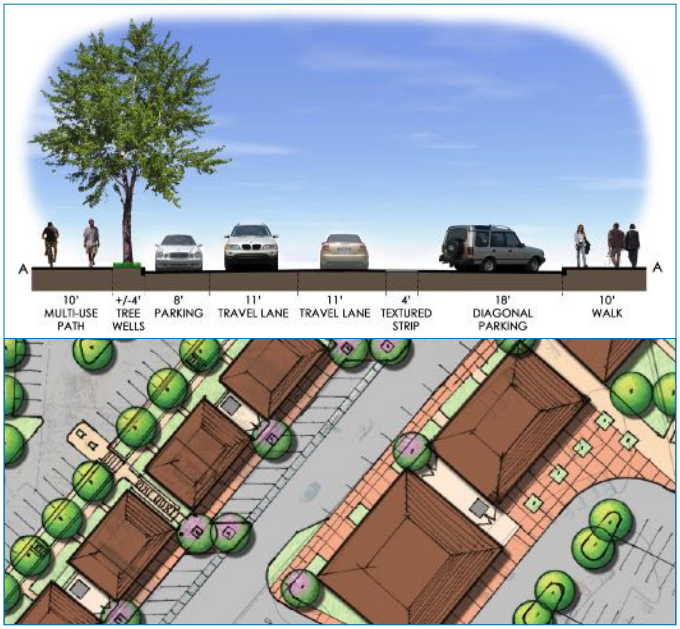
- Reevaluate parking rate requirements in the development ordinance for the TOD area to adjust for the desired mixed-use character of Downtown Windsor Locks. A target ratio would be in the range of 1.5 spaces per 1,000 square feet;
- Allow and/or require shared parking for adjacent land uses and properties within the TOD area. Establish methodology for allowing the calculation of shared parking for development proposals, consistent with the criteria established in the Urban Land Institute's Shared Parking document; and
- Allow on street spaces to count toward the satisfaction of parking requirements for new or redevelopment within the TOD area.

Infrastructure

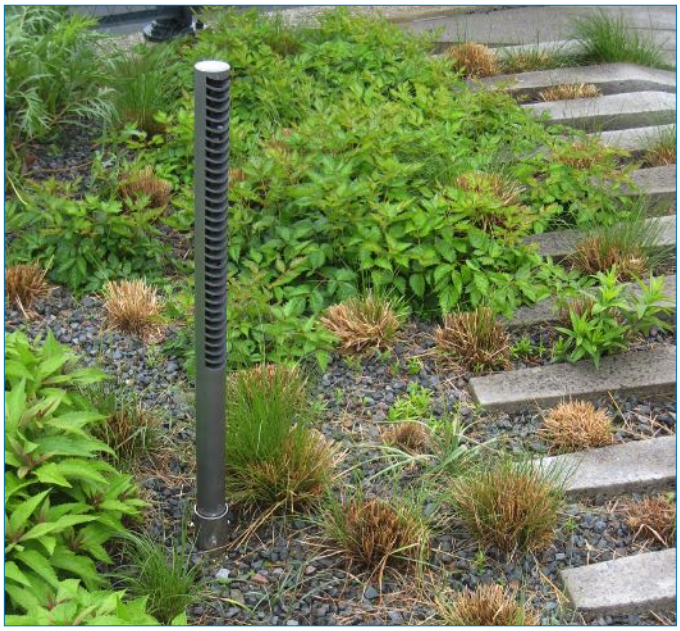
Environment

True environmental sustainability can be partly or mostly achieved through the use of green infrastructure techniques. Green infrastructure relies on infiltration as a way to mimic conditions of undeveloped land and abate flooding that sometimes results from intensive development. Green stormwater infrastructure presents a number of useful advantages:

- Green infrastructure is typically more cost effective than constructing conventional drainage infrastructure as it avoids more/larger pipes.
- By imitating natural hydrology, green infrastructure improves base flow and eliminates potential for increased downstream flooding.
- Infiltration provides stormwater treatment and mitigates stormwater pollution problems, which might otherwise require control via expensive treatment practices.
- Unlike conventional infrastructure retrofits, green infrastructure improvements can be installed incrementally, as opportunity presents across the watershed.



Main Street Diagonal Parking



Green Infrastructure on the Highline

Sustainability Recommendations

Sustainable design is really much more than a vague buzzword. It is an approach to designing new infrastructure projects (roads, drainage, parking, buildings, and so on) in a manner that both reduces project life-cycle costs and minimizes the project's footprint on the environment. The elements of the Windsor Locks project, such as multi-modal mobility, mix of land uses, drainage and parking, offer tremendous opportunities to incorporate sustainable design practices. For example, developing the designs to minimize runoff and storm water discharges both reduces hydraulic loadings to already stressed culverts and drainage systems, and also reduces capital and operation and maintenance required for conventional and closed systems.

In order to coordinate with the work of CRCOG and a number of its member municipalities the recommendations below are divided into categories similar to ones used by the Sustainable Land Use Code Development project.

Energy Conservation and Alternative Energy Conservation

- Launch a public education campaign explaining the benefits of transit-oriented development. For example, reducing transportation costs (transit is less than car ownership) allows increased housing budget and therefore more options and reduces the environmental impact.
- Allow rain water harvesting, composting, recycling, and outdoor clotheslines in setbacks and required open space on lots.
- Incorporate dark-sky provisions in new policies for street lighting.
- Encourage "cool" roofs – green or highly reflective – on new and renovated flat roofed commercial buildings.
- Include green building standards in urban elements and architecture – United States Green Building Council's Leadership in Energy and Environmental Design, Green Building Initiative's Green Globes system, International Initiative for a Sustainable Built Environment's SBTool, National Association of Home Builders' National Green Building Standard, Build-It Green's Green Point Rated products, or Energy Star Rating System.
- Add bicycle parking requirements to the Zoning Ordinance and permit bicycle racks to be located in public space, including the public right-of-way

Alternative Energy

- Encourage, incentivize, and permit small-scale solar energy equipment as an accessory use in all use categories.
- Encourage and incentivize geothermal heating and cooling systems, and allow equipment to be located in setbacks and required open space on lots.
- Study the possibilities for district energy generation and distribution in areas of consolidated redevelopment or at complexes of public use buildings (such as Town Hall, Middle School, and the Library).
- Further investigate the potential of electricity generation from hydro power using the existing turbines in the canal.

Local Food Systems

Farmer's Market at Dexter Plaza [1]

- Ensure that downtown residents have access to a full-service grocery store for fresh foods and produce within walkable distance via transit.
- Coordinate with adjacent communities such as East Windsor and Enfield that participated in CRCOG's Agriculture Viability Project (with American Farmland Trust) to support local agriculture and encourage participation in the Farmer's Market.
- Allow home and community gardens to include on-site home-grown sales as a permitted use.
- Add language to the Zoning Ordinance to include a Farmer's Market as a permitted use in commercial and civic use zones.
- Permit the keeping of small livestock, such as chickens, ducks, rabbits, bees, etc., as an accessory use for single-family detached dwellings. Include specific language banning roosters.

Compact and Mixed-Use

- Create policies supportive of increased transit use and alternate modal choices besides automobile travel.
- Follow Smart Growth recommendations (http://www.ct.gov/opm/lib/opm/igp/org/epa_sg_guidelines_finalsm.pdf)
- Infill development in existing residential neighborhoods with context appropriate building forms instead of creating new subdivisions. Modify the Zoning Ordinance to allow infill homes on non-conforming lots.
- Redevelop functioning but underused shopping centers into higher density mixed-use places following suburban retrofit examples.
- Create new standards for additional street connections - match existing residential-scale streets and don't use larger suburban standards for moving vehicles.
- Limit automobile-oriented uses (no drive-thru, no car dealerships – new or used, no auto service shops, and no gas stations) in the downtown area.
- Permit reduced parking requirements in the mixed-use area adjacent to the train station to encourage transit-oriented development
- Consider allowing transfer of development rights from other areas of Windsor Locks into the downtown area to concentrate development where it is most desired

Housing Diversity and Affordability

- Encourage an improved mix of housing types throughout the downtown. Allow single family attached units in existing residential zones.
- Permit residential type conversions within the downtown area, such as single-family detached being converted to multi-family units and apartments in single-family attached building forms with only staff approval needed.
- Allow mill village type small lot single-family detached homes, live/work units, and accessory dwellings by-right.
- Incorporate inclusionary zoning - mandatory affordability requirements.
- Provide density or height incentives, parking reductions, and/or expedited approvals for affordable dwelling units.

Land Use Regulations

It is important to understand the difference between "standards" and "guidelines" when considering land use implementation strategies. Overlay districts, form-based codes, and zoning rewrites are regulatory; they specify what must be done. Pattern books and guidelines, on the other hand, are advisory only, they suggest what may be done. A good approach is to make sure that the regulations have a primary emphasis on physical form and place-making, with a secondary focus on land uses. Design district overlays and form-based codes are proven to produce results with a specific physical end result in mind, and are both more predictable (less open to interpretation/litigation) than conventional zoning and more flexible for promoting good design, both in the short and long term. Form-based regulations address building mass, building placement on lots, the form and creation of streets and other public spaces, heights, fenestration, entrances/doorways—details that directly affect the way a building and street function—to encourage (or discourage) pedestrian activity and mixed-use

(where desired). Additional more detailed architectural and urban design guidelines may also be incorporated once the regulatory framework is established.

An extensive document review (as well as the physical conditions) was conducted first, to develop a full understanding of the existing zoning and development rights for the study area, the comprehensive plan, recent development proposals, and other public policy issues. Many of the typical concerns about future development growth and traffic congestion are always likely to generate much active discussion that can be allayed by careful planning and coordination of land use and zoning regulations. Success of the strategy will hinge on ability to overcome the conventional regulatory constraints on an holistic land development approach, integrating land use and transportation.

Zoning will be the final control over development within the downtown TOD area and the following recommendations are based on all plans and conclusions throughout the project. Two very important parallel initiatives must also be coordinated with the effort. First, the re-write of the existing downtown Main Street Overlay Zone (MSOZ); second is the CRCOG work on model TOD codes for many of the regional station stops.

The summary recommendation is that the town adopt the draft MSOZ into an opt-in overlay form-based code for downtown Windsor Locks, centered on Main Street and the Station Area, using the elements (regulating plan, building form standards, and urban standards) provided here. The approach has a myriad of benefits:

- Does not require a rezoning of the entire area
- Provides incentives and density increases to property owners who choose to use the new regulations instead of the underlying zone
- Allows decisions already made on bulk issues to be incorporated, instead of being reinvented or revisited
- Follows the guidelines in CRCOG's Best Practices Manual (http://www.crcog.org/publications/CommDevDocs/TCSP/Ch09_FactSheet_Zoning.pdf) for streamlining regulations
- Incorporates TOD uses and model code recommendations into a concise user-friendly document.

Form-Based Code Definition

Form-based codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. They are regulations, not mere guidelines, adopted into city or county law. Form-based codes offer a powerful alternative to conventional zoning.

Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form-based codes are presented in both words and clearly drawn diagrams and other visuals. They are keyed to a regulating plan that designates the appropriate form and scale (and therefore, character) of development, rather than only distinctions in land-use types.

This approach contrasts with conventional zoning's focus on the micromanagement and segregation of land uses, and the control of development intensity through abstract and uncoordinated parameters (e.g., FAR, dwellings per acre, setbacks, parking ratios, traffic LOS), to the neglect of an integrated built form. Not to be confused with design guidelines or general statements of policy, form-based codes are regulatory, not advisory. They are drafted to implement a community plan. They try to achieve a community vision based on time-tested forms of urbanism. Ultimately, a form-based code is a tool; the quality of development outcomes depends on the quality and objectives of the community plan that a code implements.

From http://www.formbasedcodes.org/what-are-form-based-codes

Form-based codes are neither organized nor implemented like a conventional zoning ordinance. They have a primary emphasis on physical form and place-making, with a secondary focus on land uses. While often more time consuming to adopt due to the detailed decisions required upfront, a form-based code creates certainty of what may be constructed rather than each review process being a custom negotiation. Once adopted, the submittal and approval process can be streamlined into a staff level review with a checklist in place of numerous commission meetings and public hearings. A shorter time frame and more predictable outcomes during the review process can reduce risk for investors and developers.

The standards for the Main Street Form-Based Code are based on the existing town fabric and building character, the TOD Study vision plan, and built on the local ordinance legal structure. *The following sections are recommendations only – a full new code requires process details and administrative procedures determined by the Town.* The principal regulatory sections are described below and illustrated on the following pages:

Regulating Plan

A Regulating Plan is the coding key for the form-based code that provides specific information on permitted development for each parcel within the district, as well as a public space master plan. It is somewhat comparable to a zoning map but works hand-in-hand with the vision or master plan. It sets site-specific parameters for basic building form designations, build-to-lines, community spaces, pedestrian pathways, and other special controls for parcels in the area governed by the code.

Building Form Standards

The primary goal of these standards is to shape the public realm (good street-space) with private building frontages. The secondary intent is to ensure that the buildings relate to adjacent properties to form a functional, livable, block structure. The Building Form Standards establish basic parameters governing the bulk (three-dimensional form) and placement of the building envelope and certain permitted and/or required elements, such as storefronts, balconies, and street walls. It is assumed that, within the constraints of building form and type, more than one use per building is possible.

Use Classifications

Under a classifications approach, similar uses are grouped into categories (providing simplification), but some of the critical distinctions among uses are maintained. A wide variety and mix of uses is permitted, and those uses would be allowed to grow and evolve flexibly over time, much as would have happened in a city prior to modern-day zoning regulations.

Urban Space Standards

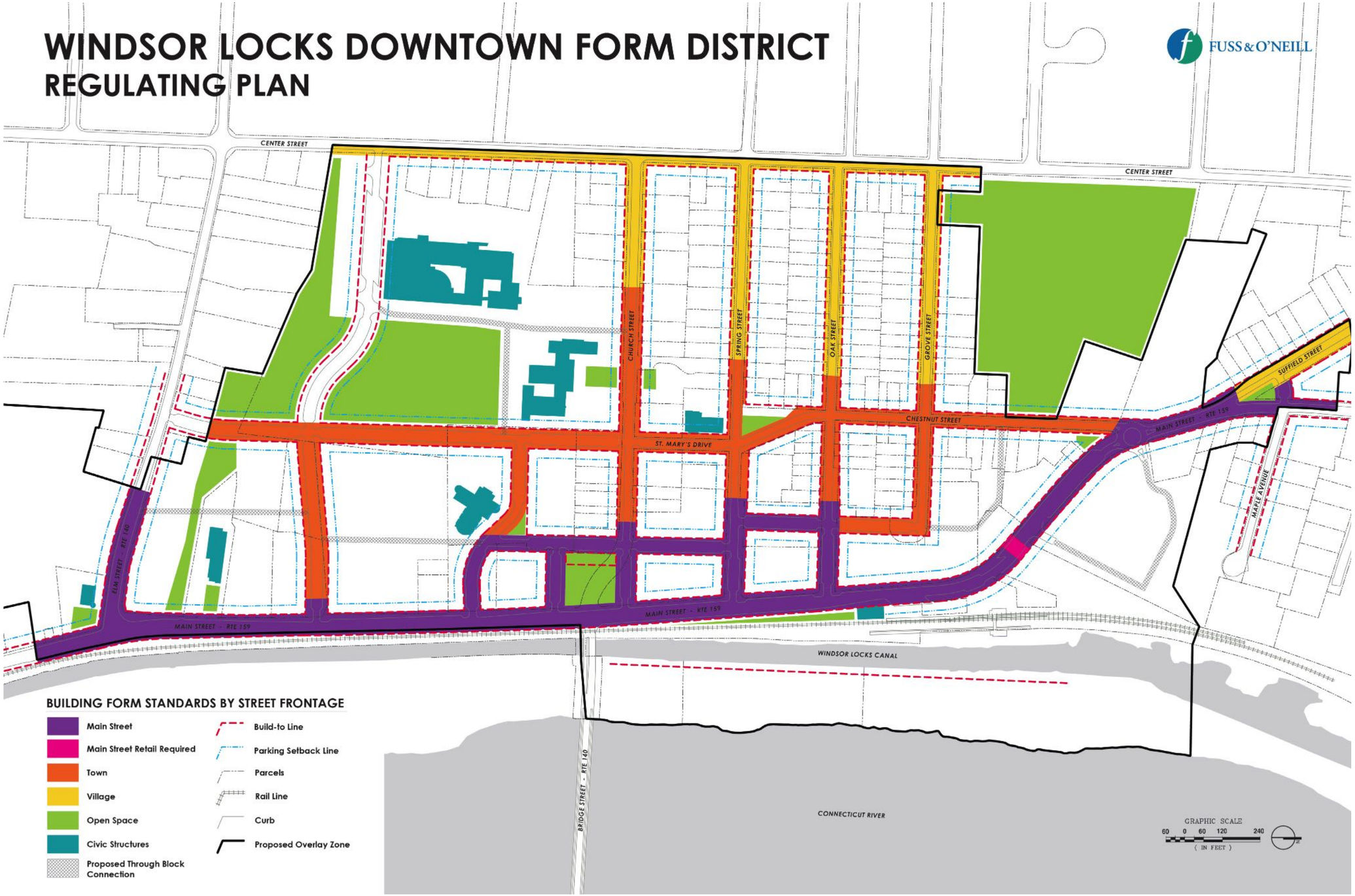
The purpose of the Urban Space Standards is to ensure coherent street space and to assist owners or developers with understanding the relationship between the public space of the neighborhood and their own property and building. These set standards for the placement of street trees and other amenities (e.g., street lights, benches, signs) in the public realm, and on or near each property in order to ensure the coherence and beauty of the streetscape within the project area. This section also includes Street Sections to address on-street parking configurations, sidewalks and tree planting area dimensions, and vehicular travel lane widths. This is not the street and utility engineering, but provides the necessary multi-modal configuration and sets the framework for further engineering.

Architectural Standards

The goal of the Architectural Standards is consistent and quality building character complimentary to the best traditions of the local region. This section governs a building's exterior elements (such as awnings, arcades, bay windows, etc.) regardless of its Building Form Standard and set the parameters for allowable materials, configurations, and construction techniques. These standards do not address style or aesthetics.

WINDSOR LOCKS DOWNTOWN FORM DISTRICT
REGULATING PLAN

FUSS & O'NEILL



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Note: the following pages have a color coordinated format to correspond with the key on the Regulating Plan.

Intent

The goal of the Building Form Standards (BFS) is the creation of a consistent public realm through the creation of coherent street-space. The form and function controls on buildings work together while allowing the buildings more flexibility in use.

The Regulating Plan identifies the BFS for all parcels within the Main Street Overlay Zone.

The BFS set the basic parameters governing the building form for development and redevelopment on private lots, unless otherwise indicated on the regulating plan, as well as certain required functional elements such as fenestration (windows and doors) and street walls, or permitted elements such as stoops, balconies, or front porches.

General Provisions

The following apply to all BFS, unless expressly stated otherwise within an individual BFS or otherwise designated on the Regulating Plan.

Building Size

The maximum footprint for a building is 20,000 gross square feet; beyond that limit a site plan review is required. This shall not limit parking structures built according to this Code.

Building Height

- The height of all buildings is measured in stories, with an ultimate limit in feet, measured from the fronting sidewalk elevation to the top of the wall plate, unless otherwise designated.
- An attic story is not included in the height measurement.
- If an individual story exceeds the maximum story clear height, it shall be counted against another story, and no individual building height may exceed the specified ultimate height.
- The prescribed minimum story clear-height shall be met by at least 80% of the story's floor area.
- Mezzanines that have a floor area greater than 40% of the ground floor's floor area shall count as an additional full story in the story height measurement. Mezzanines shall be set back from the BTL at least 20 feet and its uses shall be limited to a continuation of the ground floor uses.
- Any portion of a parking structure within 30 feet of a building constructed per this Code shall not exceed that building's primary roof ridge or parapet height.

Siting

Buildable Area

- Buildings must be located within the designated buildable area per the BFS.
- No part of any building may be located outside of the buildable area except overhanging eaves, awnings, storefronts, bay windows, stoops, steps, balconies, or handicapped ramps approved by the Director.

Corner Lots

- Corner lots shall satisfy the BTL requirements for their full/all street frontages, unless otherwise shown on the Regulating Plan.
- The building façade must occupy the BTL at a block corner for 20 feet minimum in both directions.

Street Walls

- A street wall, 4 feet minimum and 8 feet maximum height, shall be required along any BTL frontage that is not otherwise occupied by a building. The street wall shall be located not more than 12 inches behind the BTL.

Garage and Parking

- The Parking Setback Line (PSL) is generally 30 feet behind the BTL and extends vertically from the ground floor as a plane to the minimum building height specified per BFS. Vehicle parking shall be located behind the PSL, except where parking is provided below grade or above the minimum required story height.

- Driveways shall be located at least 125 feet away from any block corner or another garage entry on the same block face. These requirements are not applicable along alleys or common drives.

Transitions

- On a lot with more than one BFS across the BTL, the property owner has the option, of applying either BFS for a maximum additional distance of 20 feet, in either direction along that BTL.
- Existing structures located on a lot with more than one BFS across the BTL may use the Building Use for either BFS designated on the Regulating Plan for the existing structure only.
- Where any Main BFS is adjacent to an existing single-family detached residential lot, any structures shall have a maximum height of 30 feet for a minimum of 20 foot depth.
- Where any Main BFS abuts an existing single-family residential property, a garden wall or privacy fence up to 6 feet in height shall be constructed within 12 inches of the common lot line.

Elements

Fenestration

- Fenestration is measured as a percentage of the façade between floor levels. Fenestration shall be distributed such that no 20 foot section of a façade violates the BFS percentage parameters.
- At least one functioning entry door shall be provided along each ground story façade at intervals not greater than 60 feet. (This requirement may be satisfied for large footprint uses, such as groceries and street front parking garages, through the use of liner shops.)
- On the BTL side of the roof-pitch, attic stories may have windows only via dormers and windows in gable-ends.
- No window may face or direct views toward a common lot line within 20 feet unless:
  a. that view is contained within the lot (e.g. by a privacy fence/garden wall) or,
  b. the sill is at least 6 feet above the finished floor level.

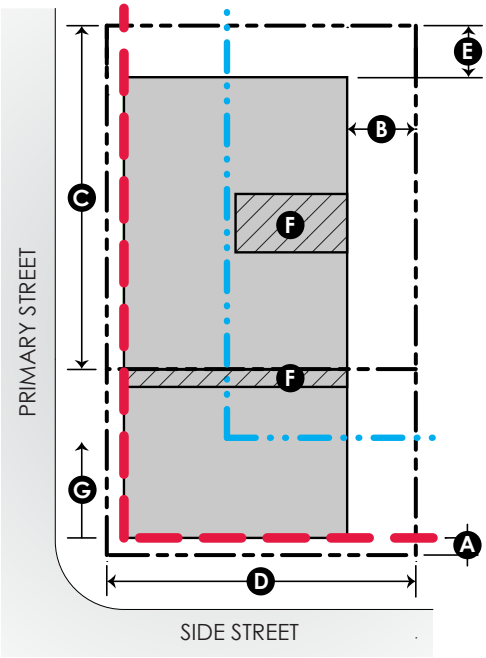
Projections

- Only porches (between 8 feet and 10 feet deep with a width not less than 1/3rd of the façade), overhanging eaves, awnings, storefronts, bay windows, stoops (not more than 5 feet deep and 6 feet wide not including steps, steps, balconies, or handicapped ramps approved by the Director may project beyond the BTL.
- Awnings shall project a minimum of 5 feet from the façade but maintain a minimum of 4 feet back from any street tree or streetlight and maintain a clear height of at least 10 feet.
- Awnings may have supporting columns/posts at their outer edge provided that a minimum of 8 feet clear width is maintained, there is a minimum of 24 inches between the columns/posts and the back of curb, and a clear walkway of 5 feet minimum occurs adjacent and parallel to the awning columns/posts.
- Balconies and stoops shall not project within 5 feet of a common lot line.
- Bay windows shall have a minimum interior clear width at the main wall of 4 feet and not project more than 42 inches beyond the BTL.
- Covered sidewalks or arcades shall have a minimum clear height of 12 feet (signage or lighting permitted to 9 feet clear) and a minimum clear width from BTL to inside column face of 10 feet. The area shall include a minimum 5 feet of clear walkway.

Civic Use Buildings

When designated on the Regulating Plan, civic use buildings are exempt from the BFS and Architectural Standards, excepting any provisions that concern adjacent existing single-family detached or Village BFS.

PLAN



KEY

- Buildable Area
- Private Open Space
- Build-to Line
- Parking Setback Line
- Property Line

DIMENSIONS

A	Build-to Line	±5' from Property Line (refer to Regulating Plan)
B	Rear Setback	20' min.
C	Lot Width	N/A
D	Lot Depth	90' min.
E	Side Setback	N/A
F	Private Open Space	10% of Buildable Area
G	Primary Street Facade	80% min. of Build-to Line

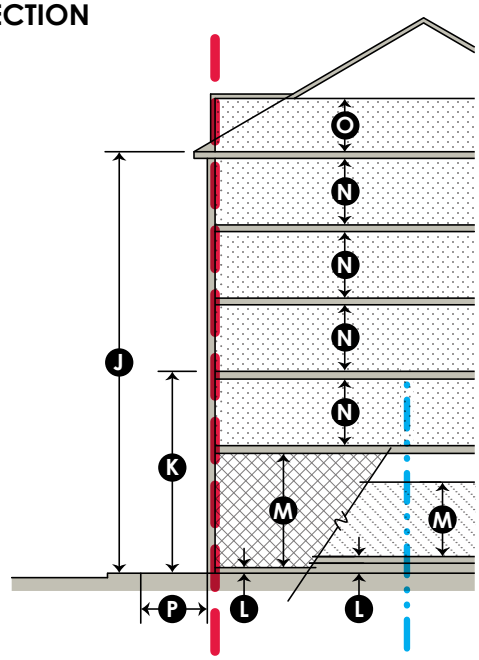
BUILDABLE AREA

- A contiguous private open area equal to at least 10% of the total buildable area shall be preserved on every lot.
- Up to 33% of the required open area may be satisfied through the balconies of individual units.
- Such contiguous private open area may be located anywhere behind the PSL and not including any side or rear setbacks, at or above grade (such as green roofs).
- One access gate (an opening in any BTL) for vehicles having a clear width no greater than 22 feet to a maximum clear height no greater than 16 feet and one pedestrian entry gate no wider than 5 feet shall be permitted within any required street wall. (or building wall?)

RETAIL REQUIRED

- Required Retail: Where designated on the Regulating Plan, these frontages shall use this Main BFS standard, excepting that the ground story configuration shall be for that of a storefront. (See Storefront Windows in Architectural Standards for specific requirements.)

SECTION



KEY

- Build-to Line
- Parking Setback Line
- Residential Use
- Residential OR Commercial (Office only) Use
- Commercial (Office, Restaurant, Retail) Use

DIMENSIONS

J	Building Maximum Height	5 storys 75' max. to top of wall plate
K	Building Minimum Height	2 storys 30' max. to top of wall plate
L	Finished Ground Floor Level *Commercial:* *Residential:*	 Street grade min. / 18" max. 2'-6" min. / 4'-0" max.
M	First Floor Ceiling Height *Commercial:* *Residential:*	 12'-0" min. / 18'-0" max. 9'-0" min. / 12'-0" max.
N	Upper Floor Ceiling Height	9'-0" min. / 12'-0" max.
O	Optional Attic Ceiling Height	8'-0" min.
P	Clear Walkway Width	5'-0" min.

FENESTRATION

- Ground story fenestration shall comprise between 33% and 70% of the facade.
- Where designated as Storefront for retail uses, the ground story fenestration shall comprise between 50% and 90% of the facade.
- Upper story fenestration shall comprise between 20% and 70% of the façade area per story.
- Blank lengths of wall exceeding 20 linear feet on any story are prohibited on all BTL.

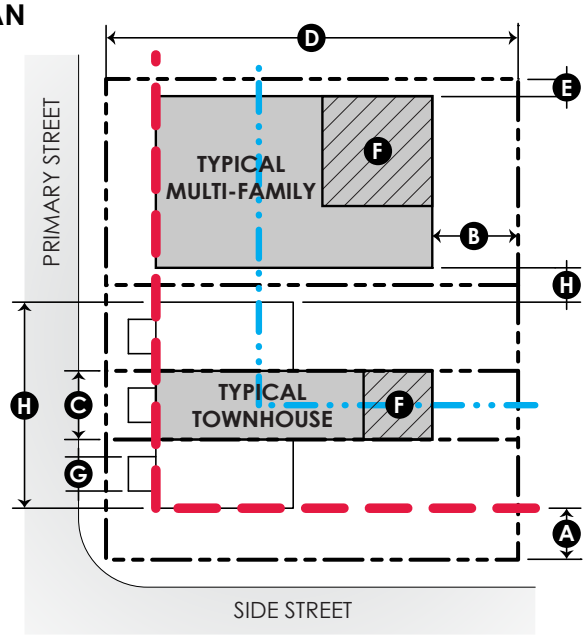
GROUND STORY

- The ground story may be used for Commercial (Office, Restaurant, or Retail) or Residential.
- The ground story shall have a minimum 15 feet of clear interior height (floor to ceiling) contiguous to the BTL frontage for a minimum depth of 20 feet.
- Steep Slope Exceptions: Subject to the Director's approval, for approved grocery operations, where the average slope across a street frontage for a given block face is greater than or equal to 5%, the ground story finished floor elevation requirement may be measured across a frontage width increment of 120 feet to a maximum 27 inches (average) above the fronting sidewalk.

UPPER STORY

- The upper stories may be used for Commercial (Office) or Residential.
- Restaurant or Retail in upper stories are only permitted contiguous to the same ground floor use or as approved by the Director.
- Additional habitable space is permitted within the roof where the roof is configured as an attic story.

PLAN



KEY

- Buildable Area
- Private Open Space
- Build-to Line
- Parking Setback Line
- Property Line

DIMENSIONS

A	Build-to Line	±15' from Property Line (refer to Regulating Plan)
B	Rear Setback	25' min.
C	Lot Width	20' min.
D	Lot Depth	120' min.
E	Side Setback	5' min. / 10' max. (both sides) 5' max. (one side) / 20' max. (one side)
F	Private Open Space	25% of Buildable Area
G	Optional Porch Width	33% min. of Facade
H	Continuous Primary Street Facade Frontage	120' max.

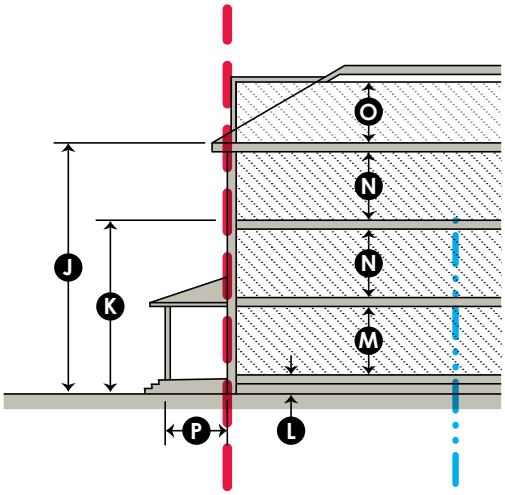
BUILDABLE AREA

- The minimum lot width is 20 feet at the BTL.
- A contiguous private open area equal to at least 10% of the total buildable area shall be preserved on every lot.
- Up to 33% of the required open area may be satisfied through the balconies of individual units.
- Such contiguous private open area may be located anywhere behind the PSL and not including any side or rear setbacks, at or above grade (such as green roofs).
- Although there are no individual side lot setbacks, no row/set of townhouses may exceed 120 feet of continuous attached street frontage. A gap of 10 feet to 20 feet is required between each such attached structure.
- One access gates for vehicles (an opening in any BTL) no wider than 18 feet and one pedestrian entry gate no wider than 5 feet shall be permitted on lots greater than 60' wide along the BTL.
- At-grade parking may be forward of the PSL only when it is within a garage on a side street on a corner lot.

LIVE/WORK FRONTAGES

- Live-Work Frontage Special Conditions: Where designated on the regulating plan as live-work, these frontages shall use this BFS standard, excepting that they have the option of using the ground story configuration for commerce - that of a storefront. (See Storefront Windows in Architectural Standards for specific requirements.)

SECTION



KEY

- Build-to Line
- Parking Setback Line
- Residential Use
- Residential OR Commercial (Office only) Use
- Commercial (Office, Restaurant, Retail) Use

DIMENSIONS

J	Building Maximum Height	3 storys 44' max. to top of wall plate
K	Building Minimum Height	2 storys 23' max. to top of wall plate
L	Finished Ground Floor Level	2'-6" min. / 4'-0" max.
M	First Floor Ceiling Height	9'-0" min. / 12'-0" max.
N	Upper Floor Ceiling Height	9'-0" min. / 12'-0" max.
O	Optional Attic Ceiling Height	8'-0" min.
P	Optional Front Porch Depth	8'-0" min.

FENESTRATION

- Fenestration shall comprise between 25% and 70% of the facade.
- Blank lengths of wall exceeding 15 linear feet on any story are prohibited on all BTL.
- Each BTL/façade ground story unit shall provide a functioning entry door with direct street access.
- Garage doors shall not be located forward of the PSL on the primary BTL/façade.

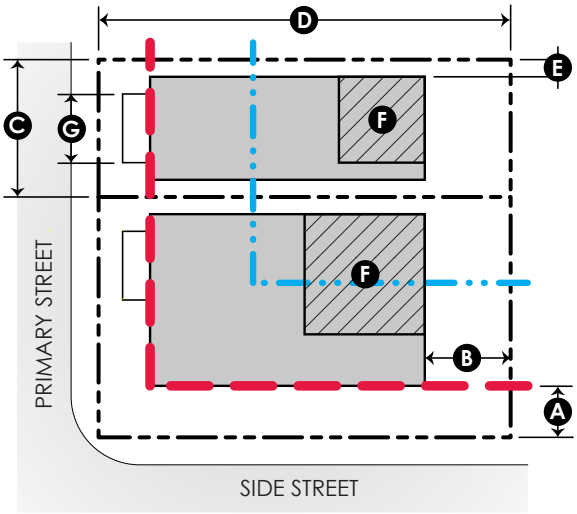
GROUND STORY

- The ground story may be used for Residential or limited Commercial (Home Office, Art Studio, - LIVE/WORK).
- The average finished floor elevation shall be no less than 2'-6" feet and no more than 6 feet above the exterior sidewalk elevation at the BTL.
- A sidewing or ancillary structure shall be no higher than 18 feet in height. (allows accessory unit above garage)
- One basement accessory dwelling unit is permitted per lot (in accordance with all building and health codes), or garage with accessory dwelling unit (maximum 500 square foot footprint) is permitted in the buildable area at the rear of the lot.

UPPER STORY

- The upper stories may be used for Residential only.
- Additional habitable space is permitted within the roof where the roof is configured as an attic story.

PLAN



KEY

- Buildable Area
- Private Open Space
- Build-to Line
- Parking Setback Line
- Property Line

DIMENSIONS

A	Build-to Line	±15' from Property Line (refer to Regulating Plan)
B	Rear Setback	25' min.
C	Lot Width	40' min. / 70' max.
D	Lot Depth	120' min.
E	Side Setback	5' min. / 10' max. (both sides) 5' max. (one side) / 20' max. (one side)
F	Private Open Space	25% of Buildable Area
G	Optional Porch Width	33% min. of Facade

BUILDABLE AREA

- The lot width, measured at the BTL, is minimum 40 feet and maximum width of 70 feet with a minimum lot depth of 120 feet. (this is consistent with existing lotting)
- The minimum side lot setback is 5 feet or as otherwise designated on the Regulating Plan.
- A contiguous private open area equal to at least 25% of the total buildable area shall be preserved on every lot. Such contiguous area may be located at grade anywhere behind the PSL and not including any side or rear setbacks.
- The front yard shall not be paved excepting walkways (6' maximum width) and driveways (10' maximum width). Where double frontage or corner lots exist, any required front yard shall be provided on both streets.
- At-grade parking may be forward of the PSL only when it is within a garage on a corner lot.
- Shared driveways permitted 10' wide (5' of each adjacent property's required sideyard).

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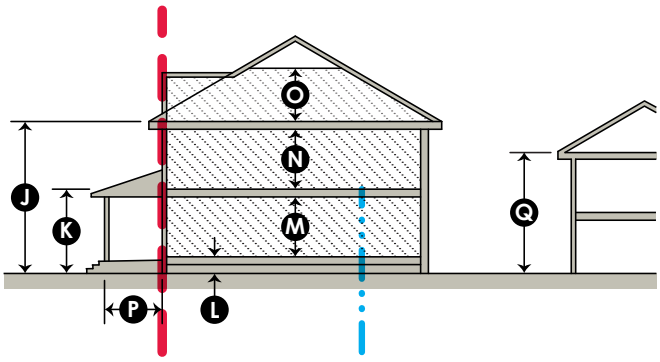


KEY

- Build-to Line
- Parking Setback Line
- Residential Use
- Residential OR Commercial (Office only) Use
- Commercial (Office, Restaurant, Retail) Use

DIMENSIONS

J	Building Maximum Height	2 storys 30' max. to top of wall plate
K	Building Minimum Height	1 story 13' min. to top of wall plate
L	Finish Ground Floor Level	2'-6" min. / 4'-0" max.
M	First Floor Ceiling Height	9'-0" min. / 12'-0" max.
N	Upper Floor Ceiling Height	9'-0" min. / 12'-0" max.
O	Optional Attic Ceiling Height	8'-0" min.
P	Optional Front Porch Depth	8'-0" min.
Q	Accessory Building Height	2 storys max. 18' max. to top of wall plate

FENESTRATION

- Fenestration shall comprise between 25% and 70% of the facade.
- Blank lengths of wall exceeding 15 linear feet on any story are prohibited on all BTL.
- Garage doors shall not be located forward of the PSL on the primary BTL/façade.

GROUND STORY

- The ground story may be used for Residential or limited Commercial (Home Office, Art Studio, - LIVE/WORK).
- Any accessory dwelling unit may be used for Residential only.
- The average finished floor elevation shall be no less than 2'-6" feet and no more than 6 feet above the exterior sidewalk elevation at the BTL.
- A sidewing or ancillary structure shall be no higher than 18 feet in height. (allows accessory unit above garage)
- One garage with accessory dwelling unit (maximum 500 square foot footprint) is permitted in the buildable area at the rear of the lot.

UPPER STORY

- The upper stories may be used for Residential only.
- Additional habitable space is permitted within the roof where the roof is configured as an attic story.

	BUILDING FORM			
	Main	**Town**	**Village**	
RESIDENTIAL USES				
Household Living				
	✓	✓		Multi-family dwelling.
		✓	✓	Dwelling, Single Family Attached
		✓	✓	Single family dwelling.
	✓	✓	✓	Dwelling, Live/Work
	✓	✓	✓	Home Occupations
		✓	✓	Dwelling, Accessory Unit
Group Living				
		✓	✓	Group Home
	✓	✓		Individual and Family Social Services
		✓	✓	Rooming or Boarding House
	✓	✓		Assisted Living Facility
Visitor Accommodations				
		✓	✓	Bed and Breakfast Inn
	✓			Hotel, Inn, Motel or Residence Inn, provided that the lot area is equal to one thousand square feet per unit.

RESIDENTIAL: USE CLASSIFICATIONS

	BUILDING FORM			
	Main	**Town**	**Village**	
PUBLIC AND INSTITUTIONAL USES				
Community Services				
	✓	✓		A bona-fide club not operated for profit, provided that no activity is carried on which results in objectionable noise, audible off the premises.
	✓	✓	✓	Community Center
	✓	✓	✓	Cultural Facility
	✓	✓		Library
	✓	✓		Museum
	✓	✓		Senior Center/Adult Day Care
	✓	✓		Day Care Center
		✓	✓	Home Child Day Care (fewer than 5)
Educational Facilities				
	✓	✓		School, Elementary
	✓	✓		School, Middle
				School, High
				College or University
	✓			Vocational or Trade School
Civic Facilities				
	✓	✓		Governmental Offices
	✓			Other Governmental Facilities
	✓			Post Office
	✓			Fire or EMS Facility
	✓			Fire or Police Station
	✓	✓	✓	Religious Institution
	✓	✓		Philanthropic, educational, and religious use as a duly incorporated non-profit body or governmental unit excluding correctional and mental institutions.
	✓			A fire station, a telephone exchange transformer substation or railway waiting room or passenger station, with no outside service yard or outside storage of supplies
Health Care Facilities				
	✓	✓		Medical/Dental Clinic
	✓			Medical/Dental Lab
	✓			Outpatient Facility
	✓	✓		Drug /Alcohol or Psychiatric Treatment
	✓	✓		Nursing Home
	✓	✓		Halfway House
				Hospitals, sanitorium and convalescent homes, except for correctional, contagious, mental, alcoholic, or drug cases, provided that the lot area is not less than 1/10 acre for each person accommodated including patients and employees and provided further that all buildings so used shall be not less than fifty feet from any street or property line.
Open Areas				
	✓	✓	✓	Public Square or Plaza
		✓	✓	Community Garden
		✓		Public Amphitheater

	BUILDING FORM			
	Main	**Town**	**Village**	
COMMERCIAL USES				
Offices				
	✓	✓		Business offices, professional offices, and financial institutions.
	✓	✓	✓	Professional Services
	✓	✓		Sales (inc. Real Estate)
	✓			Conference or Training Center
	✓			Research and Development
Retail				
	✓			Retail stores, retail service or personal service shops, and research laboratories, including only that fabricating, processing, or manufacturing which is secondary and incidental to such service provided it creates no objectionable noise, vibration, or odor noticeable off the premises, but excluding the use of any explosives or inflammable material which may create a hazard.
	✓			Retail Sales, over 2500gsf
	✓			Retail/Restaurant, small (under 2500gsf)
	✓			Restaurants other than dining car types. Dairy bars
	✓			Full Service sit down restaurants serving alcoholic beverages
	✓			Full Service sit down restaurants not serving alcoholic beverages
	✓			Café seating within a public or private sidewalk area
	✓			Fast food restaurants
	✓			Retail package store for the sale of packaged or bottled alcoholic liquors.
	✓			Washing machine rental establishments, Laundromats.
	✓			Dry Cleaning/Laundry (drop-off/pick-up only)
	✓			Convenience Store (without Gasoline Sales)
	✓			Drug Store/Pharmacy (no drive-thru)
	✓			Grocery Store
	✓			Barber Shop/Beauty Salon
	✓			Parcel Services
	✓			Amusement enterprises similar to an assembly hall, bowling center, billiard or pool room, but excluding shooting galleries and arcades.
	✓			Theaters for indoor motion picture projection or dramatic or musical productions. (Note: amended on 6-7-90)
	✓			Motor vehicle service station for dispensing at retail of motor fuel, lubricants, minor servicing.

COMMERCIAL: USE CLASSIFICATIONS

Intent

Street trees and streetscaping serve to:

- Create visual cues for motorists that the street is a high pedestrian zone;
- Encourage slower speeds;
- Promote walkability and accessibility of the street;
- Enhance aesthetics.

General Provisions

- All plant material (including trees) shall pass any inspections required under State regulations and be designed in accordance with current CTDOT standards for clear zones and sight lines. The Town will be responsible for maintaining landscaping under a maintenance agreement with CTDOT.
- All turf grass shall be solidly sodded at installation—not seeded, sprigged, or plugged. Vegetative groundcovers may be used in place of turf grass.
- In addition to their individual lot, the owner must maintain the following areas:
  a. The portion of a street between their lot line and the back of the curb.
  b. The portion of any alley or driveway between the lot line and the edge of pavement.

Street Trees

- Street trees are particular species of trees that can withstand urban growing conditions and that are planted along the street edge or within curbed medians (small caliper trees only).
- Each street must have street trees planted along a consistent line at an average spacing not greater than 35 feet on center. Where necessary, spacing allowances may be made to accommodate curb cuts, fire hydrants and other infrastructure elements; however, at no location may street trees spacing exceed 45 feet on center.
- Required tree planting area minimum specifications are as follows:
  a. Soil surface area shall not be less than 32 square feet per isolated tree or 24 square feet per tree for connected situations.
  b. No dimension of the soil surface area may be less than 4 feet. Greater dimensions are preferred.
  c. These requirements may be met through the use of bridged slab, structural soil, or other techniques that clearly exceed these standards in the fostering of vital and long-lived street trees.
- Street tree planting areas shall be at grade or not greater than six inches in height above or below the sidewalk.
- At planting, street trees shall be at least 2.5 inches in diameter (at DBH) and at least ten feet in overall height. Species must be selected from the street tree list (see Tree Lists). Consult with the Planning Director for the designated tree species for a particular street.
- Any unpaved ground area shall be planted with groundcover, flowering vegetation, or climbing vines, not to exceed 12 inches in height. Street trees must be "limbed up" as they gain appropriate maturity so as to not interfere with pedestrian or truck travel (minimum 7 feet clear over the sidewalk and 14 feet over the travel lanes of the street) and to maintain visibility.

Ginkgo Street Trees [2]

- Invasive exotic species may not be used anywhere on private lots or other areas.
- The list on this page contains all approved native and acceptable adapted tree species for use in an urban neighborhood. Though all species are approved for urban conditions, cultural requirements (sun, shade, moisture, etc.) may vary. It is important to match species cultural requirements to the site conditions. Other species may be used for planting within a private lot.

Tree Lists

Street trees are part of an overall urban design intended to provide both canopy and shade and to give special character and coherence to each street. The desired aesthetic must be achieved through the use of native and/or proven hardy adapted species. Appropriate street tree list species may grow and change over time. Inclusion in this list must be based on the following criteria:

- Structural – Street trees shape and subdivide the street, increasing pedestrian comfort and adding value to the community. "Canopy Shade Tree" species grow to heights in excess of 60 feet and have a broad canopy—enabling them to clear auto traffic and pedestrians, form a ceiling-like enclosure, and open a clear view of the storefronts at eye-level.
- Pragmatic – Appropriate species have special tolerance to soil compaction and salt. Street tree planting techniques and configurations provide a healthy environment in which the tree can thrive—this will ensure that the trees increase the community value as they grow.
- Design – Species are planted consistently along a given street to provide a special form and character. This allows species diversity at the same time it provides a specific street character by planting different streets with different trees.

Acceptable Street Tree Species

Acer rubrum
Red Maple (Armstrong/Columnar/October Glory/Red Sunset)

Gingko biloba
Gingko (Fastigiate/Sentry)

Gleditsia triacanthos inermis
Thornless Honeylocust (Shademaster/Skyline/Sunburst/Moraine/Halka)

Liquidambar styraciflua
Sweetgum

Platanus x acerifolia
London Plane Tree (Bloodgood)

Nyssa sylvatica
Black Tupelo

Quercus bicolor
Swamp White Oak

Quercus palustris
Pin Oak

Quercus robur
English Oak

Quercus phellos
Willow Oak

Quercus rubra
Red Oak

Sophora japonica
Japanese Scholar Tree

Tilia americana
American Linden (Redmond)

Tilia cordata
Littleleaf Linden (Chancellor/Glenleven/Greenspire)

Tilia tomentosa
Silver Linden

Ulmus
Elm (Accolade/Homestead/Pioneer/Urban)

Ulmus parvifolia
Lacebark Elm

Zelkova serrata
Zelkova (Village Green/Halka)

Streetscape Elements

- Street lights shall be installed on both sides of streets, aligned with the street trees, and unless otherwise designated on the Regulating Plan, at intervals of not more than 80 feet, measured parallel to the street.
- Street lights shall be between 9 and 16 feet above ground in height.
- At the time of development, a developer is required to install street lights and sidewalks, as illustrated in Street Type Specifications, on the side of the street being developed.
- Sidewalks not otherwise designated in the Regulating Plan or Street Type Specifications shall be a minimum of six feet wide and be constructed to meet all Town (and ADA) specifications.
- Street furniture is an element of the overall urban design—not an afterthought. Street furnishings should be simple, functional, and durable.

Streetscape Elements [3]

On-Street Parking

- On-street parking spaces shall count towards parking requirements.
- The parking space/tree planting pattern may be interrupted by existing or new driveways designated on the Regulating Plan, streets, alleys, and transit stops or stations, but at no time may spacing exceed forty-five (45) feet on center.
- Parking spaces must be constructed in a manner that allows proper drainage (generally a "w" profile, having a gutter pan between the travel and parking lanes).
- On-street bicycle parking shall be provided in alignment with the street trees. (The "U" rack is recommended as the standard rack.)

Public Open Spaces

These standards apply to those spaces that are either publicly owned or publicly accessible, as designated on the Regulating Plan.

- Public Open Spaces should be situated at prominent locations within each urban neighborhood and should be dedicated to important events or citizens. The green plants and trees of Public Open Spaces provide a landscape and civic architecture that complement the surrounding private building architecture.
- Pervious paving materials (to allow oxygen for tree roots and absorb stormwater run-off) are encouraged in Public Open Spaces.
- Public Open Spaces shall have at least 60 percent of their perimeter fronting rights-of-way and surrounded by street trees. The dimensions shall be no narrower than a 1:5 ratio and no Public Open Space width or breadth dimension shall be less than 25 feet.
- Public Open Spaces must be designed with a higher percentage of paved surface appropriate to the anticipated amount of pedestrian traffic.
- A clear view through the Public Open Space (from two to eight feet in height) is required, except for tree trunks, street lights, civic

buildings, public art or monuments. The foliage of newly planted trees may intrude into this area until the tree has sufficient growth to allow such a clear trunk height.

- Public Open Spaces shown on the Regulating Plan may not include active recreation structures such as ball fields and courts.
- The maximum slope across any Public Open Space may not exceed ten percent.
- Trees within a Public Open Spaces may also be selected from the Decorative and Park Tree Lists.
- Asphalt is prohibited within any Public Open Spaces.

Measuring Tree Caliper [4]

Private Open Area

- At least 1 tree per 800 square feet of any at-grade required private open area shall be planted in the rear lot area and located no closer than five feet to any common lot line. Exceptions: Sites that are reusing existing structures with no ground level open area are exempt from this requirement.
- Trees must be at least two inches in diameter at DBH and eight feet in overall height (at time of planting). Species must be selected from these Tree Lists. Exceptions: Sites that are reusing existing structures with no ground level open area are exempt from this requirement.

Intent

The purposes of these Architectural Standards are to establish a Main Street downtown character that should be unique in the Town and a reminder of the historic downtown development pattern that once existed in this area.

- These architectural standards establish basic parameters regarding functional building element configuration and palettes for building materials.
- The architectural standards serve to establish a coherent character and encourage a high caliber, lasting quality of development. Buildings shall be reviewed by the Planning Director to verify that they meet the Architectural Standards (as well as the balance of this Code). The Planning Director may also work with the developer or designer to show them how to work within these requirements.
- In order to establish and maintain a sense of place, the standards specify an architectural aesthetic of load-bearing walls and regional materials. Buildings should reflect and complement the traditional materials and techniques of New England. The standards also specify details, such as window proportions, roof or cornice configurations, storefronts, and overhangs.

General Principles

- All building materials to be used shall express their specific properties. For example, stronger and heavier materials (masonry) support lighter materials (wood).
- Equivalent or Better.
  a. While only materials, techniques, and product types prescribed here are allowed, equivalent or better practices and products are encouraged. They may be submitted to the Planning Director for review.
  b. Additional products may be added to the list through a text amendment (administration) to this Code or may be allowed on a case by case basis through a departure from a design standard approved in accordance with the Administration section of the Zoning Ordinance.
- Clearly visible from the street.
  a. Many of these standards apply only in conditions where clearly visible from the street. Note that the definition of "street" includes parks, plaza, squares, and civic greens but not alleys.
  b. These controls therefore concentrate on the public space/views from the public space and minimize interference in the private realm. For example, an architectural element that is visible only through an opening in a street wall is not clearly visible from the street. A building element that is more than 30 feet behind the BTL does not meet the definition of clearly visible from the street.
- For each block face, façades along the BTL shall present a complete and discrete vertical façade composition (see Buildings Walls Configurations and Techniques) i.e. architectural façade composition to maintain and protect human-scale for the street at an average street frontage length of no greater than fifty (50) feet.
- Street facing façades greater than fifty (50) feet in length shall contain variations in vertical elevation at the roofline.
- Individual infill projects on lots with street frontage of less than fifty (50) feet on a block face are exempted from the overall façade composition requirement for that block face, but shall still include a functioning street entry.

Building Walls

Intent

Building walls should define the public realm – the street space. All walls should express the construction techniques and structural constraints of traditional, long-lasting, building materials.

Simple configurations and solid craftsmanship are favored over complexity and ostentation in building form and the articulation of details.

Primary Materials

Only the following materials are permitted (for 75 to 100 percent of the building wall surface area - per façade):

- Brick and tile masonry.
- Native stone (or synthetic equivalent) appropriately detailed and in load-bearing configurations commensurate with local building traditions.
- Wood – clapboard or shingles in a lap (horizontal) configuration and smooth or rough-sawn finish.
- Hardie-Plank™ equivalent or better siding in a lap (horizontal) configuration and smooth or rough-sawn finish (no faux wood grain).
- Stucco (cementitious finish) - smooth or sand only, no roughly textured finish.

Secondary Materials

Only the following materials are permitted (maximum twenty percent or less of building wall surface area - per façade):

- Pre-cast masonry (for trim and cornice elements only).
- Gypsum Reinforced Fiber Concrete (GFRC—for trim elements only).
- Metal (for beams, lintels, trim elements and ornamentation only).
- Urethane Fypon™ equivalent or better (for lintels, trim elements and ornamentation only).
- Split-faced block (only for piers, foundation walls and chimneys).
- Glass block (no closer than 30 inches to building corners).
- Exterior Insulating Finishing System (abuse resistant EIFS only below 8 feet above grade).

Configurations and Techniques

- "Façade Composition" is the arrangement and proportion of facade materials and elements (windows, doors, columns, pilasters, bays). "Complete and discrete" is much like a new façade for a new building. To achieve the Façade Composition requirements within a street frontage a building wall requires, at a minimum, item a. below and two additional items:

Example Building Walls

a. Clearly different ground story façade composition (both framing materials and fenestration proportions) from one bay to the next. For retail storefronts, a transom, display window area and bulkhead at the base shall be utilized.

b. An expression line shall delineate divisions between floors of all buildings, and a cornice shall delineate the tops of facades that do not utilize a pitched roof.

c. Façade composition (clearly different 'bay' rhythm, e.g. 'ABA' – 'ABBA' – 'BAAB' – 'ABCBA').

d. Wall plane projections or recesses along the BTL façade, with offsets in each instance of eight (8) inches maximum.

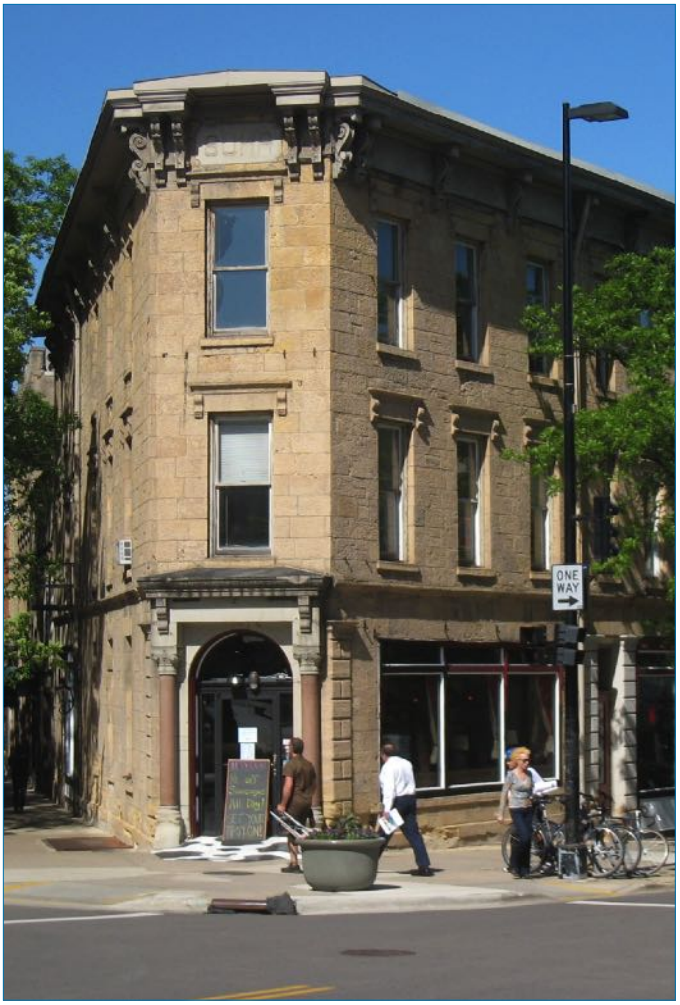
e. Building bays of no more than two (2) feet in depth and 25 feet in width.

f. Wall Material (wall material change – color changes insufficient).

g. Fenestration proportions (minimum difference 20% in height or width or height to width ratio).

h. Change in fenestration percentage (minimum difference 20%; ground floor façades are not included).

- Material changes shall be made with appropriate construction details for each abutting material—as where an addition (of a different material) is built onto the original building.
- Building colors shall be limited to earth tones and muted accents that complement the primary materials of the building.
- Side facades, rear facades, accessory structures, and garages shall be of finished quality and of similar color and materials that blend with the front of the building. Rear facades may be painted tilt-wall or painted block matching the same color of the rest of the building only if the rear façade faces an alley or is not viewable from any public street or right-of-way.
- Wall openings
  a. The horizontal dimension of any opening may not exceed the vertical dimension except where otherwise prescribed in this Code.
  b. May not span vertically more than one story.
  c. Shall correspond to interior space and may not span across building structure such as floor structure and mechanical thickness.
  d. At least one public entrance, with appropriate architectural emphasis, shall be provided every 60 feet along the BTL.



Example Building Walls

Street Walls

Intent

Property lines are physically defined by buildings, walls, or fences. Land should be clearly public or private—in public view and under surveillance or private and protected.

Street walls establish a clear edge to the street where the buildings do not. These requirements include masonry walls that define outdoor spaces and separate the street from the private realm (e.g. parking lots, trash cans, gardens, and equipment). All street wall faces shall be as carefully designed as the building façade, with the finished side out (i.e. the "better" side facing the street).

A street wall is a masonry wall set back not more than eight inches from the BTL or adjacent building façade and built to the height specified in the BFS.

Materials

Only the following materials are permitted:

- Native/regional stone and equivalent imitation stone.
- Metal (wrought iron, welded steel and/or electro-statically plated black aluminum) - may be used for gates.
- Brick.
- Stucco on concrete block or poured concrete (only when a brick or stone coping is provided).
- A combination of materials (e.g. stone piers with brick infill panels).
- Wood - may be used for gates only.

Configurations and Techniques

- Street Walls along any unbuilt BTL shall be built to the height and length specified in the BFS.
- Metal work may additionally be treated to imitate a copper patina.
- Copings shall project between one inch and four inches from the face of the Street Walls.
- Street walls taller than 4 feet shall be subject to the fenestration requirements of their BFS.

Example Street Walls

Roofs and Parapets

Intent

Roofs and parapets should demonstrate common-sense recognition of the climate by utilizing appropriate pitch, drainage, and materials in order to provide visual coherence to the district.

Roof forms are not interchangeable. The roof type is integral to the design of the building and its architectural character.

- The slope of a pitched roof is determined by local climatic conditions (such as the ability to shed snow loads) and physical properties of the roofing material.
- Roof types that have overhanging eaves, such as gabled or hipped roofs, should be of a dimension suitable for sun shade.
- Parapets are guarding walls at the edge of roofs (usually flat) and are formed by extensions of the building façades.
- Cornices are crowning (trim) projections on a parapet wall. These elements should be designed to be appropriate for the style of the building and proportionate for the dimensions of the façade.

Materials

Only the following materials are permitted:

- Clay or concrete (faux clay).
- Tile (beavertail or flat roman).
- Slate (equivalent synthetic or better).
- Metal (standing seam, equivalent or better).
- Dimensional Asphalt shingles.
- Cornices and soffits may be a combination of wood, vinyl, and/or metal.
- Gutters and Downspouts may be PVC, vinyl, and/or metal.

Configurations and Techniques

- Flat Roofs
  a. Flat roofs shall be finished with parapets to effectively screen rooftop mechanical equipment and augment the architecture of the building.
  b. Buildings without visible roof surfaces and overhanging eaves shall provide a cornice or similar form projecting from the top of the building wall horizontally between 8 and 24 inches beyond the building walls on the primary structure.
- Pitched Roofs
  a. Pitched roofs and eaves shall be finished in a traditional manner, with eaves and soffits of typical materials and dimensions.
  b. Pitch (exclusive of roofs behind parapet walls):
     i. Simple hip and gable roofs shall be symmetrically pitched between 5:12 and 10:12.
     ii. Shed roofs, attached to the main structure, shall be pitched between 3:12 and 8:12.
- Overhangs
  a. Eaves shall overhang 18 to 30 inches on the primary structure, up to a maximum projection of six (6) feet.
  b. Eaves and rakes on accessory buildings, dormers, and other smaller structures shall overhang at least six (6) inches.
  c. Timber eaves and balcony brackets shall be a minimum of four (4) inches by four (4) inches in cross- sectional dimension.
- Other Features
  a. Skylights and roof penetrations are permitted only on the roof plane opposite the street (or BTL) or when shielded from the street view by the building's parapet wall.
  b. Dormers (roofed ancillary structures) with windows providing light and air to habitable space within the roof are permitted and do not constitute a story (for height measurement purposes) so long as: they do not break the primary eave line, are individually less than 15 feet wide, and are collectively not more than 60 percent of the BTL façade length.

Windows and Doors

Intent

The placement, type, and size of windows and doors on the façade largely establish the scale and vitality of the street.

- For commercial buildings, they allow interplay between the shop interiors and the street. Commercial uses (especially restaurants and retail establishments) benefit from exposure to the passers-by and the street benefits from the visual activity.
- For residences, they form the "eyes on the street" surveillance which provides for the security and safety for the area.

Windows should be divided by multiple panes of glass. This helps the window hold the surface of the façade, rather than appearing like a "hole" in the wall (an effect produced by a large single sheet of glass).

Materials

Only the following materials are permitted:

- Window frames shall be of anodized aluminum, wood, clad wood, vinyl, or steel.
- Window glass shall be clear, with light transmission at the ground floor at least 90 percent and for the upper floors 75 percent (modification as necessary to meet any applicable building and energy code requirements). Specialty windows (one per façade maximum) may use stained or opalescent glass, or glass block.
- Window screens shall be black or gray.
- Screen frames shall match the window frame material or be dark anodized.
- Doors shall be of wood, clad wood, or steel and may include glass panes.
- Shutter materials may be painted wood or clad wood and must be sized appropriately (one half the window width) and mounted as though operable.

Configurations and Techniques

- All Windows
  a. The horizontal dimension of the opening may not exceed the vertical dimension.
  b. Windows may be no closer than 30 inches to building corners (excluding bay windows and storefronts).
  c. Window panes shall be recessed behind the wall surface a minimum of three (3) inches, except for bay windows and storefronts.
  d. Windows may be ganged horizontally if each grouping (maximum five per group) is separated by a mullion, column, pier or wall section that is at least six (6) inches wide.
  e. Snap-in mullions and muntins are permitted but not considered in any proportion calculation/measurement.
- Ground Floor Windows
  a. Single panes of glass shall not be permitted larger than eight (8) feet in height by four (4) feet in width.
  b. Storefront windows (ground floor commercial uses) shall have a minimum of 80 percent of the window surface, measured between two (2) and eight (8) feet above finished grade, shall allow a view into the building for a depth of at least eight (8) feet.
  c. Storefronts (a transom, display window area, and bulkhead at the base) may extend up to 24 inches beyond the façade or BTL providing a minimum clear walkway is maintained.
  d. Storefronts may not be made opaque by window treatments (excepting operable sunscreen devices within the conditioned space).
  e. For buildings with residential units on the ground level, the minimum area of transparent glass shall be 50 percent.

f. Alternative architectural solutions that continue the rhythm of windows established on the building may be included in lieu of up to 50 percent of the transparent glass requirement, if deemed acceptable by the Planning Director.

- Upper Floor Windows
  a. Windows may be double-hung, single-hung, awning, or casement windows.
  b. There shall be a minimum area of transparent glass of 20 percent (70 percent maximum) for upper floors facing any street.
  c. Fixed windows are permitted only as a component of a system including operable windows within a single wall opening.
  d. Residential uses: Single panes of glass shall not be permitted larger than 36" vertical by 30" horizontal.
  e. Office uses: single panes of glass shall not be permitted larger than 64" vertical by 42" horizontal.
  f. Egress windows must be installed according to the appropriate building code.
- Doors
  a. Double-height entryways (those that span more than one story) shall not be permitted.
  b. A door may not be recessed more than three (3) feet behind its façade or its storefront and, in any case, shall have a clear view and path to a 45-degree angle past the perpendicular from each side of the door.

Example Windows and Doors

Example Windows and Doors

Signage

Intent

Signs along commercial frontages should be clear, informative to the public, and of durable materials.

Signs should be scaled and detailed for a mixed-use and pedestrian-oriented downtown - not for high speed automobile traffic.

- Signage that is glaring or too large creates distraction, intrudes into or lessens the urban experience, and creates visual clutter.
- In order to protect the unique character of Main Street from the potentially negative impacts of excessive signs, all signs shall be designed in harmony with the building and established surrounding development.

Materials

- Masonry, set into the façade.
- Bronze plaques.
- Wood.
- Painted metal.

Configurations and Techniques

- All Signage
  a. The maximum total area of all combined signs is calculated by the length of the building's BTL multiplied by one square foot.
  b. Letters may not exceed 24 inches in height or width and three (3) inches in relief.
  c. Signs may not come closer than two (2) feet to an adjacent common lot line.
  d. Company logos may be placed within the horizontal sign band or placed or painted within ground floor windows.
  e. Where a commercial use abuts the side or front yard (including across a public right-of-way) of an existing residential property, the maximum area of all wall signs facing the residential zone shall not exceed ten (10) square feet.
- Wall-Mounted Signage
  a. One attached wall sign is permitted per commercial use in a manner that is incorporated into the façade of the building, not obscuring architectural features of the building.
  b. Within the area between the second-floor floor line and the first floor ceiling, a horizontal band not to exceed three (3) feet in height is permitted. In no case may this band be located higher than 24 feet or lower than 12 feet above the adjacent sidewalk.
  c. A single masonry or bronze plaque bearing an owner's or building's name may be placed in the building's cornice/parapet wall or under the eaves, and above the upper floor windows. Any such plaque shall be no larger than a rectangle of 18 square feet in size.
- Projecting (Blade) Signage
  a. One projecting sign is permitted per commercial use no greater than 9 square feet per face.
  b. The sign may bung within the permitted wall sign area, perpendicular to the façade (BTL) or from a ground floor overhang or awning.
  c. Hanging signs may be a maximum size of two and a half (2½) feet by three and a half (3½) feet extended no more than four (4) feet from the building with a minimum ground clearance of nine (9) feet.
- Awnings
  a. Any sidewalk overhangs shall have a minimum of ten feet clear height above the sidewalk and be minimum of four (4) feet deep from the building façade (maximum depth is to back-of-curb or street tree planting area, whichever is less).
  b. Only the following materials are permitted: canvas or equivalent (no shiny or reflective materials), metal, or glass.

c. Illumination of signage through the awning/overhang is not permitted.

d. Lettering on awnings shall be maximum six (6) inches in height on the vertical face of the curb side of the awning.

e. One-quarter cylinder configurations are not permitted.

- Prohibited Signage

a. Billboards, free-standing pole signs, monument signs, and roof signs are prohibited.

b. Internally illuminated signs are prohibited, except when the background is opaque and only the copy or symbols are illuminated.

c. No internally lit and flashing, traveling, animated, or intermittent lighting may be mounted on the exterior of any building whether such lighting is of temporary or long-term duration.

d. Portable or wheeled signs and advertising devices located outside any building shall not be permitted, pursuant to other town regulations.

e. Signs painted directly on the BTL façade are prohibited. Signs painted directly on other exterior walls (side, rear, and courtyard façades) are subject to approval by the Planning Director.

Example Signage and Awnings

Lighting

Intent

Appropriate lighting is desirable for nighttime visibility, crime deterrence, and decoration. However, lighting that is too bright or intense creates glare, hinders night vision, and creates light pollution.

Every attempt should be made to preserve the ambiance of the night by applying the appropriate fixtures in the correct locations – street lights are pedestrian-scaled and should occur along all streets but "cobra-head" highway fixtures should only occur at intersections if absolutely necessary.

Materials

- All materials and equipment chosen for lighting fixtures should be durable to age well without demanding maintenance requirements.

Configurations and Techniques

- Street lights shall be located between 9 feet and 16 feet above grade with a maximum average spacing (per block) of 50 feet on center on each side of the street.
- At the front of the building, exterior lights shall be mounted between 6 feet and 14 feet above the adjacent grade.
- Site lighting shall be of a design and height and be located so as to illuminate only the lot. An exterior lighting plan shall be approved as consistent with these standards by the Planning Director.
- All lots with alleys shall have lighting fixtures within five feet of the alley. These fixtures shall illuminate the alley, be between 9 and 16 feet in height, and not cause glare in adjacent lots.
- Lighting elements shall be LED, metal halide or halogen elements with a spectrum of light more perceptively natural. HID or fluorescent lights (excepting compact fluorescent bulbs that screw into standard sockets) shall not be used on the exterior of buildings. These standards may be updated by the Planning Director as technologies advance and produce additional equivalent or better elements.
- Floodlights or directional lights (maximum 100-watt or equivalent) may be used to illuminate alleys, parking garages and working (maintenance) areas, but shall be shielded or aimed in such a way that they do not shine into other lots, the street, or direct light out of the district.
- Flood or uplighting may not be used to illuminate private building walls. Accent lighting may be permitted on civic use buildings, historic buildings, or monuments to highlight architectural features (such as church steeples or courthouse domes).
- Lighting for parking garages shall consider general Crime Prevention Through Environmental Design (CPTED) intent and guidelines.
- Holiday lighting, temporary, is exempt.

Example Lighting

Service Equipment

Intent

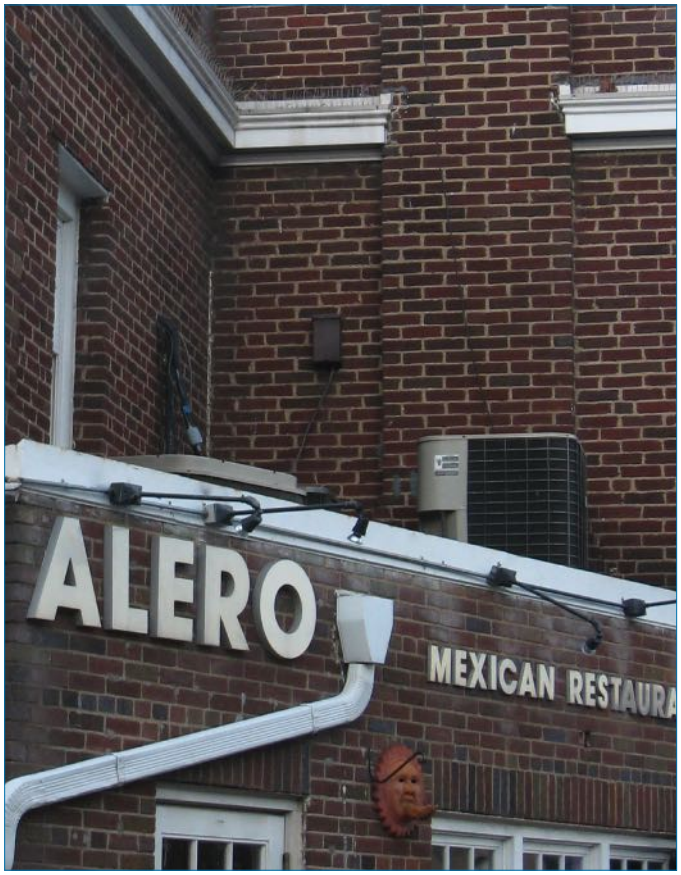
- Service equipment is generally any mechanical heating, ventilation, and air conditioning (HVAC) equipment or electrical machinery.
- Service equipment should not be located in any public right-of-way or be visible from the street.
- Service equipment should not detract or interfere with the pedestrian space or block the sight triangle.

Materials

- Screening must be a six (6) foot high minimum opaque fence made of wood or masonry (not chain link or any other type of rolled fence).

Configurations and Techniques

- The following shall be placed behind and away from any BTL and shall be screened from view from the street: air compressors, exhaust hoods, pumps, water heaters and/or softeners, transformers, utility and telephone company meters or boxes, dumpsters and or garbage facilities, storage tanks, and similar elements.
- Roof mounted equipment shall be placed behind and away from any BTL and be screened from view from the street or any public right-of-way.



Poor Example: Service Equipment Clearly Visible from Street Space

Development Strategies

The implementation plan is directly related to the mission and vision of the plan. Implementation strategies reflect the findings of the retail, housing and commercial market analyses and the public's input. They are also graphically expressed in the Vision & Development Plan and urban design program.

Like most small downtown areas, Windsor Locks is a complex place. Disinvestment, past urban renewal efforts, relocation of the train station, and a lack of general activity combined to create a sterile and unappealing environment. The downtown is in a state of crisis. The master planning process thus far has looked at opportunities for revitalization predicated on relocation of the station back downtown, creating the opportunities for transit oriented development and overall town building or rebuilding.

A key set of recommendations revolves around the unique natural systems coming together in downtown Windsor Locks. These can engage the local population, creating opportunities for education and exercise, involving all members of the larger community regardless of socioeconomic status.

The likelihood of all the opportunities coming to fruition in the short term is slim, and so we must look for a likely sequence of actions and how each could build upon others to begin the transformation process. This is referred to as "development sequencing". Understanding the basics of sequencing process allows the town to target likely sites or improvements, paving the way for more successful sequential implementation. Improvements often begin as small efforts which improve visibility, aesthetics, connectivity and so on. As success builds, so does community pride, downtown use and real-estate values, paving the way for a necessary uplift of future success. Windsor Locks is no different.

Perhaps the most difficult sequencing is the first action. It must be bold, grounded in market and physical feasibility, profitable to the town or development entity and consistent with the established downtown vision. This is referred to as the "catalyst site," and in Windsor Locks, that site is the Montgomery Mill property.

Experience has shown that an understanding of barriers, is critical to framing research. The following observations are grouped into categories of issues facing many small-to mid-size downtowns. Successful sequencing strategy depends on accurate identification of both opportunities and barriers, and on finding the political will to share this information with the community. Those issues discovered, it is possible to define a market-based strategy (vision) for near- and long-term implementations (development sequencing), one with a good chance of success.

Market Barriers

Development recommendations must be based in understanding of the market and how it may be "captured" by the unique assets of downtown. Done right, the downtown will create its own self-sustaining market. The issues:

- Correctly defining the market.
- Developing a unique identity by fore-grounding Downtown's assets.
- Filling the financial gap normal in early projects.
- Educating the "delivery system" and understanding the various methods and strategies used in redevelopment projects.
- Assisting with property assemblages, where they are required.

Financial Barriers

One of the greatest challenges in Windsor Locks is short-term financial feasibility. Currently, land and real-estate values will not support development or redevelopment without outside financial assistance in the form of grants, in-kind services, tax abatements, development of special taxing districts, bonding, and other incentives and municipal financial commitments. Redevelopment activity simply will not occur until the financial gaps are addressed.

This report can only point out the issue of political will and probable financial support. There is no doubt the town will inevitably need to allocate resources for the effort required to rejuvenate downtown. The commitments may include, but will not necessarily be limited to:

- Infrastructure improvements to support future growth.
- Matching funds for outside grants.

- Transportation, streetscape and aesthetic infrastructure improvements.
- Assistance with environmental remediation.
- Funding for parcel consolidation on Main Street.

It is likely there will be state or federal grants available to help offset construction costs. In addition, creation of public-private partnerships will be critical to finding and acquiring funding from the private and public sectors. Such sources will never cover all the design and improvements necessary, and so the town must make a long term, coordinated commitment to identifying applicable grants and allocating funding for capital improvements.

Physical Barriers

Comments regarding Downtown's physical environment primarily fell under the headings of "change resistant" land uses, deterioration and fragmentation. In the Windsor Locks TOD area, physical development challenges have been identified as a potential detriment to short and midterm development/redevelopment:

- Deterioration of properties and buildings.
- Lack of clear downtown definition.
- Topography on the west and south side of Main Street.
- Access to the Montgomery Mill Site.

These are addressed, and solutions suggested, throughout the report. They should occur in a progressive, sequenced set of actions predicated on station relocation. Redevelopment of the Montgomery Mill, downtown's catalyst site, should commence as immediately as possible; the other actions will follow logically.

Regulatory Barriers

Several regulatory barriers potentially affect downtown. Each has been discussed at length with the appropriate state and local agencies.

Montgomery Mill

Connecticut is one of the few states in the country which prohibit development in a floodplain of "critical activities." One such critical activity is housing if state funding is involved. The mill site will require substantial public grant assistance to bridge the financial gap and, to that end, may require a special exception from the commissioner of DEEP. This is likely achievable, given the physical criteria for the exception (i.e. dry access). In meetings with both the CT Department of Community Development (DECD) and the CT DEEP, it was determined unclear whether an exception would be required for this redevelopment. In addition, due to the proximity of mill access to the railroad grade crossings, the project will be scrutinized by both the CT Office of State Traffic Administration (OSTA) as well as Amtrak. Offsite improvements may be required.

Main Street Improvements

Improvements will require ConnDOT permits. The report recommends a complete streets approach to roadways here, including on-street parking, wide sidewalks, bike lanes and bicycle tracks, roundabouts, intersection improvements, and so on. Coordination with ConnDOT will be critical to realize these improvements in accordance with the overall vision of the TOD downtown area. Numerous meetings with ConnDOT have occurred, and at a concept level, the agency has generally endorsed the recommendations while cautioning that there are many details that would need working out. The relationship among vehicles, bicycles, mass transit, and pedestrians as equal users of the spaces, is a critical component of the recommendations, and of any sustainable smart growth development associated with a station stop.

Development Sequencing

Redevelopment of Montgomery Mill is the catalyst redevelopment effort and should happen immediately. Further development and investment opportunities are predicated on market conditions, physical feasibility and the timing of station relocation.

Charts on the following pages show a logical sequence of development activity based on the relocation. Development sequencing is illustrated in two charts; first, physical building redevelopment (Property Redevelopment) and, second, Public Infrastructure improvements. Property Redevelopment opportunities are prioritized based on the timing of relocation, on availability of land, and on life cycle condition of affected properties. Public Infrastructure investment recommendations are prioritized based on the preparation of areas for redevelopment, on place making and aesthetic improvements, and on recommended mitigations of traffic and multi-modal transportation recommendations. All are predicated on station relocation and anticipated sequenced development. Anticipated land uses based on market analysis are suggested but can never be guaranteed. Form-based coding for the area will primarily dictate the shape of redevelopment, rather than the specific uses driven by market conditions.

Initial Increments

We have discussed jumpstarting redevelopment in downtown with the "catalyst site." Overcoming redevelopment inertia often takes time. In the shorter term, municipalities often begin to prepare their downtown areas to make redevelopment opportunities more attractive, to begin to create the sense of place needed. Connectivity strengthens downtown's role as the heart of the community and helps to fuel creative as well as everyday business processes. Fast, reliable internet connectivity -- WiFi, cloud, satellite and broadband-- is an important aspect of fueling the revitalizing town. Earlier work by Ferrero Hixon Associates, on short term recommendations and downtown wayfinding programs, suggested these options, as well as expanding municipal recreation uses on the Middle School fields. It is important to make progress visible, and the study identifies many inexpensive initiatives the town should prioritize and carry out (excerpts from this study are included in the appendix). Additional incremental step initiatives include the following:

1. Pedestrian/Bicycle connections.
2. Creating pedestrian and streetscape improvements. Circulation and roadway improvements should be designed to create high quality landscape and pedestrian connections. Funding for these improvements should be in the funding for vehicular and roadway improvements.
3. Improvements to the Canal Trail for enhanced connectivity, access and safety.
4. Other aesthetic enhancements recommended in the previous FHA master plan.

PROPERTY DEVELOPMENT SEQUENCING

PROPERTY DEVELOPMENT SEQUENCING

SITE	NAME	USE	RESIDENTIAL FOR SALE		RESIDENTIAL RENTAL		COMMERCIAL / OFFICE	RETAIL/ RESTAURANT	OTHER	SEQUENCE	STORIES	NOTES	PARKING SITE	PARKING STREET	DEVELOPMENT TYPE	ACTION ITEMS
1A	Montgomery Mill	Residential	55000	38	135,000	92		Optional Mixed Use	Trails/ Park/ Railroad Station Connection	1	5	Parking on first Mill level. Permit required for floodplain. Moderate environmental cleanup. Optional power generation from canal turbines.	Min. 1.75 sp/unit	NA	PPP	Preapplication meetings with CTDEEP & STC, if applicable. Define environmental remediation level. Confirm DEEP commission exception. State funding availibility
1B	Montgomery Mill	Residential	50,000	42					Park/ Optional for sale condos	1	4	Parking on first level	Min. 1.75 sp/unit	NA	Private	Prepare site as part of 1A development
2	Historic Station	Retail/ Restaurant						3,400	Museum/ Municipal	1	1	On-street parking w/ direct station connections		10/shared	Public or Private	Secure funding for rehabilitation. Stabilize deterioration at a minimum.
3	2 North Main	Mixed					7,200		Gateway Plaza	1	2	Include gateway triangle	+/- 30	0	Private	
4	Station Site	Rail Station							Station/ Platforms/ Shared Parking	2	1	Include area imps. Streetscapes/ connect.	+/-106		Public	Insure developability of future mixed uses. Develop real estate model with CTDOT.
5	Station Site Mixed Use	Grab & Go/ Retail/ Office					7,500	7,500	Connecting plazas & streetscapes. Possible residences in 6B. Midblock crossing	2	2/3	Provide outdoor plazas/ activity areas, bike storage, vendor areas, and public art.	Shared	10	PPP Lease / Long Term	Develop CTDOT real estate agreement and solicit developers. Prep site as part of station construction.
6A & 6B	Station Site Mixed Use	Mixed					5,000	5,000	Same as above	2	2/3	2nd floor Building Connections/ Direct connection to Station Building & Up&Over	Shared	Shared	PPP Lease / Long Term	Same as above
7	Main St Mixed Use	Office/ Residential/ Retail			11,000	10	9,000	6,600	Mix of uses May vary	3	3	On-street diagonal parking/ Upper level rear parking- parcel consolidation	N/A	33	Private	On street parking accomodates first phase
8	Housing Auth. Property	Mixed			27,000	32		7,400		3	2/3	Possible connection & elevator to ex. Buildings	+/-104	30	PPP w/ Housing Authority	Secure arrangement with Housing Authority; seek development partner.
9	Main St Mixed Use	Office/ Residential			8,400	8	4,200			4	3	See Note Above	+/-116	Shared w/above	Private	Upper level parking required
10	Library Residential	Residential	28,640	21						4	2-3	Rear alley loaded parking	36	13	Private	Secure library agreement. Seek development partners.
11	Chestnut St	Residential	15,000	16						5	2	Share rear yard parking	Share w/Site 8	v	Private	Possible short term stand alone project
12	W.L. Commons	Mixed	38,000	25	25,000	25		17,100	Anchor Tenant	5	3-5	Variable timing Share station site parking	+/-149	12	Private	
13	Bridge St Square									5						
TOTAL			186,640	142	206,400	167	32,900	47,000								

Property Development Sequencing

1) Immediate

Opportunities associated with current and likely mill redevelopment, historic station rehabilitation, and with 2 North Main Street. They will occur independent of station relocation, although relocation will increase the longer term success of the endeavors.

2) Station Relocation

Improvements will be associated with development of the station site, and with providing necessary connectivity to adjacent areas. Station site alternatives have been addressed in previous section. The site should be designed for a mix of uses, and ConnDOT should develop a mixed-use private development ownership or long term lease model for the site to achieve a truly mixed use station site.

3) Soon After Station Relocation

Redevelopment of the west and south sides of Main Street with mixed-use, and additional housing on housing authority property, will be predicated on the station relocation. The opportunities will occur either with, or soon after, relocation and initiation of service.

4) Future Mid Term

Development of these areas is not necessarily tied to train station relocation, and could occur at any time. However, certain public infrastructure improvements would need to occur before realization of these, particularly at the Library site and with connections to Town Hall and St. Mary's Way.

5) Future Long Term #1

These come from station relocation as a draw of increased visibility, activity and property values. Windsor Locks Commons offers the best large site redevelopment in the TOD area, but it is in good condition and almost fully leased. In the future, the land owner could choose to redevelop the property yielding additional square footage, shared parking, and other desirable uses. Rebuilding could occur at once or in sections. Additional housing on Chestnut Street will be predicated on parcel consolidations, and on construction of common parking facilities, as diagrammed.

6) Future Long Term #2

Sites, primarily along Main Street and Grove Streets, are currently leased and in good condition. Despite the opportunity for increasing density on these sites, it will not be financially feasible to do so in the short or mid-term. Successful downtown activity, increased land values and exposure, increased density, and the need to fund substantial capital improvements, will be issues land owners will consider for a full property redevelopment.

Public Infrastructure Capital Improvements Sequencing

1) Immediate

Some improvements are tied directly to current or expected activities, including reuse and renovation of the historic station, redevelopment of Montgomery Mill, expanding town wide recreational uses on the middle school fields, and the gateway anchored by redevelopment of 2 North Main. Generally includes remediation or site preparation assistance on the mill sites and construction of new streetscapes, on street parking and sidewalk connectivity.

2) Prior to or with Station Relocation

Other areas are directly associated with the station relocation, and include primary transportation and Complete Streets enhancement and connectivity. Among these are development of significant on street parking, conversion of Chestnut to a two way system, and development of the roundabout, and vehicle connectivity behind Windsor Locks Commons to the station.

3) Station Relocation

Some areas have a direct bearing on station relocation and train operations, including station site facilities and parking, bicycle tracks across to East Windsor. Bridge Street intersection improvements and mitigations, and development of internal streetscapes and connectivity. Predicated on these come to reality, a roundabout on the east side of the river has been proposed as a gateway feature, compensating for ConnDOT required changes to mill access.

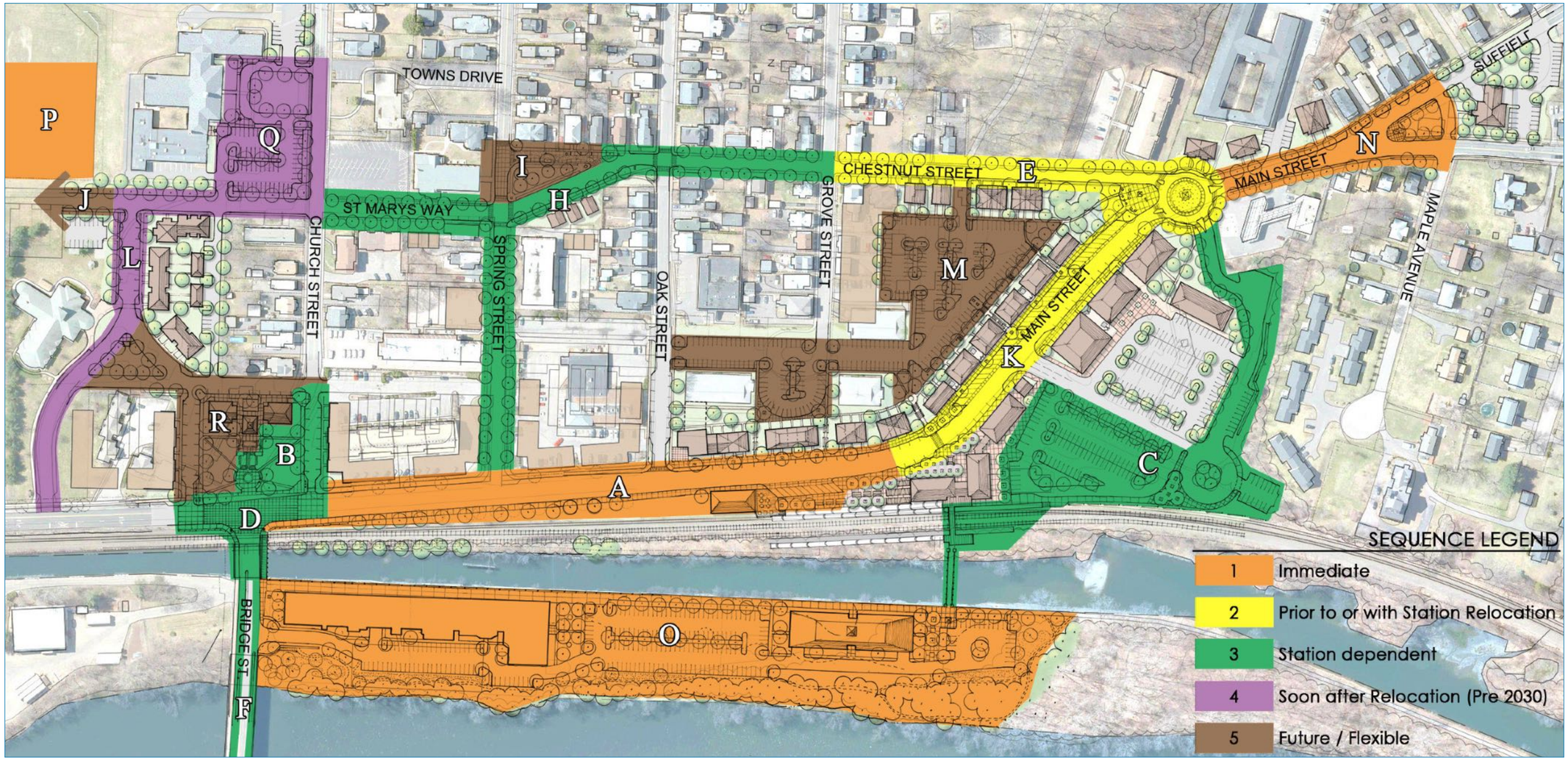
4) Soon after Relocation (Pre 2030)

2030 is considered the full build out year for the purposes of this report, using ConnDOT growth rate calculations and traffic volume analysis. Suggested connectivity improvements which could provide an alternate route across downtown, without moving through the Bridge Street/ Main Street intersection, will have very positive effects on intersection operations, and result in potential elimination of ConnDOT's limiting turning in and out of Ahlstrom and Montgomery Mill.

5) Future

Finally, opportunities will exist in which complex relocations or parcel consolidations are required. Office condominiums could be relocated to new, larger space adjacent to the existing library access drive, and other parcels behind existing business on the west/south side of Main Street, at the curve, would require consolidation.

PUBLIC INFRASTRUCTURE CAPITAL IMPROVEMENTS SEQUENCING



PUBLIC INFRASTRUCTURE CAPITAL IMPROVEMENTS SEQUENCING

AREA	NAME / DESC.	SEQUENCE	RESPONSIBLE ENTITY	ACTIONS
STATION RELOCATION / PREPARATION				
A	HISTORIC STATION SITE & STREETSCAPE, 8' MIN WALK, EAST SIDE OF MAIN ST TO HISTORIC STATION	1	TOWN	Design/ develop historic station site and streetscape/ on street parking both sides. May be combined with Area (Q).
B	BRIDGE STREET SQUARE (PARTIAL)	3	TOWN	Close and remove Church St and develop partial urban square.
C	STATION SITE IMPROVEMENTS CANAL CROSS & ACCESS / RAB	3	DOT	Aquire easement and develop limited access improvements through Windsor Locks Commons. Include Station Site as a mix of uses and develop parking / platforms and up &overs. Construct bike/ pedestrian bridge over canal to link to canal trail.
D	BRIDGE STREET INTERSECTION IMPROVEMENTS & MITIGATION INCLUDING PEDESTRIAN AMENITIES	3	DOT	Implement intersection improvements and crossings. Install bike/ pedestrian dedicated canal crossing. Connect to Bridge Street cycle tracks.
INCREASE CONNECTIVITY & MOBILITY				
E	CHESTNUT STREET TWO WAY CONVERSION	2	TOWN	Coordinate with DOT, implement zoning conversion. Sidewalk and streetscape connections.
F	BRIDGE STREET CYCLE TRACKS	3	DOT	Implement Bridge lane diets including development of cycle tracks with direct connection to canal trails.
G	E. WINDSOR ROUNDABOUT	3	DOT	Implement only if signal elimination.
H	SPRING STREET & CHESTNUT STREET STREETSCAPE IMPROVEMENTS	3	TOWN	Implement streetscape / traffic calming and connections / on street parking to Town Hall.
I	ST. MARY'S TRIANGLE IMPROVEMENTS	5	TOWN	
J	MAIN STREET CONNECTION	5		Coordinate necessary property agreements for Main Street connection between Dexter Plaza and Bickfords Nursing Home with on street parking and east/west connection to Middle School drives and parking. Connect all to Area (K).
FOSTER NEW DEVELOPMENT INITIATIVES				
K	MAIN ST. STREETSCAPE IMPROVEMENTS & ON-STREET PARKING / ROUNDABOUT	2	TOWN / DOT	Implement north of Windsor Locks Commons to Station Site improvements including on street parking and Roundabout. Coordination with CTDOT.
L	LIBRARY MAIN ST CONNECTIONS & DEVELOPMENT SITE	4	TOWN	Extend road/ drive from St. Mary's Way to Library driveway and around Middle School fields (possible second phase) to connect to southerly Middle School driveway, provide on street parking and new library housing site. Solicit housing developer.
M	CONSOLIDATE UPPER PARKING	3-5	TOWN / PROPERTY OWNERS	Consolidate properties through common land owner agreements. Construct upper level parking area with direct connectors and improvmements to Housing Authority land. Maybe accomplished through PPP with Main Street development parcels.
GET RESIDENTS DOWNTOWN				
N	TRIANGLE GATEWAY	1	TOWN	Aquire private property control, design & implement Triangle Gateway and streetscape improvements at 2 North Main St.
O	ENVIRONMENTAL CLEANUP CANAL TRAIL / CANAL TRAIL PARKING	1	PPP	Assist development entity with cleanup and other potential funding opportunities. Construct trailhead parking, remove brush and implement trail improvements. Secure right to pass with easements.
P	MIDDLE SCHOOL FIELDS- CIVIC EVENT SPACE	1	TOWN	Study ancillary off peak event uses on Middle School athletic fields and implement necessary changes. Provide future road/ drive accomodations per Masterplan.
Q	TOWN HALL SQUARE	4	TOWN	Rework Town Hall site to provide central green space square.
R	BRIDGE STREET SQUARE COMPLETION	5	TOWN	Completion of Bridge Street Square including internal connections to Library access drives. Relocation of Waterside office condos required. Relocate to 2-4 story buildings to the south of square.

Public Improvements; Order of Magnitude Cost Estimates

In order to provide a starting point for acquiring funding to begin public improvements a conceptual order of magnitude costs for short term improvements has been prepared. Cost estimates include anticipated design, engineering and permitting, as well as for hard construction. In general, the work is streetscape related. To that end, the following assumptions have been used:

- Streetscapes include new walks with partial brick pavers, ornamental lighting, signage, curbing, benches and other incidental improvements.
- Projects will not include substantial roadway reconstruction except as noted.
- Existing curb locations will be held wherever possible.
- No subsurface infrastructure or utility enhancements could be necessary.

Please refer to the "Public Infrastructure Capital Improvements Sequencing" graphic and chart.

Conceptual Public Financing Strategies

A broad program to provide incentives, and financing tools to spur priorities such as workforce housing and mixed-use development, save endangered buildings, and increase downtown's environmental friendliness, could be funded in various ways. In general and with some exceptions, financing for public improvements will be from state and federal assistance programs supplemented with municipal funds. Private development will be implemented through public private partnerships (PPP's) or be fully privately funded. At least in the short term it should be anticipated that parcel by parcel redevelopment will need financial assistance through public sources to bridge the financing gap, until land values leases and rents reach future levels. For the short and mid-term, private investment in any PPP should be used to leverage public funding, and public infrastructure and streetscape improvements should be geared toward encouraging development within the area, and creating a stronger sense of place in downtown.

Area	Description	Order of Magnitude Cost
A	Streetscape improvements from Bridge Street intersection to north of the historic train station. Includes streetscapes both sides, multi modal pedestrian path on east side, on street parking and plazas near existing station.	$1,003,600
N	Streetscape improvements from Chestnut Street to 2 North Main including triangle gateway plaza.	$519,000
K-1	Streetscape improvements near new station site both sides including on street diagonal and parallel parking, mid-block crossings.	$830,300
K-2	Gateway Roundabout and plaza	$577,500
E	Chestnut street two way conversion including new sidewalks, street trees and lighting.	$505,000
D/B	Partial Bridge Street Square park including realignment of Church Street, intersection improvements	NA: Assumed completed by DOT as part of station traffic mitigations.
C	Access and Parking Lot improvements associated with Station relocation.	NA: Assumed completed by DOT as part of station relocation.
F	Bicycle and Pedestrian improvement over bridge from East Windsor to Main Street intersection including cycle tracks on both sides and new bike / pedestrian bridge adjacent to existing canal bridge.	$325,000

Note: All figures do not include design fees or construction administration costs but do include a 30% contingency.

Connecticut's Commitment to TOD

ConnDOT is authorized by state statute to participate in TOD activities on its own station properties, as well as on adjacent or nearby properties, under certain circumstances. It is recognized that station sites and areas offer opportunities for TOD as part of the improvement. Currently, renovation of the Stamford train station into a mixed-use TOD is a developing model for how the state will work with a private development entity (PPP) to create opportunities. ConnDOT is currently part of a team of state agencies engaged in planning and interagency technical assistance. The interagency team is in process of identifying ways to effectively coordinate efforts and work collaboratively with a community in support of TOD.

Some implementation techniques are discussed below, and a list of potential grant, financing and loan opportunities is included in the appendix of this report.

Organizational Techniques

1. Create a downtown redevelopment agency 501c3 nonprofit entity. A nonprofit entity will have the ability to leverage public funding, coordinate private development opportunities, coordinate much needed downtown events and market opportunities.
2. Approve and implement new downtown zoning regulations with new form-based codes, as presented here. This is an immediate action item to protect the development vision in light of anticipated short term development activity associated with the station relocation.
3. Once the station is relocated and service initiated, create a special downtown TOD taxing district or Special Service District. Such districts have the ability to levy taxes for maintenance, streetscapes and other capital improvements. Given existing property values, and rent and lease information relative to redevelopment costs, this initiative would not be popular until revenues rise.
4. Hire an events coordinator, and institute a regular regime of downtown programs at different sites including Dexter Plaza parking lot, Middle school field, canal trail area, and so on.
5. Identify demand drivers / anchors / employers expected to be the largest source of new jobs in the region in the coming years. Align the growth of such organizations with the planned transit investments.
6. Study and subsequently link downtown with corporate properties for housing and retail, as well as transportation.

Financial Techniques

1. Tax increment financing (TIF): Connecticut allows municipalities to use tax increment financing to fund economic development projects. In general, anticipated increase in tax revenue generation (increment) from a project over time pays for costs incurred to fund the project. Tax increment generated must generally meet the debt service of the bonds. Areas must be designated and plans prepared to redevelop or rehabilitate them. The areas must be considered blighted and suitable for commercial and industrial reuse. In general, there are three primary TIF methods:
    a. Pay As You Go: The municipality designates a development area and dedicates the annual increase in property tax revenue from that area to fund relatively small public improvements there. This method works in areas where property values and, consequently, tax revenues are going up. It also allows the municipality to finance improvements without issuing bonds and incurring debt. But it could take time to build the funds for major improvements
    b. Bond Financing: The municipality adopts a plan to redevelop a designated area; issues tax-exempt bonds; uses the proceeds to acquire, clear, improve and assemble land parcels; and repays the bonds with the incremental property tax revenue the redeveloped area generates. Tax-exempt bonds bear a lower interest rate than other forms of financing. But the municipality's ability to repay the bonds depends on whether improvements generate enough incremental tax revenue to repay bonds on schedule.
    c. Credit Enhancements: A developer proposes to construct a new facility or rehabilitate an existing one with private dollars. The municipality designates the property a development area, and agrees to channel some or all of the incremental revenue

back to the private developer to repay specified development costs. The approach is "performance-based," meaning that the developer receives the revenue only if he or she completes the work; saves the municipality the expense of issuing bonds; and eliminates the risk that the improvements may not generate enough revenue to repay the bonds.

2. Grant acquisition and leveraging:
    a. Transportation/Infrastructure: leveraging transportation investments to improve downtown is a planning process founded on understanding that the future of downtown is linked to transportation. Improvements must be made to reduce congestion, aid circulation, and overcome the negative effect from passing through the intersection at Bridge Street and Main Street. The investments should be targeted to improvements which relieve congestion in the intersection, create critical connectivity to other uses, provide streetscape improvements and necessary on street parking, and expand development and town building activities. The most critical include extending the Chestnut/St. Mary's Way north-south connection through to the Library property, and eventually beyond to Elm Street; cycle tracks over the Rt. 141 bridge; and streetscape, on-street parking, and pedestrian connectivity to the station. Such investments will foster:
        i. Revitalization of existing properties
        ii. An enhanced mixed use district tied to the TOD area
        iii. Enhanced pedestrian and bicycle connectivity, as an alternative to motor vehicle use, through Complete Streets design concepts
        iv. Downtown connectivity and alternative routes
        v. New development and connected open space opportunities
    b. Environmental remediation and liability limitation programs: this grant system will most likely be used as part of a PPP in which the municipality will commit to providing grants or financing incentives to help overcome any development gap. The municipality may elect to clean and prepare a site or sites in advance of actual development interest in order to remove development unknowns and make the site and area more attractive to developers. Additionally there are programs available which will limit an owner's cleanup liability to the subject property. Applicable Connecticut agencies are CT Department of Economic And Community Development (DECD) and the CT Brownfields Redevelopment Authority (CBRA) which is a subsidiary of the CT Development Authority (CDA). In many cases the sites must be designated by the state as cleanup sites and in most cases working with a PPP must own the property prior to application.
3. Bond financing thought various state agencies including the Connecticut Development Authority (CDA).
4. Tax credits and low interest loans: tax credits are available and normally an extremely important component of the development proforma as they fund much of the project. Pertinent tax credit programs for Windsor Locks will be both state and federal historic tax credits associated with the redevelopment of the Montgomery mill and Low Income Housing Tax Credits (LIHTC) for the development of moderately affordable housing. With the latter, the developer must commit a portion of the residential units to stay within affordability minimums for fifteen years.

Parcel Consolidation

As mentioned, public land holdings within the TOD and downtown area offer tremendous opportunities. Still, there are areas where consolidation or use of private properties will be critical to success of coordinated redevelopment. The primary areas include the existing commercial properties across the street from Windsor Locks Commons, and the ability to provide roads between Bickford's Nursing Home and Dexter Plaza. Leveraging financing to gain public control of these potential assets will be necessary to implement important recommendations. Acquisition will result in disposition of the property to a redevelopment entity.

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